

## Mediated Reading with a Social Cognitive Approach: Assessment of a Research Intervention

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**Abstract:** This study's objective was to evaluate the effectiveness of a program designed to diversify teachers' storytelling practices and indirectly promote children's understanding of mental states and social information processing. Five teachers and 57 students, aged six years old on average, attending a public elementary school, participated in the study. Teachers were trained and pre- and post-tested through questionnaires addressing social-cognitive conceptions and the impact of qualification on their mediated reading practices. The social-cognitive aspects and the attribution of children's mental terms were evaluated during the reading of two books. A field diary was used to document weekly observations. The results revealed teaching improvement in selecting books and in exploring mental terms during narratives. In regard to the students, significant differences were found in the use of mental language and social information processing. The conclusion is that conducting mediated reading with a social-cognitive focus is feasible in schools.

**Keywords:** theory of mind, social cognition, teacher education, reading

## Leitura Mediada com Enfoque Sociocognitivo: Avaliação de uma Pesquisa-Intervenção

**Resumo:** Este estudo teve como objetivo avaliar a efetividade de um programa dirigido a diversificar a prática docente de contar histórias e a promoção indireta da compreensão infantil dos estados mentais e do processamento de informação social. Participaram 5 docentes e 57 alunos com média de 6 anos de idade de uma escola pública. As docentes foram capacitadas e pré e pós-avaliadas por questionários que investigaram concepções sociocognitivas e o impacto da capacitação sobre a prática de leitura mediada. Aspectos sociocognitivos e a atribuição dos termos mentais infantis foram avaliados mediante a análise da leitura de dois livros. Foi utilizado um diário de campo para documentar as observações semanais. Evidenciou-se aperfeiçoamento docente na seleção de livros e na exploração dos termos mentais nas narrativas e, quanto aos alunos, diferenças significativas quanto à linguagem mentalista e aprimoramento do processamento de informação social. Conclui-se pela viabilidade de se implementar a leitura mediada com enfoque sociocognitivo na escola.

**Palavras-chave:** teoria da mente, cognição social, formação de professores, leitura

## La Lectura Mediada con Enfoque Socio Cognitivo: Evaluación de una Investigación-Intervención

**Resumen:** El objetivo fue evaluar la efectividad del programa destinado a la diversificación de prácticas de enseñanza de narración y promoción indirecta de comprensión infantil de estados mentales y procesamiento de información social. Participaron cinco profesores y 57 estudiantes con edad promedio de 6 años en una escuela pública. Profesores fueron evaluados antes y después de la capacitación por cuestionarios que investigaron el impacto de la formación socio-cognitivo en la práctica de lectura mediada. Aspectos sociocognitivos y asignación de términos mentales de los niños fueron evaluados mediante análisis de la lectura de dos libros. Se utilizó un diario de campo para documentar observaciones semanales. Hubo evidencias de mejora de la enseñanza: selección de libros, explotación de relatos y condiciones mentales, para los alumnos, diferencias significativas en lenguaje mental y mejora del procesamiento de información social. Los resultados confirmaron la viabilidad de la aplicación del enfoque socio-cognitivo de lectura mediada en la escuela.

**Palabras clave:** teoría de la mente, cognición social, formación de profesores, lectura

Under the contemporary view of prevention science, proactive programs implemented in schools should focus on strategies that give priority to the increase of both individuals and contextual protection factors. Such programs

tend to produce beneficial effects such as minimizing emotional, social, and behavioral problems among children (Murta, 2007). Specifically, there is evidence for significant effects of interventions designed to promote the development of psychosocial skills (Cunha & Rodrigues, 2010). The promotion of social-cognitive development, that is, promoting children's ability to understand the social world, is one of the possibilities.

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Mind theory is relevant in this context. It is generally defined as the field that investigates the ability of children to explain and predict their actions and mental states and those of others, such as thoughts, desires, emotions and intentions (Lyra, Roazzi, & Garvey, 2008). Considerable progress, fostered by the interest of developmental psychologists and cognitivists in explaining when and how children acquire social-cognitive understanding, has been achieved in this field of knowledge. Nevertheless, studies addressing its concrete implications for children's routines still require special attention. In this context, as noted by Souza (2008), the relationship between language and mind theory, as well as aspects related to schooling, as discussed by Rodrigues and Pires (2010), seem to be promising. Astington and Baird (2005) and Astington and Pelletier (2000) argue that language is the element that supports the development of understanding mental states.

Various intervention studies (Domingues & Maluf, 2010) indicate that the development of mind theory can be eased among children through the appropriate use of language. Justifying the need to stimulate language from the time of childhood, Valério (2008) notes that part of the success in social relationships depends on one's ability to recognize, imagine and understand one's own mental states and those of others. According to Souza (2008), one should enlarge this perspective and consider how a child's initial social interactions can contribute or hinder the development of a mind theory. Daily language is important in this context because it tends to encourage the use of terms focused on mental states (Rodrigues & Pires, 2010). Studies show that the family and school can favor this language through a very accessible and potentially rich resource: children's storybooks (Adrian, Clemente, & Villanueva, 2007; Meins, Fernyhough, Johnson, & Lidstone, 2006.) Interactive situations established during the reading of children's storybooks are highlighted because they can encourage the child to identify and explore terms concerning the characters' mental states in two different styles of narratives: narratives through image (Sabbagh & Callanan, 1998) and textual narratives (Dyer, Shatz, & Wellman, 2000).

In regard to the school context and, more specifically, to the intentionality of pedagogical practice, it is necessary to first consider the importance of teachers' conceptions and practices (Sadalla, 1998; Zohar, Degani, & Vaakinin, 2001). Paiva and Del Prette (2009) argue that the teachers' systems of beliefs tend to influence their teaching-learning process to the extent it mediates pedagogical decisions and interactions established with the students. Based on the results Rodrigues and Tavares (2009) obtained, which indicate the teachers' beliefs did not favor children's social-cognitive abilities (e.g. understand their own interactions and emotions as well as those of others), in addition to intuitive and unsystematic conceptions concerning the "storytelling" activity, the authors note the importance of qualifying teachers. As

argued by Marchiori (2001), if, on the one hand, beliefs are fundamental and guide human behavior, on the other hand, the process of replacing old and deeply rooted beliefs with innovative conceptions is essential to changing educational practices in schools, even if these new beliefs are adopted gradually and reluctantly.

According to Fontes and Cardoso-Martins (2004) and Rodrigues (2008), storybooks need to be acknowledged and valued because they are valuable tools in child development and learning. In regard to the use of this activity and its implementation, which includes some methodological variations, we find a varied terminology in the literature: mediated reading, (Ferraz, 2008), shared reading (Garcez, 2000), dialogical reading (Whitehurst et al., 1988) and interactive reading (Fontes & Cardoso-Martins, 2004). The conception of Ferraz (2008) adopted in this study synthesizes the essence of its application in the context of classrooms, as it defines the practice of mediated reading as a process of joint educational construction, through which the teacher and students, relating prior knowledge, can share broader and more complex meanings of reality. We highlight the relevance of the child's active role in expanding her/his vocabulary as well as constructing relationships of meanings included in the narrative that this activity can enable (Whitehurst et al., 1988). Garcez (2000) notes that the educator, as a mediator, needs to consider the technical and cognitive resources involved in this type of reading. We note, however, that more robust empirical evidence showing the impact of programs involving interactive reading are more frequently reported in psychological literature than in other fields of knowledge (Rodrigues, 2008).

Fontes and Cardoso-Martins (2004), for instance, report the positive effect of an interactive reading program on the development of oral language among preschool children from a low socioeconomic level: they verified that the children from the experimental group exceeded all the measures of story comprehension and vocabulary in the post-intervention assessment. At the international level, and concerning the scope of this paper, Peskin and Astington (2004) evaluated whether exposing kindergarten children to metacognitive language would enable them to comprehend mental states. Parents, professors and researchers read 70 books to each participant during the course of four weeks. The results indicate that exposing children to this type of vocabulary leads to a more expressive production of metacognitive verbs.

Currently, there is consensus that the use of children's storybooks is a resource that facilitates the children's understanding of mental states, since they present, both in text and/or images, cues that refer to states of belief, desire, intention and emotion (Adrian et al., 2007; Dyer et al., 2000; Rodrigues, Oliveira, Rubac, & Tavares, 2007; Rodrigues & Tavares, 2009). Combining fundamentals of the model proposed by Crick and Dodge (1994) with dialogued exploration of

storybooks, Teglassi and Rothman (2001) implemented a 15-day program designed to improve children's social information processing.

The mediated reading of narratives was conducted considering these six questions: (1) What is happening? (2) What are the characters thinking and feeling? (3) What are the characters' intentions and goals? (4) What do the characters accomplish with their actions? (5) How do the characters perform and monitor their own behavior? and (6) What are the lessons learned? Groups of children aged from four to six years old participated. They were pre- and post-assessed by the teachers in terms of characteristics such as hostility and provocation. The results were positive, indicating less antisocial and externalizing behavior, especially among children identified as aggressive. Subsequent studies have reported the efficacy of this program (Rahill & Teglassi, 2003).

Encouraged by these results, Rodrigues and Tavares (2009), proposed a program to qualify teachers aiming to broaden their conceptions concerning children's social-cognitive development and improve mediated reading in the classroom. This study is an extension of this proposal and intended to evaluate the effectiveness of a program designed to diversify the teachers' storytelling practices and indirectly promote children's understanding of mental states and social information processing.

## Method

### Participants

The study was conducted in a public school in a city in the interior of Minas Gerais, Brazil: 57 students (30 boys and 27 girls), aged six years old on average, and in the 1<sup>st</sup> grade participated in the study, along with five teachers, aged 42 years old on average, with a bachelor's degree and five years of teaching experience.

### Instruments

The following resources were used to collect data and implement the program:

*Social-cognitive characterization of preschool children.* Questionnaire developed by Rodrigues (2004) and designed to identify the conceptions of educators concerning the characteristics of child social-cognitive development, including evolutionary aspects of mind theory and social information processing. It is composed of 27 items divided into nine themes: (1) general aspects of mind theory, (2) basic assumptions of mind theory, (3) false belief tasks and the distinction between appearance and reality, (4) the importance of make-believe playing, (5) development of emotions, (6) ability to empathize, (7) understanding intentions, (8) aspects concerning social information

processing, and (9) consequences of aggressive behavior. The instrument uses a Likert scale with the following alternatives: "yes", "no", "partially", and "I do not know". Most questions are preceded by examples of children's daily lives, simplified theoretical statements and questions designed to identify the perceptions of teachers concerning the preschool children's social-cognitive abilities and potential. The question 6 is provided below as an example:

Our mind is active and can modify, enrich or distort reality. What we experience in the past can affect how we live in the present. João becomes sad and frightened when he has to ride a bike with friends because he was once almost ran over by a car for not being able to brake in time. In your opinion, are João's preschool friends (5 and 6 years-old) already capable of understanding that this negative experience may have affected João's desire to ride bikes with them?

*Assessment questionnaire 1:* contains four open questions and was used to identify the perceptions of teachers concerning the effectiveness and appropriateness of the theoretical-practical content addressed during the qualification program.

*Assessment questionnaire 2:* is composed of seven semi-open questions and was used to identify the teachers' general perceptions, opinions, and suggestions for an adequate training program and how convergent it was in relation to the differentiated practice of implemented reading.

A total of 38 children storybooks, previously analyzed by Rodrigues et al. (2007), were used during the program. The narratives of these presented an expressive array of mental terms and relevant social cues. A field diary was used to record the meetings and observations of the teachers' work within the classroom. The diary was organized around three axes/categories: (a) aspects linked to the planning and mediation of reading in the classroom, (b) professor-student interactivity, and (c) teachers' perceptions concerning the involvement of children over the course of the work. The following books were also used: *A bruxinha e o Godofredo* (Furnari, 2007) (The Little Witch and Godfrey): narrative by image aimed at readers and pre-readers, used to evaluate child language concerning mental states; and *Lúcia já vou indo* (Penteado, 1998) (Lucy, I'll get going): textual narrative rich in social cues (Rodrigues & Oliveira, 2009). The goal of using this resource was to support assessment of child social information processing.

*Social-cognitive assessment of child responses after dialogued exploration of textual narrative* (Rodrigues & Stersa, 2009). This instrument was used to assess the social-cognitive repertoire of children after the dialogued reading of the book *Lucy, I'll get going*. The instrument contains a Likert scale with the ranges: (1) very good, (2) good, (3) regular, (4) poor, (5) very poor, (6) absent; there is also a blank space to make notations at the end of

the instrument. It involves nine social-cognitive aspects of child responses based on the sequence, already described, of six components proposed by Teglasi and Rothman (2001).

### Procedure

**Data collection.** *Teachers' group:* the social-cognitive characterization of preschool children was applied to the group. Afterwards, the teachers received training proposed in the study by Rodrigues and Tavares (2009), which includes magnetic media and storybooks, subdivided into four modules: (1) updating of information concerning children's social-cognitive abilities (4 hours duration), (2) fundamentals of mind theory and its relationship with language (4 hours), (3) basic notions of social information processing (4 hours), and (4) practical experiences with the mediated reading of storybooks with a social-cognitive focus (8 hours). Qualification provided by the researchers totaled 20 hours distributed over three months, with one weekly meeting. Assessment questionnaire 1 was applied during the last meeting. From April to November, the teachers implemented the mediated reading program among the students with weekly monitoring/guidance provided by the researchers. Two research assistants observed the work of teachers with children's storybooks in an unsystematic manner. Such procedures were designed to provide elements for discussion and to improve the proposal. We note that observation and records that resulted from these complementary activities converge on the more qualitative hybrid model of data collection (Alves-Mazzotti & Gewandszajder, 1998). Data were recorded through brief notes, testimonies and dialogues focused on the three aforementioned axes. At the end of the school year, Assessment questionnaire 2 was applied collectively.

In the *children's group*, after the school provided the list of students to characterize the participants and the parents signed free and informed consent forms, an initial contact was made in classroom. After good rapport was established, individual pre-assessments were implemented with the presence of two researchers. A children's book with images was presented to the child, who was asked to tell the story based on the sequence of illustrations; the narratives were recorded and transcribed. Aiming to identify the occurrence of words and expressions focused on mental states, the reports were coded and analyzed by a researcher and two research assistants, who discussed any disagreements considering the following taxonomy: cognitive, emotional, desire/intention and perceptive terms. The definition and characterization of these terms are provided in the study by Rodrigues, Ribeiro and Cunha (2009): (1) cognitive terms (expressions that refer to knowledge, memories, dreams, reality pretending); (2) emotional terms (express emotional behavior such as hugging, and current emotions or feelings such as love);

(3) desire/intention terms (words such as "desire", "want" and "would like to", indicating volition, motivation or request for/action toward an object); and (4) perceptive terms (refer to current perceptions based on the five senses: sight, hearing, taste, smell and touch).

After reading the first book, we proceeded to the reading of the textual narrative, exploring, in a dialogued manner, the six components proposed by Teglasi and Rothman (2001), as well as the cues provided by the books' illustrations, such as: the characters' expressions of fear, sorrow ("Why is Lucy crying so badly, what happened to her?"; "Why did the dragonfly take pity on Lucy?"). We note that mediation also involved the exploration of convergence between the figure and the characters' mental states. This reading enabled the two research assistants (one intervenient and one observer) to fill in the Social-cognitive assessment of child responses after dialogued exploration of textual narrative instrument, discussing disagreements. After the children were pre-assessed, the researchers implemented the program in the classroom with a weekly mediation of two storybooks. At the end of the school year, each child was individually assessed through a second reading of the two mentioned books.

**Data analysis.** The assessment questionnaires (1 and 2) applied to the teachers were content-analyzed (Bardin, 2008). The analysis of the social-cognitive characterization of preschool children was descriptive; the frequencies of the teachers' responses were recorded and their respective percentages were computed. Complementarily, a qualitative analysis of observations and weekly monitoring of the teachers' work was performed according to the three axes considered in the field diary. To investigate the effects of the intervention on the children, the data were compared between the pre- and post-assessments through Wilcoxon's non-parametric test for dependent samples, considering: (1) frequency of linguistic attribution to each category of mental term computed separately, in relation to the reading of books and the raw score concerning all the terms evoked in the four categories, and (2) the raw scores, obtained through the sum of results of each item of the assessment scale, for the nine skills that compose the Social-cognitive assessment of child responses after dialogued exploration of textual narrative instrument. The level of significance was fixed at 5%.

### Ethical considerations

This study was approved by the Institutional Review Board at the Universidade Federal de Juiz de Fora, Minas Gerais, Brazil (Process 057/2008).

## Results and Discussion

### Teachers' Group

The opinions of teachers provided in response to the social-cognitive characterization of preschool children

questionnaire were analyzed and described according to themes. In regard to the conceptions concerning general aspects of mind theory (e.g. knowledge that psychological states are internal and can influence behavior), the responses predominantly ranged between “yes” (53%) and “partially” (40%). This result suggests that the teachers understand that children of this age recognize the existence of non-observable mental content. This is in agreement with the literature in the field that indicates that three-year old children already acknowledge the mind’s cognitive connections (Flavell, Miller, & Miller, 1999).

In regard to the development of mind theory, most teachers (53%) reported that children this age have partially acquired this ability at this age and 33% reported that children have already acquired this ability at this age. Based on the evolutionary sequence delineated by the previously mentioned authors, this information may indicate limited knowledge on the part of teachers concerning the existence of mental states of children. A total of 47% of the teachers reported that children this age already have the ability to understand that people may have beliefs that contradict reality (false beliefs) and are capable of making a distinction between appearance and reality; 26% believe this ability is partial at this age, while another 26% believe that children this age do not have such an ability. Nonetheless, most (80%) agreed that children are able to assess that people may have a belief that diverges from reality (false belief).

In regard to the children’s ability to understand their own emotions and those of others, the opinions mainly oscillated between “yes” (47%) and “partially” (47%), which is somewhat in agreement with the studies by Bretherton and Breeghly (1982) and de Pons, Harris and de Rosnay (2004), who report that two-year old children are capable of using emotional terms to refer to themselves and others. The perceptions of development and understanding of children’s intentions oscillated between “partially” (53%) and “yes” (40%), showing a still limited view concerning the ability of six-year old children to understand their own intentions and those of others. Feinfield, Lee, Flavell, Green and Flavell (1999) report that this ability emerges around the age of three to four years old and is already consolidated at the age of five.

All the participants agreed that children have a cognitive scheme that enables them to think before acting and act according to an assessment of potential consequences in a social plan. On the other hand, most (60%) held that children with aggressive behavior have difficulties considering the consequences of their actions for themselves and others. This is fully in agreement with studies in the field of social information processing (Crick & Dodge, 1994; Vasconcellos, Picon, Prochnow, & Gauer, 2006), which support this characterization.

From the content analysis of the answers provided to the Assessment questionnaire 1, emerged four global

categories, all indicating affirmative answers to the questions and favorable opinions about the qualification program: (1) *qualification was successful*, (2) *positive evaluation*, (3) *favorable evaluation*, (4) *the training’s workload should be expanded*. These categories can be exemplified in the testimony of three teachers:

*The comic book made the work more interesting. The training program enabled us to reflect upon and learn different ways to work with our children... It provided increased knowledge of the children and about the differentiated reading of storybooks... (Participant 2)*

*The training program was very useful. I came to understand that the use of more sophisticated mental terms, linked to cognition, emotion, and intention, can help children to develop their ability to understand others... I understood the complex questions that permeate the child’s inner universe and started reflecting upon them and directing my attitudes to such questions and to the potential of narratives. (Participant 4)*

*We broadened our vocabulary of mental terms and our perceptions concerning the possibilities of using them with children on a daily basis in classroom. As a suggestion, I believe that the workload could be expanded with more storybooks and more time for discussion. It was really good! (Participant 3)*

In summary, the assessments performed by the group of teachers were very positive. There was consensus that the qualification program enabled them not only to broaden their view concerning child social-cognitive development, but also to acquire a differentiated perspective of children’s storybooks in the classroom.

The qualitative analysis of the records that comprised weekly monitoring during the school year and focused on the three aforementioned axes indicates positive indicators in relation to four aspects. In regard to the meetings we observed: (a) expressive improvement of the teachers’ practice concerning the selection and social-cognitive criteria in the choice of children’s storybooks and (b) learning concerning the identification and development of social-cognitive exploration of situations in the narratives that offer social cues and the identification of terms concerning mental states. Observation in the classroom indicated: (a) growing improvement of the exploration of narratives, including both children’s self-discovery and a more active instruction (tutorship) on the part of the teachers, as discussed by Spínillo and Lautert (2008) and, (b) improved management of

interaction between the children and the group of teachers, who mediated interpersonal conflicts that emerged during the activity in the school routine, in a more pro-active and reflexive manner.

Some testimonies recorded during the monitoring exemplify this development: “...now I realize that choosing a good storybook is important for children... I realized that each book has different characteristics and needs to be explored differently” (Participant 1); “I’ve learned to explore more diversified words, then children ask what these words mean and participate more.”(Participant 3); “I’ve learned that the characters’ facial expressions are important and help the children understand feelings, intentions... When you tell stories this way, the child internalizes the terms and words used” (Participant 4); “I hadn’t thought about this way of helping children learn and use new words for emotions... It is gratifying seeing a student using the word that we worked on in the story-reading time” (Participant 5).

The qualitative data presented here are reinforced by content analysis of the opinions provided in Assessment questionnaire 2, applied at the end of the intervention. Such analysis enabled us to delimitate six global categories: (1) *Convergence between qualification and teachers’ practice*, (2) *Indicate suggestions*, (3) *Positive perceptions of the relevance of the proposal*, (4) *Do not report difficulties to develop the mediated reading*, (5) *The weekly monitoring contributed to a reflective practice*, and (6) *Practical suggestions*.

All the responses and suggestions provided indicate the differentiated proposal of mediated reading was valued, as the following excerpt reveal: “...in my case, the project enriched to an even greater extent my way of working with books. The meetings helped me to see elements I needed to improve or change...” (Participant 1). Some other testimonies that confirm this fact are reproduced below:

*What changed was my emphasis on literature... I didn’t find any difficulty; quite the contrary, it is a very rich way that encourages the participation of students.... The collective work of teachers and educators is essential to reviewing, making adequate, and confirming successful actions; the project could include the families.* (Participant 2)

*We’ve learned a new way to tell stories and learning was gradual and meaningful... I don’t think we had any difficulties; social understanding was easily accomplished through this work... I suggest the inclusion of books in the school’s planning and projects.* (Participant 3)

As previously discussed, the results were clearly favorable to the project’s initial proposal and permit us to infer,

based on the perception of this group of teachers, that it is feasible and desirable to incorporate this type of differentiated interactive reading into the teachers’ practice.

### Children’s Group

In regard to the attribution of mental terms on the part of the children during the book reading, as shown in Table 1, the totality of mental terms evoked in the post-assessment was significantly greater than in the pre-assessment ( $p < 0.001$ ). Obtained data tend to reinforce other studies in the field since, during the children’s storybook time, an expressive amount and diversity of mental terms was provided (Adrian et al., 2007; Valério, 2008).

Table 1  
*Frequency of Attribution of Terms Concerning Mental States*

Categories of mental terms	Pre-assessment (n = 57)		Post-assessment (n = 57)	
	F	%	F	%
Desire/intention	942	35.9	1126	35.8
Cognitive	830	31.6	1051	33.5
Emotional	612	23.3	733	23.4
Perceptive	241	9.2	231	7.3
Total	2625	100	3141	100

As shown in Table 1, in the pre- and post-assessments, the category of terms most frequently mentioned was desire/intention, followed by the categories of cognitive, emotional, and perceptive terms. A significant difference was found between the pre- and post-assessments in the four categories of mental terms: the attribution of desire/intention and cognitive and emotional terms increased, while the attribution of perceptive terms diminished. Since the program focused on the exploration of more differentiated mental terms, providing alternative expressions such as “content”, “happy”, “overjoyed” and “cheerful”, we expected that the frequency of perceptive terms would diminish, since these are considered simpler terms that reflect more observable behavioral actions, such as “gaze” and “take”. This suggests the program had a positive effect and reinforces the statements of Rodrigues and Pires (2010) and Valério (2008), who note that children tend to improve their knowledge and understanding concerning mental states through language.

The post-assessment showed that the children significantly broadened the attribution of terms focused on desire/intention. This result differs from those reported by Pires (2010) and Rodrigues et al. (2009), in which desire/intention terms were less frequently evoked during the reading of image books. In regard to cognitive terms, we also observed an equally significant expansion ( $p <$

0.001): 29 different terms were provided in the pre-assessment and 31 were provided in the post-assessment. This result converges, to a degree, with the study conducted by Peskin and Astington (2004), which showed that the metacognitive language of children showed improvement after an intervention program involving book reading by parents and teachers.

The difference in emotional terms was also significant ( $p < 0.001$ ), with an initial attribution of 50 different words of emotional terms and 61 different terms after the program. The emotional terms identified as positive in the first stage presented 236 occurrences (39%), while there were a total of 257 (35%) occurrences in the second stage. There were a total of 370 occurrences (60%) of negative emotional terms in the first stage and 462 (63%) in the second stage. The emotional terms considered neutral, such as “to feel” and “touched”, were less frequent. The perceptive terms were less frequently evoked in the post-evaluation. This was expected, since the structure of the intervention plan primarily focused on broadening mental terms that refer to subjective states at the expense of those focused on the characters’ observable behavior and actions.

Additionally, as explained earlier, we assessed the children’s social information processing through a social-cognitive instrument. The comparative analysis of data (pre- and post-assessments) performed through the Wilcoxon test revealed a significant difference for each of the nine aspects assessed ( $p < 0.001$ ), indicating that social-cognitive skills improved between the pre- and post-assessments. A similar result was obtained from the instrument’s total score.

In regard to the acknowledgment of external cues (the first item of the instrument focused on the assessment component “What is happening?”), the repertoire of the children’s social-cognitive answers concerning the narrative was “very good” (49%), “good” (35%) and “regular” (14%) in the pre-assessment, and 60%, 28% and 12%, respectively, in the post-assessment. In the preliminary stage, the assessment of the children’s answers concerning the acknowledgment of internal cues (“What are the characters thinking and feeling?”) ranged over “good” (35%), “very good” (30%) and “regular” (24%), while this acknowledgement was considered “very good” (54%) and “good” (33%) in the second stage. We verified that, in addition to the children being able to provide more relevant and detailed information concerning the story’s context, they also observed and paid greater attention to the characters’ inner states, corroborating data obtained by Teglasi and Rothman (2001).

After the intervention, we also observed improvement concerning the acknowledgement and understanding of the characters’ feelings, since the performance of 80% of the children was considered “very good” and the acknowledgment and understanding of the characters’ thoughts were considered “very good” for 65% and “good”

for 19%. These results reinforce the opinion of Rahill and Teglasi (2003) in regard to the need to explore, from the social-cognitive point of view, convergences between illustrations and the mental terms present in the narratives. The assessment of the fifth item (acknowledgment and understanding of the characters’ intentions/goals) indicated that 40% of the answers were “good”, 28% were “very good” and 21% were “regular” in the pre-assessment and improved in the post-assessment: “very good” for 72% of the children and “good” for 23%. The same occurred in relation to the sixth aspect (identification and understanding of the consequences of the characters’ actions and plans), which in the first stage was “good” for 38% of the children, “very good” for 26% and “regular” for 28%, improving to “very good” for 68% and “good” for 23% in the second stage.

Faria (2008) and Teglasi and Rothman (2001) considered encouraging teachers to ask about the characters’ goals and plans to be important to the development of children’s social understanding, creating possible alternatives for their choices. Such opinions are in agreement with the child improvement obtained in aspects involving the performance and monitoring of the characters’ behaviors, which in the preliminary assessment was “good” (49%) and “very good” (37%); and was “very good” (86%) and “good” (14%) in the post-assessment. This prospective direction of results was also verified when the children’s performances were compared in relation to the perception and understanding of lessons learned by the characters and the ability to elaborate alternatives for the problems experienced by the characters and how to transpose them to real life (eighth and ninth items).

Rahill and Teglasi (2003) showed that mediated exploration of children’s reading enables a more accurate and less impulsive assessment of solutions for the problems and dilemmas experienced by the characters, helping children to indirectly improve their social performance. This study’s quantitative data and support provided by qualitative data (note that the teachers reported fewer conflicts among children) suggest, with due caution, that the work performed by the teachers possibly had an indirect positive effect on the children’s social development as shown by Rahill and Teglasi (2003) and as advocated by current and recent literature involving interfaces among theory and mind, language and social development (Souza, 2008).

## Final Considerations

The results suggest that the intervention was effective in relation to the diversification of the teachers’ practices involving children’s storybooks and indirectly favored language concerning mental states and improved the children’s social information processing. The assessment provided by the teachers and the monitoring of their work

show that the teachers acquired a new perspective, not only concerning the development of students in relation to their social-cognitive characteristics and potential, but also in relation to mediated reading. The implementation of this type of interactive reading in the routine practice of teachers provides new directions for research, both in the field of social development prevention and in school performance, to the extent it can indirectly contribute to other aspects related to schooling, such as reading comprehension.

We note the following limitations for the study: the absence of a measure of language able to control the possibility of children acquiring a broader linguistic gain in this period of child development, the lack of a comparison group, and the unsystematic observation of the teachers' work. In this context, we highlight the study's interventional nature, developed throughout the school year within a classroom with the effective participation of teachers and the use of a tool, seldom explored in pedagogical practice.

This scenario translates, by itself, into important challenges and methodological aspects that need to be taken into account in future research. We also note the importance of implementing other intervention programs with such a focus in other educational contexts, given its pro-active nature. Additionally, further studies addressing the potential indirect relationships between language promotion, concerning mental states, and the benefit of other aspects of child development, such as social development, are desirable.

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