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IMPROVING EMOTION COMPREHENSION AND SOCIAL SKILLS IN EARLY CHILDHOOD
THROUGH PHILOSOPHY FOR CHILDREN¹

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Abstract:

The relationship between emotion comprehension and social competence from very young ages has been addressed in numerous studies in the field of developmental psychology. Emotion knowledge in childhood seems to have its roots in the conversations and explanations children hear about what emotions are and how to manage them. Given that behavioral interventions often do not achieve medium-term improvements or generalization to other contexts, this study evaluates the results of an intervention using the *Thinking Emotions* program. This program uses Philosophy for Children (P4C) as the work format and is based on the idea that reflection and dialogue among peers is one of the most effective ways to interiorize significant knowledge. The program was applied during one school year in two preschool classrooms (one class of 4-year-olds and one class of 5-year-olds). Comparisons of the pre- and post-treatment measures of the control (N=28) and experimental (N=32) groups show significant improvements in emotion comprehension and social competence in the 5-year-old children and improvements related to social competence in the 4-year-olds.

Keywords: emotion comprehension, social competence, Philosophy for Children, intervention programs.

Melhorando a compreensão das sensações e as habilidades sociais na primeira infância através da Filosofia para Crianças

Resumo:

A relação entre a compreensão das emoções e a competência social desde a primeira idade foi acordada em numerosos estudos no campo da psicologia do desenvolvimento. O conhecimento da emoção na infância parece ter suas raízes nas conversações e explicações acerca do que as crianças escutam sobre o que são as emoções e sobre como gerencia-las.

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improving emotion comprehension and social skills in early childhood through philosophy for children

Dado que as intervenções sobre a conduta no mínimo não conseguem melhoras ou generalizar-se desde outros contextos a médio prazo, este estudo avalia os resultados de uma intervenção com o programa *Pensando as emoções*. Este programa utiliza a Filosofia para Crianças (FpC) como forma de trabalho e tem por base na ideia de que a reflexão e o diálogo entre pares é uma das maneiras mais eficazes para interiorizar conhecimentos significativos. O programa foi aplicado durante um ano escolar em duas aulas de pré-escolar (uma turma de 4 anos de idade e uma turma de 5 anos de idade). As comparações das medições de pré e post-tratamento nos grupos de controle (N = 28) e experimental (N = 32) mostram melhoras significativas na compreensão da emoção e a competência social nos de 4 anos de idade.

Palavras-chave: compreensão emocional, competência social, Filosofia para crianças

Mejorando la comprensión de las emociones y las habilidades sociales en la temprana Infancia a través de Filosofía para Niños

Resumen:

La relación entre la comprensión de la emociones y la competencia social desde muy temprana edad se ha abordado en numerosos estudios en el campo de la psicología del desarrollo. El conocimiento de la emoción en la infancia parece tener sus raíces en las conversaciones y explicaciones acerca de lo que los niños escuchan que son las emociones y sobre cómo gestionarlos. Dado que las intervenciones conductuales a menudo no logran mejoras o generalizarse hacia otros contextos en el mediano plazo, este estudio evalúa los resultados de una intervención con el programa *Pensando las Emociones*. Este programa utiliza la Filosofía para Niños (FpN) como forma de trabajo y se basa en la idea de que la reflexión y el diálogo entre pares es una de las maneras más eficaces para interiorizar conocimientos significativos. El programa se aplicó durante un año escolar en dos aulas de preescolar (una clase de 4 años de edad y una clase de 5 años de edad). Las comparaciones de las mediciones de pre y post-tratamiento en los grupos de control (N = 28) y experimental (N = 32) muestran mejoras significativas en la comprensión de la emoción y la competencia social en los niños de 5 años de edad, y mejoras relacionadas con la competencia social en los de 4 años de edad.

Palabras clave: comprensión emocional, competencia social, Filosofía para niños

IMPROVING EMOTION COMPREHENSION AND SOCIAL SKILLS IN EARLY CHILDHOOD
THROUGH PHILOSOPHY FOR CHILDREN¹

The comprehension and regulation of emotions have a great impact on many areas of an individual's life. For example, emotions affect specific aspects and characteristics of the individual's identity such as self-esteem, self-concept and self-identity and they also condition the way in which relationships with others are established. Numerous studies have shown that there is a close relationship between emotion comprehension and social competence from very young ages through adolescence (Custrini & Feldman, 1989; Denham, 1998; Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major & Queenan, 2003; Mostow, Izard, Fine & Trentacosta, 2002; among others). The meta-analysis performed by Trentacosta and Fine (2010) points to the existence of a robust relationship between knowledge about basic emotions and social competence in preschool children across many studies. More specifically, different studies have found relationships between the level of emotion comprehension in preschool and primary-school children, the quality of pro-social behaviors with classmates and teachers, the quality of shared play, and the reduction in behavioral problems (Bosacki & Astington, 1999; Cassidy, Parke, Butkovsky & Braungart, 1992; Dunn & Cutting, 1999; Hughes, Dunn & White, 1998; Pons, Harris & Doudin, 2002; among others). For example, some authors have found that children who better understand the causes of emotions and recognize the basic emotions are also more accepted in their schools, even one or two years later (Denham, McKinley, Couchoud & Holt, 1990; Edwards, Manstead & MacDonald, 1984). Other authors have observed positive relationships that are maintained over time between understanding emotions and the capacity to resolve interpersonal problems (Dunn & Herrera, 1997; McDowell, O'Neil & Parke, 2000). Therefore, as this set of studies shows, the majority of the children who comprehend and appropriately manage emotions are also more socially skilled, achieving greater integration and social acceptance.

Emotion knowledge is therefore a relevant component of social competence. It includes many nuances and complexities that the majority of children in western societies discover through experience and interaction. In general, children receive very limited explicit instruction about what the emotions are and how to manage them. While it is true that most of the children use basic social skills, there are many problems related to social competence and emotional regulation that would improve through explicit instruction. For this reason professionals working in this area have been concerned about providing clear guidelines to enable greater social adjustment in children. This situation has led to the design and implementation of educational programs that improve emotion comprehension and social competence.

To evaluate the results of such intervention programs a recent meta-analysis conducted by Durlak *et al.* (2011) has looked at the impact of social and emotional intervention on students from 5 to 18 years. Their analyses of 213 interventions reveal multiple benefits on students' social and emotional skills, social behavior, conduct problems, emotional distress, and academic performance. Despite the success of the intervention, there are still many problems related to the effectiveness of intervention programs. As Durlak *et al.* (2011) recognize:

Only 16% of the studies collected information on academic achievement at post, and more follow-up investigations are needed to confirm the durability of program impact. Although all reviewed studies targeted the development of social and emotional skills in one way or another, only 32% assessed skills as an outcome (p. 419).

As can be seen, and as we have noted elsewhere, programs and interventions on social and emotional skills have important gaps (Authors, 2009 a, b, 2011). On the one hand, the majority are designed for the primary school stage, and on the other hand, the methodology they usually use has not been very effective (DuPaul & Eckert, 1994; Hundert & Houghton, 1992). From the earliest programs (designed in the 1970s and performing purely behavioral interventions) to those used currently (which have a more cognitive orientation and incorporate a variety of techniques such as self-instruction, self-observation, self-control and training in problem-solving), the majority of the programs teach specific skills or techniques that children can apply to their daily lives. Although we cannot state that these interventions are completely ineffective, when the results are evaluated, which is rare, they show that the children are not able to generalize what they have learned nor do they retain it over the long term (Denham & Almeida, 1987; Grossman & Hughes, 1992; Kam, Greenberg & Kusché, 2004; Palardy, 1992; Urbain & Kendall, 1980). These shortcomings have led us to approach intervention using other methods that involve greater elaboration and significant learning by the child. In other words, the innovation we are proposing is the use of dialogue as the basic tool of the intervention program.

The Role of Dialogue in Emotion Comprehension

Although there are some programs for preschoolers (such as the PATHS program, the Incredible Years program, and The Emotions Course), as just mentioned, the majority are directed toward children in early primary education. However, this type of intervention should begin in the first years of preschool because this is exactly when the child begins to socialize outside the family context, and when relationships with peers become relevant. In this way, the bases for social competence would be provided just when they are being put into practice. The few programs directed toward young children do not include dialogue as the main focus of the intervention. The Emotions Course program is the only one that attempts to promote conversation but works mainly through activities and games (e.g., role-playing, modeling, and drawing) (Izard, 2001).

But why we should introduce dialogue as a tool for intervention in emotional knowledge and social competence? Developmental psychology researchers have noted that there is a close relationship between narrative forms and conversations and children's mentalist and emotional comprehension (De Rosnay & Hughes, 2006; Meins & Fernyhough, 1999; Pons, Doudin, Harris, & De Rosnay, 2006; Racine, Carpendale & Turnbull, 2007; Raikes & Thompson, 2008; Symons & Clark, 2000; Nelson, 2007). One distinguishing characteristic of families is the manner and frequency with which they talk about emotional states, their causes, their consequences, and their regulation. Differences in frequency are reflected in the vocabulary of children from very young ages. Thus, when the words a child uses



during an hour are counted, there are large differences found in the use of emotional terms. While some children do not use any, others can employ up to 25 (Dunn, Brown & Beardsall, 1991). These differences, which can already be observed in 2-year-olds, can also be noted in the language of the mothers (Dunn *et al.*, 1991). Children's use of emotional terms and their participation in conversations about emotions with adults are good indices of the emotion comprehension they will develop later in life. In this sense, diverse studies have found that children who use more emotional terms and participate more in conversations about emotions also comprehend and regulate the emotions better on measures taken months or even years later (Harris, 2005).

Within the framework of the conversation, one of the key elements that affect children's emotion comprehension is explanation (De Rosnay & Hughes, 2006). More detailed analyses show that it is precisely the explanation of the emotional state (its causes, its consequences, its regulation, etc.) that favors greater understanding by the child (Brown & Dunn, 1996; Denham, Zoller & Couchoud, 1994; Garner, Jones, Gaddy & Rennie, 1997). Furthermore, conversations constitute the framework in which to acquire the narrative formats that serve to analyze, structure and communicate the events of daily life (Harris, 2005; Nelson, 2007). Children acquire these formats between two and five years of age. Acquiring a coherent format or style depends largely on the conversational style of the parents. A highly elaborated conversational style is characterized by integrating detailed descriptions of past events, using adjectives, situating the action in time and space, highlighting the importance and interest of the event and its emotional components, posing questions, and making an effort to maintain a conversation. Some studies have analyzed the type of discourse parents maintain with their children, and they have determined that the use of an elaborate style by the parents favors the use of this same narrative style by the children (Reese & Fivush, 1993; Reese, Haden & Fivush, 1993; both cited in Harris, 2005). Through the use of these styles, children will be able to understand, organize, communicate and regulate their emotional experiences more easily.

Based on this theoretical framework, which combines elements of discourse and narrative forms, explanations about emotional states, and emotion comprehension in children, we developed an intervention program that employs the Philosophy for Children (P4C) program (Lipman, Sharp & Oscanyan 1980) as its main tool. There are three reasons for doing so. First, as we explain below, through Philosophy for Children (P4C), the aforementioned conversational elements are put into practice. Second, as P4C is based on philosophical dialogue, it goes beyond the limitations of other methods that try to transmit techniques or teach behaviors through modeling or role-playing. Finally, as outlined below, P4C encourages "dialogue" between children. This form of exchange goes beyond conversation, narrative and discussion, promoting complex thinking skills (i.e. critical thinking, which includes elaborate concepts, questions about the world and considering alternative perspectives to one's own). In this sense, the promotion of critical thinking through dialogue on social and emotional questions is the main element that distinguishes this intervention program.

Philosophy for Children Focuses on Emotions: *Thinking Emotions*

The P4C program was created by Matthew Lipman in the early 1970s. His purpose was to develop the thinking of children and adolescents to improve their individual and social experiences. P4C is a pragmatic applied philosophy that stimulates reflection about philosophical questions through dialogue among peers. To put it into practice, Lipman designed a series of philosophical novels for children between 6 and 15 years of age that dealt with open concepts. The questions Lipman proposes through his novels do not have only one answer, thus stimulating dialogue, the interchange of different perspectives and reflection. Through discussions led by the teacher, the children are to internalize the processes of reflection and inquiry, thereby generating critical and creative thought.

The UNESCO now considers the practice of P4C to be an educational priority throughout compulsory education. Along these lines, in March of 2011, the Philosophy of Social and Human Sciences section of the UNESCO created an *International Center for the Practice of Philosophy with Children* (UNESCO, 2011). Numerous studies have shown how the application of P4C in the classroom improves children's cognitive skills, favoring analytical, critical and creative thinking (Author, 2005, 2007; Author et al., 2005; García-Moriyón, Colom, Lora, Rivas & Traver, 2000; García-Moriyón, Rebollo & Colom, 2005; Iorio, Weinstein & Martin, 1984; Morehouse & Williams, 1998; Niklasson, Ohlsson & Ringborg, 1996; Palsson, Sigurdardottir & Nelson, 1998; Reed, Ronald & Henderson, 1984; among others). However, very few studies have used P4C to improve emotional and social skills, and authors who work with the P4C program stress the need to do so. As Schleiffer, Daniel, Peyronnet and Lecomte (2003) state:

Given the neglect of the emotions in education (even in moral education), much more work needs to be done on how children can be helped to learn about, identify and articulate their own and others' emotions. More research is needed on the impact of programs like P4C, on both short-term learning and long-term development of emotions, particularly with very young children (p.7).

P4C is an ideal way to work on knowledge about emotions and, in this way, develop the basis for social competence. On the one hand, as previously mentioned, dialogues about emotional questions in which the causes, consequences and other elements linked to the emotions are explained, favor the acquisition of emotional knowledge. On the other hand, listening to and participating in detailed dialogues about emotions helps to interiorize a narrative format that will provide children with a framework for reflecting on, analyzing and comprehending their emotions. All of these skills are put into practice through the community of inquiry created in P4C. Finally, the knowledge that children generate through dialogue has its origin in their own reflections. Thus, the adult does not attempt to transmit knowledge or a technique that the child must integrate into his or her system. On the contrary, it is the child who reflects through dialogue with peers and produces much more significant knowledge: knowledge that he or she can use in real life and transfer to other situations outside the classroom.

This union between dialogue as a way to improve emotion comprehension and the intervention using the P4C is largely based on the theses of Vygotski (1932,



2001). As is well known, for this author, language is a fundamental tool in the development of thought. Furthermore, regarding the construction of the self and its consciousness, the interpersonal medium in which this knowledge emerges is especially important. The interchange that occurs among children and the progressive awareness that answers are found through joint reflection – the “community of inquiry” to which we referred earlier – have much in common with what other authors, such as Nelson, from a Vygotskian perspective, have called a “community of minds” (Nelson, 2007).

Previous exploratory studies conducted with groups of 4 and 5-year-old children in P4C indicate that progress was achieved in three ways: 1) Development of language skills – children used more words to express their thoughts at the end of the experiment than at the beginning; 2) Quality of exchanges – a transition was demonstrated over time from the first exchange of an anecdotal type to dialogical and semi-critical dialogical types of exchanges (Author & Delsol, 2005; Author, Pettier, Auriac, 2011); 3) Children’s social representations of emotions – instead of associating their emotions only with observable manifestations (i.e., *What is sadness?* e.g., *Crying and pouting*), the children began to understand the social significance of emotions and to recognize the role of others in the emergence of their own emotions (i.e., *What is sadness?* e.g., *When you’re all alone.* or *When I’m being yelled at.*) (Author, Auriac, Garnier, Quesnel & Schleifer, 2006; Author *et al.* 2010).

Based on the previous works of the author (2002, 2003), the objectives of the program we have developed within this framework include improving the comprehension of basic emotions (happiness, sadness, fear and anger), emphasizing aspects such as the identification of one’s own emotions and the recognition of emotions through facial expressions, reflecting on the causes and consequences of emotions, and regulating emotions. Moreover, for children aged 5 years, it is possible to work on two complex emotions (pride and jealousy) that have a great impact on social interaction. The program also deals with emotional ambivalence and the distinction between real and pretend emotions. Finally, two fundamental aspects are worked on: empathy and social competence.

To employ P4C with young children, we needed to introduce several adaptations. First, we chose and designed stories related to emotions and with the appropriate content for young children (Author, 2002; Authors, in press) (see Table 2 for an example). Second, the stories presented to the children were associated to concrete and daily situations. The aim of this association was to facilitate dialogue and reflection. Third, we designed a set of concrete activities that complemented the dialogue. Thus, although the program uses dialogue and joint reflection as the main vehicles for learning, given the age of the children to which it is directed, many more specific complementary activities are proposed. In fact, we propose that a mixture of more specific individual and group activities (for example, drawing, miming, role-playing, etc.) along with dialogues of a more abstract nature are ideal for achieving the greatest benefits in children of this age. Finally, the program includes a series of activities for children to do at home with their parents. These activities have a dual purpose. First, they are designed to make the parents aware of the importance of emotional education and to become involved in it. The purpose of the activities is to produce a time of interchange between parents and children in which they speak openly about emotional questions linked to the family context (for example, pointing out what things make the parents angry, what things make the children angry, how

each of them manages that emotion). Thus, as a consequence of the first, there is the attempt to transfer the knowledge from the school to the family. Due to space limitations we do not present details or results derived from these activities.

The purpose of this exploratory study is to implement for the first time the *Thinking Emotions* program and evaluate its effects on the areas in which it intervenes that is, emotion comprehension, knowledge about social interaction strategies, and social competence in 4- and 5-year-old children. For this purpose, we implemented the program in only two classes. The limitations of this sample size and its implications will be addressed at the end of this paper. Despite these methodological problems, these initial results are new and relevant contributions to the evaluation of the program. These results demonstrate how dialogue can be used effectively with young children (something that has rarely been attempted). Also, for the first time, we adapted P4C to the field of emotional knowledge and social skills using a detailed and sequenced intervention program. Finally, we tested a new combination of a systematically organized intervention and educational methods. In the future, we will pursue a larger scale study to minimize the limitations of the current study.

The main hypothesis is that the children in the experimental groups who participate in the intervention sessions will improve their emotion comprehension, their knowledge about social interaction strategies, and their social competence in comparison with the children in the control groups. Given that we have limited space in this paper, we present only the results of some tests that offer indicators of emotion comprehension, knowledge about strategies to resolve interpersonal conflicts, and social adaptation. There were three selection criteria from the set of available tests, and we selected those that were applied directly to the children. While scores were obtained for all of them, they do not all require a qualitative analysis, which facilitates their joint presentation. Finally, we selected tests that reflect comprehension and competence in two of the main areas that this intervention is designed to improve (emotion comprehension and social competence). By slightly modifying different questions associated with the age groups, we believe that this selection makes it possible to show how dialogue improves comprehension, which, in turn, has noteworthy effects on performance.

Method

Participants

Of a total of 60 4- and 5-year-old children who participated in the study, 32 children comprised the experimental group and 28 comprised the control group. Both groups were divided by age. Thus, there was an experimental group of 4-year-olds (N=18, 6 girls, M = 51.6, DT:2.8), an experimental group of 5-year-olds (N=14, 5 girls, M = 64.8, DT: 4.2), a control group of 4-year-olds (N=9, 5 girls, M = 52.4, DT: 2.8) and a control group of 5-year-olds (N=19, 11 girls, M = 63.2, DT: 3.2). All of the children were Caucasian and attended a private, non-religious preschool in the city of Madrid. Children belonged to middle-class families. Demographic and socioeconomic characteristics of the preschool were similar to those of other private preschools in the city of Madrid.



Design

We selected four classes as subjects for the study. All children in the classes participated in the study. Two classes were the control groups, and two were the experimental groups. The preschool was located in two different buildings in two different areas of Madrid (one in a Northwest suburb and the other in the city center). Each building had one 4-year-old and one 5-year-old class (curricular design in Spain is organized according to birth year). In order to avoid potential contamination between control and experimental groups, the location of the buildings was the unit of randomization. Thus, the 5-year-old group in the Northwest building was randomly designated as the experimental group, and the 5-year-old group in the city center was designated as the control group; the 4-year-old class located in the city center was the experimental group, and the 4-year-old class in the Northwest building was the control group. We could not randomly assign participants into groups, as the groups were already established by the preschool administration; some groups were therefore not equivalent in gender distribution. Thus, the study design is quasi-experimental with pre-post measures and non-equivalent groups (Shadish, Cook & Campbell, 2001).

Procedure

Conducting Thinking Emotions. The intervention took place over the course of one school year. The treatment sessions with the children began in the month of October and ended in the month of May. The children in the two experimental groups attended a total of 30 sessions, one session per week, and each session lasted one hour. Sixteen sessions were dedicated to P4C (reading a story, asking questions and dialoguing). Ten of these sessions were devoted to each of the topics covered by the program (one session per topic). These ten sessions lasted approximately forty minutes and concluded with an activity in which the students drawn a picture of the emotion or the discussed topic. Six additional sessions of dialogue were conducted on the subject of coping strategies (one session for each basic emotion, one session for jealousy, and one session for social competence). In these sessions, children thought and dialogued about the most effective way to cope with negative emotions, which encouraged positive feelings and prosocial behavior. At the end of the strategy sessions, the children were encouraged to choose the best strategy through discussion and consensus. Teachers reintroduced the strategies when daily situations permitted and asked children frequent questions about their efficacy when using the strategies. Moreover, the program included several specific activities for regulating emotions. We assumed that through emotion regulation, children could effectively channel their emotions in social interactions. The remaining fourteen sessions were dedicated to different activities (one session for each topic and two additional sessions for empathy and social competence).

Before beginning to apply the program, all of the teachers in the school attended training that lasted 35 hours. In this training, the fundamentals of P4C were explained, and the teachers were trained in the practice of role-playing and in monitoring discussion sessions. Furthermore, the objectives and contents of the *Thinking Emotions* program were presented and explained in detail following the manual for teacher (Authors, in press; Authors *et al.*, in press). In this way, the teachers could use the same materials in the training sessions that they would later use in the classroom.

Teachers in the experimental groups participated in weekly fidelity checks with the authors throughout the academic year. The content and procedures of each session were prepared in advance with the authors on a biweekly basis. In addition, the first author observed and recorded the P4C or activity session every week. Following the Izard, King, Trentacosta, Morgan, Laurenceau, Krauthamer-Ewing & Finlon (2008) fidelity procedure, the observer completed a form assessing treatment fidelity. This form regulated fidelity concerning the procedures, content and conceptual framework of *Thinking Emotions*. Preparation and observation of the sessions served to provide feedback to the teachers on the specific techniques of emotion identification and regulation as well as on the administration of P4C sessions. The analysis of the forms and the observation of sessions ensured that similar procedures were applied by all the teachers involved in the program.

Parents of children in the experimental groups were informed through meetings with the first author about the goals of the program. The parents were asked to participate by completing monthly activities at home. Additionally, the parents were asked to be cognizant of daily situations in which they could initiate dialogues on emotions and social behavior with their children. A final feedback meeting was arranged to reveal the preliminary findings a few months after the post-test evaluation. The parents were enthusiastic about the potential benefits of the program. Most of the parents attended the meetings and participated in the monthly activities at home. In addition, many of them frequently asked about the progress of the sessions at school during the academic year.

Description of Thinking Emotions. The P4C sessions carried out with the children had the same format as the Lipman approach, a method that involves three steps. In the first step, the sessions begin with reading a short story that introduces the topic. The main support to be used was the *Tales of Audrey-Anne* elaborated by Authors (in press) which has already been used in the P4C program for young children. Then, after the reading, the children were asked to formulate a question about the topics that they would like to discuss based on the story. The teacher guides the discussion among the children with the objective of responding to the questions posed by the children, but without offering any answers. In this way, as we previously mentioned, the teacher leads and directs the discussion by posing questions without offering solutions (i.e. *Why do you say so? Can you justify your point of view? Who has a counter-example? What are the resemblances and distinctions between x and y?*, etc. (Lipman, Sharp & Oscanyan, 1980). In a third step, other sessions were based on specific activities the children had to do. These activities first involved actions by the children (for example, making a drawing, participating in a role-play, making a mural, listening to music, doing mime, imagining a situation, etc.), which were later complemented with an idea-sharing session and group dialogue. At the end of all the sessions, the teacher concluded by summarizing the most relevant ideas, proposals or solutions that the children had expressed or elaborated upon through the dialogue. As an example of the procedure, Table 2 includes the story used to introduce the emotion of fear, the questions formulated by the 4 year old experimental group that guided the dialogue, and the activities made in the classroom following the dialogue session.

Throughout the course and following the structure of the program, the intervention sessions dealt with knowledge about and regulation of the four basic emotions (happiness, sadness, anger and fear), the situations that produce contrary



emotions (emotional ambivalence), the difference between real and pretend emotions, empathy, and social competence. A summary of the main objectives of the program is presented in Table 1.

Table 1. Main Aspects on which the Intervention Program Focuses and Aims to Achieve

Topics	Aims	Nº of sessions
Basic emotions Happiness Sadness Anger Fear	For all basic emotions: Identify and recognize in oneself and others, correct labeling, adequate expression, adequate regulation, reflection on causes and consequences	12 sessions (3 sessions for each basic emotion)
Complex emotions Pride Jealousy	For both complex emotions Identify and recognize in oneself and others, correct labeling, adequate expression, adequate regulation, reflection on causes and consequences	5 sessions (2 sessions for pride and 3 for jealousy)
Mixed emotions	Reflection on emotional ambivalence, ability to identify mixed emotions, reflection on causes of mixed emotions	2 sessions
Real and pretend emotions	Distinguish real and pretend emotions, understand social situations that cause them, reflection on consequences of pretence and the relation with social competence	2 sessions
Empathy	Understand and adopt others' perspectives, understand others' emotions, learn to listen, reflection on consequences of empathy and how to foster it	4 sessions
Social competence	Learn to make friends, reflection on strategies to make friends, learn to identify and solve interpersonal problems, reflection on social conflicts	5 sessions

Complementary to the classroom sessions, the children worked on some specific questions at home with their parents (see Table 2 for an example of home activities). These reflections were performed monthly, and the main purpose was to produce some transference of the preferred responses learned in the classroom to the way these same questions were dealt with at home. The materials used at home with the parents often served as a starting point for a discussion or activity in the classroom. Thus, the children could compare, for example, different ways of regulating emotions or the variety of situations that produce emotional states based

on the contributions of their classmates. This pooling of ideas previously developed at home served to compare the children's own experiences with those of their classmates.

Table 2. Dialoguing and Working with Fear.

Tale: The Giant Ladybug Nick, Ana's brother, often has nightmares. When this happens, he is afraid and his heart beats so fast that he wakes up startled and bathed in sweat. He hates it! He wonders: "How can my mind make my body believe that the dream is happening for real?" One night, just when Nick starts to dream, his dream turns into a nightmare: it is early in the morning and the air is humid. Nick is all alone. He is walking to the school. A giant ladybug is following him from behind and suddenly it jumps on him. It lands heavily on his shoulder. THUMP! Nick starts to sweat and to breathe heavily. His heart beats really fast. The ladybug is incredibly huge: it is even bigger than his friends at school! It looks like a red and black monster. The monster is now flying around Nick. The ladybug talks to him in a very, very, very soft voice: - "Hello, nice little boy! Do you want to play with me? I am all alone. I am bored!" Nick does not know what to say. He is afraid, but, at the same time, he is drawn by the soft voice and the ladybug's kindness. Nick feels uneasy. He doesn't know why. He tells himself: "I shouldn't feel uneasy: the ladybug seems so kind . . . and it wants to be my friend . . ." Even so, Nick finds an excuse to get away: - "I can't play with you. My mommy doesn't want me to talk to giant ladybugs. Plus, I don't want to be late for school. I have to go." Upon hearing these words, the ladybug starts to growl: - "Grrrr! Grrrr! At the same moment, it pretends to throw itself on Nick. Nick, scared to death, starts to run. At first his steps are small, then they get bigger and bigger. He runs. He runs. And he runs! He doesn't stop running, even if he can't breathe anymore. Nick runs as fast as he can, to get away from the red and black monster, but. . . he isn't moving at all! He is stuck in the same spot! Nick hears his heart beating very loudly. He is covered in sweat. He wakes up with a start! - "Mommy! Mommy! Help me!" cries Nick, in tears. <i>Activities on Fear</i> 1. Dialogue guided by the children's questions These are some examples of the questions that the 4-year-old children (experimental group) asked after hearing the story: Why is Nick afraid? Why does he call his mommy? Why could he not move? What does the ladybug want to do? How big was the ladybug? How old was Nick? Where does the ladybug come from? These are some examples of the discussion plan for the teachers. The aim of these plans is that teachers become aware of the topics that the philosophical discussion should deal with: Why is Nick afraid? How does he feel when he is afraid? How do you know that you are afraid? What do you do when you are afraid? Why children have
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different reactions to fear? Is it normal to be afraid? Why? Do you know someone who has never been afraid? Is it possible that everyone is afraid but some people never show it? Are there things that used to frighten you but not anymore? Which things? Why they do not frighten you anymore?

2. *Identifying fear*

The aim of this activity is to identify real situations that elicit fear in children. The teacher begins by asking the children to mention at least one situation in which they are afraid. After the children have responded, the teacher can classify the situations according to fear caused by an external event and fear caused by internal reflection. This distinction will be useful when discussing coping strategies.

3. *Fear without words*

This activity seeks to foster the recognition and the identification of the facial expression of fear. To achieve this goal, children work only by gestural expressions. The teacher selects and groups several children in pairs. One of the children must attempt to scare or frighten the other without speaking.

4. *Drawing fear*

The teacher asks the children to draw a picture of a situation that causes fear. Children explain their drawings to the class. Drawings can also serve to introduce the first activity (identifying fear).

5. *Listening to fear*

The teacher will look for several pieces of music that cause fear and distress. After listening, the teacher will ask the children to label the emotion they felt. Next, he or she will encourage a discussion about the elements of the melodies that are frightening, demonstrating how music and sounds are related to emotions. The tale *Peter and the Wolf* is a good tool to show emotional contrasts through music.

6. *Coping with fear*

Once children have identified the situations that elicit fear, it is important to think about the effective strategies to cope with the fear. To achieve this goal, the teacher initiates a research community by asking the children, "What do you do when you are afraid?" and "does it work well?" The class will choose two or three effective strategies that will be illustrated in a mural. The teacher will take any available opportunity in class to refer to the strategies for coping with fear and to talk with the children about their effectiveness.

7. *The box of fear*

This activity allows children to begin to confront fear with a very simple action. The teacher offers an easy way to combat fear: locking it in a box. The teacher can build the box with the children or decorate an existing one in the class. Once the box is finished, the children will enclose one of their fears (represented by a drawing or a toy). All children could use the "box of fear" when they need it.

8. *Imagining fear*

The aim of this activity is for children to experiment with thinking about how fear influences the way we feel. The teacher tells two stories and asks children to imagine the story they are listening to. In fact, it is the same story interpreted in two different ways: A girl is in bed at night and hears different

noises. In one story, she believes that the noises are a monster, and in the other story, she thinks that it is the noise of the washer. The teacher asks the children why the girl felt different in each story and concludes by highlighting how the interpretation of events influences emotions. To conclude the activity, the teacher will link this conclusion with the everyday experiences of the children and explain how they can use these interpretations.

9. *Dealing with fear at home*

The aim of this final activity is for the children talk to their parents about various issues related to fear. One possibility is for children to write, with the help of their parents, about some situations that elicit fear. Parents and children could think together about the strategies they use at home when they are afraid. Another possibility is to ask parents to build a "box of fear" at home. The teacher and the child will explain to the parents what they have done in class and how to use the box. Parents may have the same resource at home and use it when needed.

Child measures

Before and after the intervention, all the children were evaluated on their emotion comprehension, knowledge of strategies for solving interpersonal conflicts, and social adaptation. The application of the tests was divided into two sessions. In one session, the TEC was applied, and in the other session, the sociogram and CEIC were applied together. Each session lasted approximately 20 minutes. In the first part of the session, the interviewers established a relationship that favored dialogue with the child. The interviewers were previously trained and practiced in the management, knowledge and administration of the tests. The evaluation was performed during the school day, and the order of presentation of the sessions was counterbalanced.

Emotion comprehension. To evaluate emotion comprehension, the TEC (Test of Emotion Comprehension, Pons & Harris, 2000; Pons, Harris & de Rosnay, 2004) was used. This test consists of 43 items that evaluate 10 components of emotion comprehension, progressively increasing the complexity. The test consists of an A4 picture book with a simple cartoon scenarios (or pictures) on each page. The test presents different scenarios. Beneath each scenario, there are three emotional outcomes typically represented as facial expressions. The general procedure was divided into two steps. First, while showing a given cartoon scenario, the experimenter reads the accompanying story about the depicted character(s). The face(s) of the characters in the cartoon were left blank. The situations were described in an emotionally neutral fashion, and a deliberate attempt was made to remove verbal and non-verbal emotional cues. Second, after hearing the story, the child was asked to attribute an emotion to the main character by pointing to the most appropriate of the three possible emotional outcomes (as depicted below the scenario). Children's responses were non-verbal, closed and spontaneous. The three possible outcomes consisted of one negative emotion (sad, angry or scared), one neutral emotion (does not feel anything, he is just okay) and one positive emotion (happy). The position of the correct response was varied systematically among the three positions across the test items. Control questions were sometimes introduced to check children's comprehension of the situation. Two versions of the picture book



were constructed, one for boys and one for girls (the items were identical – only the names of the main characters were changed).

The test is divided into 10 blocks presented in a fixed order. Each block assesses a specific component of understanding emotions ranging from basic tasks, such as recognizing emotions based on facial expressions (e.g., recognition of the face of a happy person), to much more complex tasks, such as understanding moral emotions (e.g., attribution of an emotion to a character who has performed something naughty and fails to confess to his or her mother). The test also includes understanding external causes of emotions, understanding desire and belief-based emotions, understanding the influence of a memory on a present emotional state, understanding the regulation of an experienced emotion, understanding the possibility of hiding an underlying or true emotional state, and understanding mixed emotions. For example, for component two (i.e., understanding the impact of situational causes on emotions), one of the items we presented reads as follows: “This girl is being chased by a monster. Is this girl feeling happy, just okay or scared?” The experimenter pointed to each possible emotion as it was articulated. One point was assigned for each item answered correctly. For this research, we used a short version that included two items per block, except for the recognition of emotions, understanding external causes of emotions, and understanding belief-based emotions, where all the items were used. Additionally, we eliminated the most complex component of the test (i.e., understanding moral emotions) because of the participants’ ages. For each correct component, one point was awarded, thus the final score ranged from 0 to 9. Following the criteria of Pons *et al.* (2004), to obtain a score of 1 on each component, it was necessary to correctly answer the two items that comprised the component, except for the first two components (identification and causality), where the subjects could obtain 1 point if they correctly answered 4 or 5 of the items.

Strategies for interaction with peers. To evaluate this aspect, the CEIC (Knowledge about Strategies for Interaction with Classmates by Díaz-Aguado, Royo García & Martínez Arias, 1994) was used. This test evaluates the child’s strategies for interacting with peers and resolving conflicts. It consists of the presentation of 4 drawings that depict social situations. For each scene, the children listen to a short story in which there is an interaction or conflict with a peer, and they are asked how the main character could resolve it. For example, the first story says, “Ana is a girl who just arrived at a new school and really wants to make friends with a girl who sits at the table next to hers. What can she do to achieve this?” Another story says, “One day Juan took a car to school and a boy in his class took it away. What could Juan do to get the boy to give it back?” The test includes a version for boys and a version for girls, where the only thing that changes is the gender of the characters. The correction makes it possible to assign a score according to the number of strategies the child is able to mention and his/her level of elaboration. The original test includes the different response categories the children can offer and the score awarded depending on the child’s degree of elaboration. The score for each strategy ranges from 0 to 5 points, and each subject’s final score is obtained by adding up the scores for each of the strategies offered during the 4 stories. For instance, for the story we presented as an example, a strategy earning a score of 5 would be to tell the other child, “If you give it back now, later, I’ll loan it to you and we can take turns”

or “Share it and each of us can play with it for awhile.” Strategies with a score of 1 would be “take it away,” “tell the teacher” or simply “ask for it.”

Sociogram. To evaluate the children’s social competence and degree of social acceptance, each of the participants created a sociogram. Each child was individually presented with photographs of all the children in the class. They were asked to choose the two girls or boys with whom they most liked to play and the two girls or boys with whom they least liked to play. Additionally, to clarify the question formulated, they were also asked, “Which boy or girl do you prefer to play with?” and “Which boy or girl do you not like to play with?” The children had to explain each of their choices.

Scoring. For each positive choice, a score of 1 was awarded, and for each negative choice, a score of -1 was awarded, including first and second option choices. By adding the preferences and rejections, children obtained a final score of popularity. Four categories of popularity were established. First, children who were chosen only as preferred and had no rejections were labeled as “popular” (score 3). Second, children were labeled “average” (score 2) when they received both preferences and rejections in the proportions of 3:1 and 2:2. Third, children who were not mentioned (neither rejected nor preferred) were classified as “forgotten” (score 1). Finally, when children received only rejections they were classified as “unpopular” (score 0). Each child obtained a pre-intervention score and a post-intervention score. To compare the effects of the intervention, a new classification emerged from the differences between pre- and post-measures. Children were considered as “improved” (2) when a better social status was obtained in post-test measures (i.e., children who changed from “forgotten” to “average”, from “unpopular” to “average”, or from “average” to “popular”). Children who did not change their social status were classified as “maintained” (1). Finally, if children lost social status, they were considered “worsened” (0). This new measure of a dependent variable allowed us to evaluate the effects of the intervention program by comparing the frequencies of three possible changes in both the control and experimental groups.

Results

TEC (Test of Emotion Comprehension)

The TEC evaluates emotion comprehension through various components from lesser to greater complexity. Table 3 shows the total mean scores of each group according to age and assigned group.

Table 3. Comparison of Mean Pre- and Post-Treatment Scores on the TEC by Age and Assigned Group

AGE	CONTROL				EXPERIMENTAL			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
4	4.38	(1.30)	6.22	(1.99)	4.42	(1.57)	4.94	(1.55)
5	5.56	(1.20)	6.22	(1.17)	5.57	(1.16)	7.43	(1.75)



As shown in Table 3, the experimental 4-year-old group obtained a lower mean post-treatment score than the control group, while the 5-year-old experimental group obtained a higher mean score than the control group. For the analysis, a two-way (age $\times$ condition) repeated measures ANOVA was performed, obtaining an interaction effect between the two factors ($F(1) = 12.01, p = .001, \eta^2 = .18$). The main effects on the mean scores were significantly different for age ($F(1) = 10.4, p = .002, \eta^2 = .162$), but not for the control vs. experimental conditions ($F(1) = .079, p > .05; \eta^2 = .78$). To analyze the interaction effect and identify the condition that produces this interaction effect, an ANOVA was performed to compare the pre- and post-test scores of the control and experimental groups for each age. The results indicate that the differences obtained in the 4-year-old group between the control ($M = 4.37$; $SD: 1.3$) and experimental ($M = 4.4$; $SD: 1.6$) conditions on the pre-test measure were not significant ($F(1) = .005, p > .05$). The same findings occurred with the post-test measure (control: $M = 6.2, SD: 2$; experimental: $M = 5, SD: 1.5$) $F(1) = 3.3, p > .78$). In the 5-year-old group, the prior measures for the control and experimental groups ($M = 5.5, SD = 1.2$; $M = 5.5, SD = 1.1$, respectively) did not show significant differences ($F(1) = .001, p > .05$). In contrast, for the post-test measures ($M = 6.2, SD = 1.1$; $M = 7.3, SD = 1.6$, respectively), significant differences between control and experimental group were obtained ($F(1) = 5.21, p < .05$).

Given that the five-year-old group obtained significant differences, we analyzed the different components of emotion comprehension evaluated by the TEC for this age group. Table 4 shows the percentages of correct answers for the control and experimental groups.

Table 4. Percentage of Correct Answers for Each of the Components on the TEC for the 5-Year-Old Experimental and Control Groups.

COMPONENTS	CONTROL		EXPERIMENTAL	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
I. Recognition	94.7	94.7	95.7	97.1
II. Causality	84.2	92.6	81.4	95.7
III. Intentionality	73.6	61.8	58.9	62.5
IV. Memories	86.8	78.9	67.8	85.7
V. Desires	97.3	100	91	100
VI. False belief	29.6	61.1	50	80.9*
VII. Real & pretend	44.7	63.1	60.7	89.2*
VIII. Regulation	71	86.8	82.1	82.1
IX. Mixed emotions	28.9	52.6	53.5	89.2*

* $p < .05$

Of the 9 components that make up the test, the 5-year-old children in the experimental group improved their scores on 8 components (compared with 6 in the control group). Thus, the only component on which the children in the experimental group did not improve was that of emotion regulation, obtaining a percentage of correct answers of 82.1% on the pre-test and post-test evaluations. In this case, a non-

parametric (Kruskal-Wallis) test evaluating the dichotomy of dependent variables (i.e., success or failure) of the items was performed. Compared with the control group, the children in the experimental group significantly improved their comprehension on 3 components: the comprehension of the false belief in the prediction of the emotional state ($H(1) = 3.8, p = .05$), the comprehension of the distinction between real and pretend emotions ($H(1) = 4.2, p < .05$) and the comprehension of emotional ambivalence ($H(1) = 5.4, p < .05$). These components, together with emotion regulation, were the most complex ones evaluated on the test.

On four other components (recognition, causality, memories and intentionality), the children in the experimental group obtained higher levels of correct answers, although the comparison did not yield statistically significant differences. Thus, the three simplest components of the test were correctly resolved by the majority of the children: the identification of basic emotions through facial expressions, causality, and the effect of desire on the emotional states. The remaining component was the most complex for all the children (the comprehension of intentionality and its role in the emotional states), with approximately 60% of the children in both groups giving correct answers. The comprehension of memories in the emotional states improved in the children in the experimental group, with a total of 85.7% correct answers on the post-test; however, it worsened for the children in the control group in comparison with the pre-test. Finally, the only component on which the children in the control group scored higher was that of emotion regulation (87% correct answers compared to 82% in the experimental group).

CEIC (Knowledge of Interaction Strategies with Peers)

Through this test, we rate the effectiveness of the program with regard to the promotion of social strategies that the children considered in the social situations presented on the test. It must be kept in mind that the children's scores depend on the elaboration of each of the strategies they mention. Table 5 shows the mean scores according to age and group.

Table 5. Mean Scores on the CEIC by Age and Group.

AGE	CONTROL		EXPERIMENTAL	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
4	2.94 (1.75)	3.17(1.62)	2.53 (1.07)	3.49(1.64)
5	2.83 (1.10)	3.39 (1.11)	2.73 (1.13)	5.91 (1.31)

To rate the differences between the control and experimental groups together with the two age groups, a repeated-measures ANOVA was performed that took into consideration the total mean scores, and an interaction was obtained between the two factors (age x group) $F(1) = 6.2, p < .05, \eta^2 = .1$). Likewise, differences were obtained between the two main factors of age ($F(1) = 11.65, p < .05, \eta^2 = .17$) and group (control vs. experimental: $F(1) = 16.94, p < .001, \eta^2 = .23$). Furthermore, a comparison within the total sample of the pre-test and post-test total scores showed significant differences between the total scores on the CEIC ($F(1) = 35.4, p < .001, \eta^2 = .4$).

The comparisons of the control and experimental groups, both for the four-year-old group and the five-year-old group, did not show significant differences on



the pre-test mean values ($F(1) = .77, p > .05$). However, there were differences between the experimental and control groups when comparing the post-test mean values ($F(1) = 5.6, p < .05$). The comparison of each condition yielded the difference between the pre- and post-test mean values, indicating that the four-year-old control group did not obtain significant differences ($t(8) = -.46, p > .05$), while in the experimental group, this comparison did produce significant differences ($t(19) = -2.2, p = .04$). For the five-year-old group, the differences between the pre- and post-test mean values were not significant for the control group ($t(17) = -1.7, p > .05$); however, for the experimental group, this comparison yielded significant differences ($t(10) = -10.5, p < .001$). In sum, both experimental groups improved on the elaboration and quantity of the social strategies that they offered as responses to the social situations presented to them.

Sociogram

As previously mentioned, the comparison of the pre-treatment score with the post-treatment score makes it possible to determine whether the social statuses of the children have changed. These comparisons yield a final index that classifies the children into three categories with respect to social status: improved, worsened or maintained. The results obtained from computing the changes before and after the intervention were grouped into these three categories for the control group (4- and 5-year-olds) and the experimental group (4- and 5-year-olds). Table 6 shows the distribution frequencies of the two groups in these three categories. The two age groups have been kept together to compute the χ^2 because otherwise there would be too many boxes with a frequency of less than 5, which would cast doubt on the results of the test. The differences between the scores obtained for the control and experimental groups showed that the distribution of frequencies among the categories was inverted between the two groups. Thus, higher improvement frequencies were found in the experimental group than in the control group, while the frequencies of the status worsening were greater in the control group than in the experimental one. These differences in the distribution are significant ($\chi^2(2) = 5.826, p < .05$).

Table 6. Distribution Frequencies of the Children's Scores in the Three Social Status Categories Obtained.

	CONDITIONS		TOTAL
	Control	Experimental	
Worsened	11	4	15
Maintained	10	15	25
Improved	7	13	20
	28	32	60

As shown in Table 6, 13 children from the experimental groups improved their social status (six 4-year-olds and seven 5-year-olds) compared with 7 children

in the control groups (two 4-year-olds and five 5-year-olds). Regarding the children who worsened their social status, we can see that 11 belonged to the control groups (four 4-year-olds and seven 5-year-olds), and 4 belonged to the experimental groups (three 4-year-olds and one 5-year-old).

Discussion

The results we present herein clearly show a significant improvement in the 5-year-old children who are part of the experimental group and a partial improvement in the 4-year-old children who are part of the experimental group. Thus, the 5-year-olds significantly improved in the area of emotion knowledge, they improved in the number of and their abilities to elaborate on social interaction strategies, and they improved their sociometric statuses. The 4-year-old children significantly improved their sociometric statuses and their abilities to elaborate on social interaction strategies.

The considerable improvement in the 5-year-old children seems to point in the direction of the initial hypothesis. Specifically, in this age group, it is worth noting that there was significant improvement on the most complex components evaluated by the TEC, and that these were explicitly addressed. Thus, for example, in the classroom where the children did false belief tasks where they had to trick an adult and then reflect on the representations that each had of the situation, they regarded how each person's belief explains their behavior and can predict their emotional state. Similarly, the children discussed the possibility of feeling conflicting emotions in the same situation and looked for examples and counter-examples. Finally, in one of the stories, a situation was presented in which a character faked an emotion and the children reflected on and performed various activities about this topic. The only element for which evaluation did not reflect the permanent work done in the classrooms was emotion regulation. The children discussed and sought solutions to control the emotions in many of the sessions. In fact, the teachers observed that throughout the course, the children spontaneously applied strategies that had been agreed on in the P4C sessions to the natural interaction situations that arose in school. However, the improvements in social competence observed through the sociogram could not be linked to emotion regulation measured by the TEC. Therefore, it is possible that the TEC items that evaluate knowledge of emotion regulation strategies do not manage to capture the complexity of the understanding and strategies developed by the children through the intervention. In fact, the scores earned on the pretest were quite high for what would be expected at these ages, both for the experimental group and for the control group, because only 20% of their answers were incorrect. The results of the 5-year-old children show very high levels of correct answers on components that they do not typically reach until the ages of 7, 9 or even 11, according to data obtained with British children by Pons *et al.* (2004). Our results may suggest that this knowledge can be acquired at an early age, and that it is possible to transfer this knowledge to children to improve their emotional and social competences.

For the 4-year-old group, the initial hypothesis may be partially confirmed. However, because the pattern of improvement in the 4-year-olds is somewhat curious, we will analyze it in some detail. As mentioned, these children did not



improve on the TEC or on the number of social interaction strategies, although they did improve on their sociometric status and their ability to elaborate social interaction strategies. This grouping of tests may actually reflect a more general differentiation in terms of knowledge acquisition. For example, the cognitive tests reflect verbal and explicit knowledge (the TEC and the number of social interaction strategies the child knows), while others are linked to performance and the degree to which the child can maintain an effective interaction in specific situations (the sociogram and the degree of elaboration of the social interaction strategies). In this sense, the meaning of the sociogram is clear, given that it reflects the peer's evaluation of the child's competence in everyday social interaction situations. It is, then, a measure of adjustment that evaluates the children's performance, not their explicit knowledge. However, the degree of elaboration of the social interaction strategies would fall somewhere in the middle. Although it is a verbal measure that demonstrates explicit knowledge, it reflects an aspect closely related to efficacy, which is the adjustment to the specific demand of each social interaction situation. Therefore, this measure evaluates the way the child understands a conflict or social interaction and the degree to which he/she can adjust his/her performance to achieve the best result possible (i.e., reach his/her goal or resolve the conflict). Thus, we posit that this measure evaluates explicit knowledge but is closely linked to performance. In fact, the younger children showed improvements linked to performance that could be situated at the level of implicit knowledge; however, they did not demonstrate significant improvement in verbal and explicit knowledge.

As some authors have noted, knowledge acquisition can be understood as a system composed of different hierarchical levels of learning that progress from implicit to explicit levels of knowledge (Cleeremans & Jiménez, 2002; Dienes & Perner, 1999, 2002; Karmiloff-Smith, 1992; Pozo, 2003). In contrast to what traditional associationist positions would maintain (according to which, both levels share mechanisms of learning, and the only thing that varies is the level of awareness the system applies when registering the variations produced in the environment that garner an adaptive response), these models assume that the step from implicit to explicit knowledge involves a certain reorganization of previous representations. This reorganization occurs when making knowledge explicit, and consists of connecting a representation with previous representations, thus giving it a new meaning. These types of re-descriptions of representations in other formats, according to Karmiloff-Smith, do not depend exclusively on the subject's internal cognitive instruments, but rather, they occur through the mediation of cultural systems. Thus, knowledge would follow a dual pathway of representational re-description. On the one hand, the implicit knowledge becomes explicit and, on the other hand, the cultural representations are interiorized, becoming internal representations (Pozo, 2003).

These models that assume the reorganization of knowledge and its progressive explicitness, with cultural mediation as a key element in the explanation of its acquisition, perfectly fit the process that is generally observed with P4C and the data presented herein. In our case, we could assume that through the dialogues they have, 5-year-old children re-describe certain implicit knowledge they already have about emotions and the most adaptive ways to interact. Moreover, through conversation, they interiorize especially significant cultural knowledge, given that it is based on their own experience and point of view and it is reformulated in the

dialogue with other children. Engaging in dialogue, listening and interchanging various points of view make up the cultural tool that mediates in this re-description and interiorization, favoring the explicitness of knowledge, that is, its connection with other representations and its reorganization. In the case of the 4-year-old children, we can assume that the children are slightly behind the 5-year-old children both verbally and cognitively. Through dialogue, and perhaps more through the activities they have performed, the children can interiorize certain knowledge at an implicit level that they can already use in their daily performance. Furthermore, they begin to show a certain level of explicitness in questions closely linked to performance. However, they still cannot re-describe more complex representations related to emotion knowledge, something they will be able to do a year later.

In summary, this exploratory study suggest that for the 5-year-old children, the intervention using P4C improves performance in specific social situations, and it improves the verbal and explicit knowledge that guides this performance, while the 4-year-olds seem to remain at their previous level. At this level, the 4-year-old children manage to improve their performance in specific social situations, but they do not have an explicit level of knowledge that can be demonstrated on a test. Thus, our results may indicate the need to adapt the intervention methodology used for the younger children. For the 4-year-old children to receive the greatest benefit from this type of intervention, the children should probably spend more time on activities directed toward performance rather than on dialogue, which should be introduced progressively over time. In this way, the children can take greater advantage of the dialogue a little later, once the cognitive instruments that allow for the explicit re-description of knowledge are ready.

Limitations

It is necessary to note some limitations of this study that constitute our future line of research. First, the data presented herein include a reduced sample of children. Also, it would be necessary to intervene with children from other socioeconomic backgrounds and ethnic groups to extend the generalization of the results. As previously mentioned, our main aim was to explore the potential benefits of the program and the results need cautious interpretation. In addition, we chose to test small groups of young children, as P4C has positive effects when practiced in groups of a limited number of young children. For these reasons, we could not use larger samples. However, we are aware of the limitations of the sample size when attempting to generalize our results. Our goal with this research was to introduce a novel educational tool. The initial results open a new door in the field of interventions on emotional understanding and social competence in young children. The sample size limitations leave some unclear results, so additional research will be required. For example, we cannot clearly explain why the 4-year-old children in the control group obtained higher scores on the TEC than those in the experimental group. A very likely explanation is that the number of subjects distorted the results. The number of children who make up a class is a defining aspect of the learning outcomes. Therefore, the fact that the 4-year-old control group consisted of only 9 children most likely influenced the development of emotional knowledge and mental skills. Another possible (and compatible) explanation is the greater number of girls in the 4-year-old class. This limitation prompts us to conduct broader interventions that include a greater number of children, thus making it possible to



corroborate the primary results presented herein. Furthermore, it would be necessary to include measures over time that would also allow us to determine the duration of the benefits of the intervention. Our current on-going research will permit us to delve deeper into these initial results and measure the program efficacy over time.

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