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Modifiability in Emotional Understanding Among Children With Learning Disabilities

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Children with specific learning disabilities (SLD) exhibit specific difficulties in high-order components of emotional understanding that involve language (e.g., recognition of complex emotions from situations), or defining emotions and providing examples. The objectives of the current study were to study (a) modifiability of emotional understanding using a short-term mediation program aimed at enhancing emotional understanding among children with SLD as compared with typically developing (TD) children, (b) the correlation of language ability with emotional understanding. A sample of 64 boys with SLD and 33 TD boys (9–11 years old) were administered emotional understanding measures, and tests of language processing. The children were given the *Language of Emotions Mediation Program* and retested on the emotional understanding measures. Children with SLD revealed initial lower level of emotional understanding than TD children but higher pre- to postmediation improvement. The correlation between emotional understanding measures and verbal ability decreased from pre- to postmediation only in children with SLD. These findings indicate less cohesiveness between the two domains because of the mediation program.

Keywords: emotional understanding; learning disability; dynamic assessment; verbal ability; emotional modifiability; mediation

Research on emotional understanding of children with specific learning disabilities (SLD) shows that they evidence difficulties in emotional understanding (e.g., Bauminger, Schorr-Edelsztein, & Morash, 2005; Bloom & Heath, 2010; Dimistrovsky, Spector, Levi-Shiff, & Vakil, 1998; Fujiki, Spackman, Brinton, & Illig et al., 2007; Tur–Kaspa, 2002). Emotional understanding is particularly challenging for children with SLD, especially when tasks involve recognition and definition of complex emotions and higher emotional understanding capabilities. Research evidence indicated existence of difficulties in understanding

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and interpretation of social and emotional situations such as the understanding of complex emotions (e.g., pride, guilt) or mixed or hidden emotions, which play an essential role in efficient peer interaction from middle childhood (e.g., Bauminger et al., 2005; Bloom & Heath, 2010, Bryan, 1977; Dimitrovsky, Spector, Levi-Shiff, & Vakil, 1998). An accurate evaluation of emotional understanding, and especially in modifiability of emotional understanding, would enable development of effective intervention processes and consequently an improvement in social functioning. Earlier studies have already demonstrated the importance of programs for improvement of emotional understanding on children's social competence (Greenberg & Kusche, 1993; Greenberg, Kusche, Cook, & Kuamma, 1995; Riggs, Greenberg, Kusche, & Pentz, 2006).

Emotional understanding may be defined as the way in which human individuals understand the emotional experience, the knowledge they have on emotions, and the way they interpret emotional expressions and emotional situations (Denham, 2007; Harris, 1993). Emotional understanding is composed of varied abilities; some are primary such as the ability to identify and label basic emotions (i.e., anger, happiness) and some are complex (i.e., pride, envy). These abilities enable efficient communication, empathy with others, and adequate social interactions (Denham, 2007; Denham, Mckinley, Couchoud, & Holt, 1990; Ensor, Spencer, & Hughes, 2011; Garner, Jones, & Miner, 1994; Halberstadt, Denham, & Dunsmore, 2001).

The understanding of complex emotions requires the consideration of an audience (e.g., in embarrassment and loneliness), the understanding of social norms (e.g., for pride and guilt), and the development of personal responsibility for the results of one's behavior. Thus, an understanding of complex emotion requires understanding of the social context in which the expression is manifested (e.g., Lewis, 1993). The ability to take another person's perspective of oneself and one's behaviors, thoughts, and feelings is also essential to the understanding of complex emotions (Harris, 1993).

In some research, emotional understanding has been related to language abilities (Cutting & Dunn, 1999; De Stasio, Fiorilli, & Di Chiacchio, 2014; de Rosnay & Harris, 2002; de Rosnay, Pons, Harris, & Morrell, 2004; Dunn, Brown, & Beardsall, 1991; Ensor et al., 2011; Farina, Albanese, & Pons, 2007; Izard et al., 2001; Schultz, Izard, Ackerman, & Youngstrom, 2001). Since children with SLD are characterized, among other things, by language difficulties we examined in our study language aspects that are expected to affect emotional understanding among these children.

Emotional understanding capabilities have been evaluated so far using a static approach—referring to children's current state of emotional understanding rather than to its modifiability. In the current study, we employed a unique novel dynamic assessment (DA) approach of emotional understanding based on the *theories of structural cognitive modifiability* (SCM) and *mediated learning experience (MLE*; Feuerstein et al., 2002).

Cognitive modifiability is defined as the individual's propensity to learn from new experiences and learning opportunities and to change one's own cognitive structures. Cognitive modifiability is caused directly by MLE interactions described as a special quality of interaction between a mediator and a learner (Feuerstein et al., 2002; Tzuriel, 2001, 2013). In this qualitative interactional process, parents or teachers interpose themselves between a set of stimuli and the developing learner and modify the stimuli for him or her. This theory is in some aspects like Vygotsky's (1978) concepts of the *zone of proximal development* and *internalization* and the concept of *scaffolding* (Wood, Bruner, & Ross, 1976), which have captured the interest of many

developmental psychologists and educators (e.g., Palincsar, 1998; Rogoff, 1990; Stone, 1998; Valsiner, 1987; Wertsch, 1985). The MLE processes are gradually internalized by the child and become an integrated mechanism of change within the child. The internalized MLE processes allow developing children later to use them independently, to benefit from learning experiences in diverse contexts, and to modify their cognitive system by means of self-mediation. The more the child experiences MLE interactions, the more he or she can learn from direct exposure to formal and informal learning situations, regardless of the richness of stimuli they provide.

An integrative component of the MLE approach is related to the conceptualization of the developing individual as an open system that is modified by mediating agents. This component has led to both the theoretical elaboration of DA of learning potential (Feuerstein et al., 2002; Lidz, 1991; Tzuriel, 2001) and the measurement of cognitive modifiability (Haywood & Tzuriel, 1992; Lidz & Elliott, 2000; Sternberg & Grigorenko, 2002; Tzuriel, 1997, 2001, 2012). The term "DA" refers to an assessment of thinking, perception, learning, and problem solving by an active teaching process aimed at modifying cognitive functioning (Tzuriel, 2001).

The DA procedure may be administered in either a clinical or research format (Tzuriel, 2001, 2013). In its research format, it includes a preteaching, teaching, and postteaching phases which sometimes is called the "sandwich-like" format (Wiedl, 2003). In this format children are given a preteaching test followed by a short teaching phase and a parallel postteaching test. The amount of improvement from pre- to postteaching score is taken as indication of cognitive modifiability. Unlike cognitive focused research in the current study we focus on modifiability of understanding of emotions among children with SLD as compared with typically developing (TD) children and its relation to linguistic ability.

The teaching phase in the current study is composed of a set of lessons regarding identification and definition of situations involving emotions. Our main assumption is that modifiability in emotional understanding during the DA procedure reflects the ability of the individual to change in the future after receiving a relatively long-term intervention.

In the current study, we had three main goals. The first was to examine group differences between children with SLD and TD children regarding their pretest levels of emotional understanding. The second goal was to examine the effects of the mediation procedure on children's modifiability of emotional understanding. The third goal was to examine the contribution of language, on emotional understanding before and after the mediation procedure. This goal is based on previous research showing that emotional understanding is related to developed language skills (Cutting & Dunn, 1999; de Rosnay & Harris, 2002; De Stasio et al., 2014; Izard et al., 2001).

METHOD

Sample

The sample was composed of 64 children with SLD and 33 TD children; all were boys aged 9–11 years (M = 120.96 months, SD = 7.40) attending Grades 4–5. The participants came from 20 classes from central and south regions in Israel. The age of the children in the SLD and TD groups was 121.21 months (SD = 7.65) and 120.47 months (SD = 7.10), respectively, t (95) = 2.41, *ns*. All children with SLD were selected based on four criteria: (a) Formal diagnosis, prior to their selection, by certified psychologists. All children were previously diagnosed based on different psychological and/or psych-didactic tests; all had normative intact intelligence and none were diagnosed with attention and/or concentration disorders. Unfortunately, there was not

common a cognitive ability test by which the children with SLD were diagnosed. (b) All children with SLD were assigned after diagnosis to regular classes in which they received an inclusive program. The children in the TD group came from the same schools of the children in the SLD group. All children in the TD group were selected by criteria of average achievements and without specific learning or behavioral problems. Since our main concern was the modifiability of emotional understanding of children with SLD we concentrated on a larger sample of this group. A smaller comparison group of TD children was selected only because of technical reasons.

Measures

Three measures tapping children's emotional understanding and a measure of language processing were employed in the current study. The emotional understanding measures were administered before and after *implementing the Language of Emotions Mediation Procedure* (LEMP; see below).

Identification of Complex Emotions in Social Situations From Stories (ICE-Stories). This measure was developed to assess the ability of TD preschool children to identify emotions from situations presented in stories (Cermele, Ackerman, & Izard, 1995). The original measure included 18 different short stories that describe 6 different emotions: sadness, happiness, anger, fear, shame, and interest. The original stories were adapted by Bauminger et al. (2005) to Israeli school-age TD children and children with SLD; this adaptation was used in this study. The Israeli version is composed of 12 stories; 2 depicting one basic emotion (i.e., happiness) and 10 depicting 5 complex emotions (i.e., embarrassment, guilt, loneliness, pride, and disappointment). Six stories were presented before the LEMP and six parallel stories after the procedure. Three expert psychologists have reached agreement regarding assignment of parallel stories in pre- and postmediation phases.

An example of a story used for embarrassment is: "The teacher asked her class a question. All the children raised their hands to answer, but only Danny did not know the answer. All the children stared at Danny." As in the original version, after reading the story to the child, the examiner asks the child to respond to the question, "How does the boy in the story feel?" by selecting the accurate emotion from a written list of the six target emotions. Emotional identification is coded on a 3-point scale: 0 = incorrect identification of the emotion (e.g., naming happiness instead of embarrassment); 1 = partial identification of the emotion (e.g., wrong emotion but with the same hedonic tones such as substituting happiness for pride); 2 = accurate identification. For each participant, an average score was computed based on the 6 tasks given before and after the intervention; the range of scores was 0–2.

Identification of Complex Emotions in Social Situations From Pictures. This measure was developed to assess children's ability to identify emotions from their social context (Feshbach, 1993). In Feshbach's original task the child is exposed to 10 different pictures depicting social scenarios of 6 different emotions. Four were basic emotions (happiness, fear, anger, and sadness) and two were complex emotions (loneliness and pride). For example, a boy holding a report card with all scores marked "excellent" represented pride, and a child almost being hit by a car represented fear. Each picture presented one boy or girl without facial expression; therefore, the picture's social context provided the clues for children's identification of the appropriate emotion. After showing each picture, the examiner asked, "How does the boy in the picture feel?"

Bauminger et al. (2005) modified Feshbach's (1993) measurement scale to include a broader repertoire of complex emotions. The modified scale included 12 pictures describing 8 different emotions: one picture for each of the same 4 basic emotions used in the original measure, and 2 pictures for each of the following 4 complex emotions (2 × 4 = 8): loneliness, pride, embarrassment, and guilt. In the current study 4 pictures of complex emotions were presented before the LEMP and 4 parallel pictures of complex emotions after the intervention. Three expert psychologists have reached agreement regarding assignment of parallel pictures of complex emotions in pre- and postmediation phases.

For example, to tap the complex emotion of embarrassment, children are shown a picture depicting a boy losing a race while his friends are laughing at him. Children's answers were coded according to (a) accuracy of identification of the emotion and (b) relevance of the explanation; similar to the coding for identification of emotions from stories. In the current study, we used only the scores of accuracy of identification due to the fact that a ceiling effect was found for relevance of explanation. For each participant, an average score was computed based on the 4 tasks given before and after the intervention; the range of scores was 0–2.

Kusche Affective Interview (KAI-R). The KAI-R was developed by Kusche, Greenberg, and Beilke (1988) to assess children's *emotional knowledge* at both an experiential and a metacognitive level with regard to the following six emotions: happiness, loneliness, embarrassment, pride, disappointment, and guilt. From the five original dimensions of the KAI-R, in the current study, we used only two dimensions of emotional knowledge: *Emotional Vocabulary* and *Experience of Emotions*. For *Emotional Vocabulary* children are asked to provide definitions of the six emotions. Definitions are scored as follows: 2 = correct abstract answer, 1 = correct concrete answer, and 0 = incorrect. For *Experience of Emotions* we asked children to tell about a time they felt each of the six emotions. Children's responses were coded as correct (score = 1) or incorrect (score = 0). The coding procedures are based on Greenberg et al. (1995) scoring method. For each participant, an average score was computed for *Emotional Vocabulary* (range of scores = 0–2) and for *Experience of Emotions* (range of scores = 0–1).

Spoken Language Test (MAASE). The verbal ability of children was examined by the *Spoken Language Test* developed (in Hebrew) to assess semantic language abilities of children aged 5–11 years. In the current study, the children were administered the new version of the test (Rom, Morag, & Peleg, 2007), which is suited to the children's gradual increase of semantic abilities in those ages.

The test includes two pretests: naming and verbs. In naming, the child is requested to provide names for specific objects and in verbs, the child is requested to provide the verb related to objects. Additional five subtests are categories, resemblance, difference, ambiguity, and definitions. In categories, children are presented verbally with 10 categories (e.g., holidays, jewelry) of which the children are asked to name three different objects belonging to each. In resemblance, children are verbally presented with 10 object pairs (e.g., car and bus, cat and dog) and are asked to name a similarity between the objects in each pair. In difference, children are introduced to the same 10 object pairs and are asked to name a difference between the objects in each pair. In ambiguity, children are introduced to 10 homonyms (ambiguous words that are written and pronounced in the same way) and are asked to name the meaning of each word in a specific context. In definitions, children are verbally presented with 5 objects and are asked to provide specific descriptions related to different features (e.g., size, shape, or color) for each object. In each subtest, a correct full answer is given a score of 2, a partial answer a score of 1, and an incorrect answer or no answers at all a score of 0. Scores for each of the subtests thus range from 0 to

20, with higher scores reflecting a higher linguistic level. Pearson correlation between the *Spoken Language Test* subtests and children's Auditory Association Illinois Test of Psycholinguistic Abilities (ITPA) subtest were .65 and above (Fisher, 1975).

The LEMP

The LEMP, an innovative mediation procedure developed especially for this study, was used as a teaching phase within a DA of emotional understanding. The LEMP is aimed at providing children with knowledge and concepts concerning emotions and thinking strategies that help identify emotions from social situations. The LEMP materials include a workbook with stories, pictures, insights, and rules about the emotional domain. The LEMP includes five sections: (a) In the first section, children are taught what emotions are, why it is important to identify emotions and label them, and how to identify cues for emotions. (b) In the second section, children are taught to identify and define specific basic emotions (e.g., happiness, sadness, and anger) and specific complex emotions (e.g., pride, loneliness, embarrassment, guilt, and disappointment). Different pictures and stories were created for that purpose. An example of a picture depicting pride is presented in Figure 1. (c) The third section includes teaching of mixed emotions. Children are taught that very often social situations stimulate several emotions that might be contradictory. (d) The fourth section includes teaching insights about hidden emotions. Children are asked to identify situations where people prefer to hide emotions and the reasons for that (e.g., not to insult others, defend themselves, and keep privacy). It was emphasized that sometimes it is better to share emotions rather than hiding them. (e) In the fifth section, children are taught how to cope with unpleasant emotions such as fear, disappointment, and stress. Children are taught three ways (or strategies) for coping with unpleasant emotions: activity (e.g., drink water, count to 10), self-talk, and use of imagination. The LEMP is administered individually by a trained teacher in three sessions, each lasting 1 hour. During the sessions, the teacher and the child look together at pictures, read stories, and write answers in a booklet. Teaching is conducted in a dialogical way, in which the teacher makes sure that the student is focused, understands, and responds correctly to the mediation. The teacher asks questions such as "how does the child feel in the story/pictures?" or "when do people feel like that?" The teacher responds to the student's answer by developing the idea until reaching the exact answer. If the child does not recognize the emotion that emerges from the story or picture, the teacher specifies the emotion, labeling it, and explaining in what situations it might be felt. The child is asked then to define the emotion, and compare it to a definition they read together.

Process

The understanding of emotions measures were administered before and after an intervention aimed at developing an understanding of emotions. The intervention, based on *MLE* theory (Feuerstein, Rand, & Hoffman, 1979), was composed of three individual sessions aimed at teaching concepts of emotions and strategies to identify emotions from social situations. A language processing test (MAASE), was also administered before the intervention to study the contribution of language to the understanding of emotions.

FIGURE 1. Example picture from the identification of complex emotions in social situations from pictures.

RESULTS

Identification of Emotions in SLD and TD Groups Before and After the LEMP

The means and standard deviations (*SD*) of identification of emotions are presented in Table 1. To examine group differences as well as the improvements from pre- to postmediation we carried out repeated measures MANOVA (multivariate analysis of variance) of Group by Time (2 × 2) where the dependent variables were identification of emotions from stories and from pictures. The analysis showed general significant main effects for Group, $F_{(2,92)} = 15.38$, $p < .001$, $\eta^2 = .25$, and Time, $F_{(2,92)} = 53.08$, $p < .001$, $\eta^2 = .53$. These findings indicate clearly that the SLD group scored lower than the TD group and that there was a significant improvement from pre- to postmediation. The main effects were modified by a significant interaction of Group by Time, $F_{(2,92)} = 10.49$, $p < .001$, $\eta^2 = .18$, indicating higher pre- to postmediation improvement in the SLD than in the TD group. To examine the specific contribution of each measure to the overall effect we carried out separate repeated measures ANOVA of Group × Time (2 × 2) for each of the dependent variables (see Table 1). The analyses revealed significant main effects as well as significant interactions for both dependent variables (see Figure 2). As can be seen in Figure 2 the SLD group showed higher pre- to postmediation improvement than the TD group. Bonferroni post hoc analysis showed that before intervention the TD group was significantly higher than the SLD group on both measures ($p < .05$). After the intervention, the TD group was significantly higher than the SLD group on identification of emotions from stories ($p < .05$) but

TABLE 1. Means, Standard Deviations, and *F* Statistics of Identification of Complex Emotions in Situations Presented in Stories and Pictures

Emotional Recognition	Phase		SLD (n = 62)	TD (n = 33)	Time (A)	η^2	Group (B)	η^2	A × B	η^2
Stories	Pre	M	1.46	1.78	74.23**	.44	24.99**	.21	15.97**	.14
		SD	.33	.18						
	Post	M	1.84	1.92						
		SD	.17	.12						
Pictures	Pre	M	1.22	1.61	62.70**	.40	18.69**	.17	10.95**	.10
		SD	.39	.34						
	Post	M	1.70	1.81						
		SD	.29	.26						

Note. SLD = specific learning disabilities; *SD* = standard deviation; TD = typically developing.
*p < .05. **p < .01.

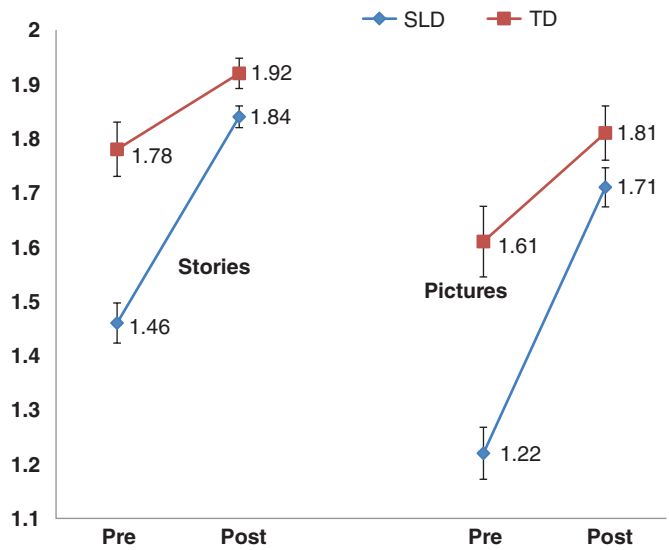

FIGURE 2. Identification of complex emotions in social situations from pictures and stories in SLD and TD groups before and after intervention.
Note. SLD = specific learning disabilities; TD = typically developing.

not from pictures. Also, both groups improved their scores from pre- to postmediation in both measures (p < .05). It is evident, however, that the degree of improvement is higher in the SLD than in the TD group.

Knowledge of Complex Emotions in SLD and TD Groups Before and After the LEMP

Preliminary analyses of emotional knowledge of children with SLD and TD showed no significant group differences on basic emotions as well as a ceiling effect. It was decided therefore to refer in further analyses only to complex emotions.

The means and *SD* of knowledge of emotions are presented in Table 2. To examine group differences as well as the improvements from pre- to postmediation, we carried out repeated measures MANOVA of Group by Time (2 × 2) where the dependent variables were definition of emotions and giving examples of emotions. The analysis showed general significant main effects for Group, $F_{(2,94)} = 18.49$, $p < .001$, $\eta^2 = .28$, and Time, $F_{(2,92)} = 113.88$, $p < .001$, $\eta^2 = .71$. These findings indicate clearly that the SLD group scored lower than the TD group and that there was a significant improvement from pre- to postmediation. The main effects were modified however by a significant interaction of Group by Time, $F_{(2,94)} = 4.99$, $p < .01$, $\eta^2 = .09$, indicating higher pre- to postmediation improvement for the SLD than the TD group.

To examine the specific contribution of each measure to the overall effect we carried out separate repeated measures ANOVA of Group × Time (2 × 2) for each of the dependent variables (see Table 2). The analysis revealed significant main effects as well as significant interactions for both dependent variables (see Figure 3). As can be seen in Figure 3, the SLD group showed higher pre- to postmediation improvement than the TD group. Bonferroni post hoc analysis showed that in both measures the TD group was significantly higher than the SLD group on both pre- and postmediation ($p < .05$). Also, both groups improved their scores significantly from pre- to postmediation in both measures ($p < .05$). Figure 3 shows, though, that the improvement was stronger for the SLD than for the TD group.

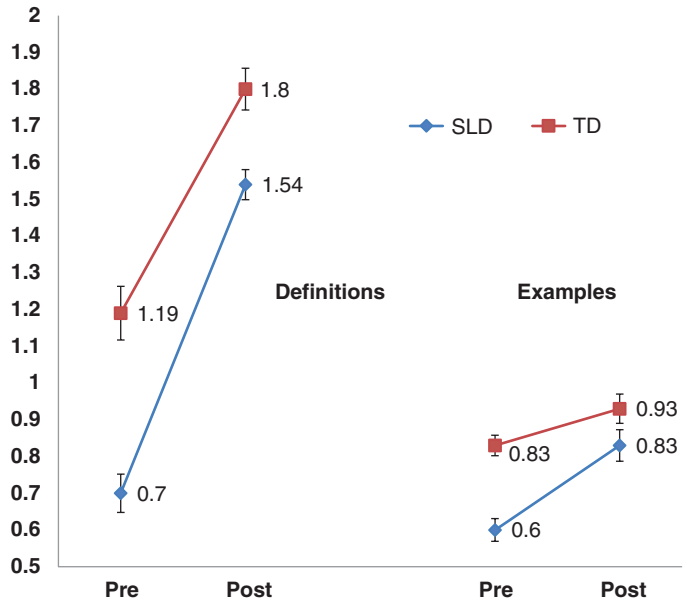

FIGURE 3. Definitions of and providing examples for complex emotions in SLD and TD groups before and after intervention.

Note. SLD = specific learning disabilities; TD = typically developing.

TABLE 2. Means, Standard Deviations, and *F* Statistics of Definitions of and Giving Examples for Complex Emotions

Knowledge of Emotions	Phase		SLD (n = 62)	TD (n = 33)	Time (A)	η^2	Group (B)	η^2	A × B	η^2
Definitions	Pre	M	.70	1.19	211.17**	.69	34.83**	.26	5.30*	.05
		SD	.40	.44						
	Post	M	1.54	1.80						
		SD	.34	.28						
Examples	Pre	M	.60	.83	**36.93	.28	14.34**	.13	6.01*	.06
		SD	.28	.16						
	Post	M	.83	.93						
		SD	.25	.16						

Note. SLD = specific learning disabilities; *SD* = standard deviation; TD = typically developing.
*p < .05. **p < .01.

Correlations of Emotional Understanding Measures With Language Ability

One of the goals of the current study was to examine the relation between emotional understanding and verbal ability both before and after the LEMP. We expected that, in general, a higher correlation will be found in the SLD than in the TD group and that the LEMP will bring about a decrease in the correlations especially in the SLD group.

Preliminary analysis showed, as expected, significant Group differences, Wlik's Lambda = .73, $F_{(5,\ 91)}$ = 6.65, p < .001, η^2 = .27, indicating higher verbal ability (Total score) of the TD than the SLD group. Post hoc analyses revealed that the TD group scored significantly (p < .001) higher than the SLD group on each of the major five subscales of the *Spoken Language Test*: categories, resemblance, difference, ambiguity, and definitions.

To examine our expectations, we created a mean verbal ability score based on the five verbal ability scales. We then carried out separate Pearson correlations of verbal ability with the emotional understanding measures for each of the Group × Time measures (see Table 3). The findings reveal that in the pre-mediation phase the correlations are higher than in the postmediation phase, except for Providing Example in the TD group. Also, in general, there is a decrease in level of correlations from pre- to postmediation, which is more articulated in the SLD group.

DISCUSSION

The first hypothesis of the current study was that a short mediation process will improve emotional understanding of both children with SLD and TD children. The findings reveal significant main effects for all four variables of emotional understanding: identification of emotions from stories and pictures, definition of emotions, and providing examples for emotions. The findings clearly indicate that only three hours of mediation could improve a skill considered to be of importance for social competence (Denham, 2007; Denham et al., 1990; Ensor et al., 2011; Garner et al., 1994; Halberstadt et al., 2001). Of most importance is the finding showing greater improvement from pre- to postmediation for children with SLD as indicated by the

TABLE 3. Pearson Correlations Between Language Ability and Emotional Understanding Measures in Pre- and Postmediation Phases

		SLD			TD		
Emotional Understanding		Pre	Post	Fisher *Z*	Pre	Post	Fisher *Z*
Identification of Emotions	Stories	.52**	.13	2.49*	–.05	.05	ns
	Pictures	.55**	.03	3.30*	.19	.06	ns
Knowledge of Emotions	Definition	.46**	.37**	ns	.25	.08	ns
	Providing Example	.38**	.31*	ns	.31	.48**	ns

Note. SLD = specific learning disabilities; TD = typically developing.
*$p < .05$. **$p < .01$.

significant Group × Time interactions of all emotional understanding variables. These findings confirm our second hypothesis that the improvement of children with SLD will be higher than that of TD children (see Tables 1–2 and Figures 1–2). A possible explanation for the differential improvement is that the children with SLD, who scored initially lower than the TD children, benefited more from the mediation that was adapted for their needs, and therefore closed the gap with their counterpart TD children. It is important to note that emotional understanding, which develops spontaneously among young children (Harris, 1993, Lewis, 1993; Pons, Harris, & de Rosnay, 2004; Saarni, 1999), is developmentally deficient in children with SLD (Bauminger et al., 2005; Bloom & Heath, 2010; Dimistrovsky et al., 1998; Fujiki et al., 2007). However, as demonstrated in our findings, a short mediation phase can significantly enhance it. It seems that the mediation phase provided both groups with language tools (e.g., names of emotions, how to define and discuss about emotions) that facilitated the emotional understanding. The language tools were more crucial as a compensatory element for children with SLD than for the TD children. This argument is based on the premise that children with SLD have varied difficulties (e.g., cognitive, language, and emotional) that act as barriers in receiving mediation from external sources. These barriers interfere with the spontaneous mediation processes in the family and school systems. However, as was shown in the current study, it is possible to activate compensatory short-term teaching processes to improve their emotional understanding. That does not mean that the changes found are permanent. It only shows that potentially it is possible in the future to start a change process and that relatively short-term intervention might be sufficient to stabilize the improvements and transfer them to other social and cognitive domains. The findings, though, should be taken with some caution as there was a tendency for a ceiling effect in the TD group. We suggest, therefore, in a future study to add more difficult items of emotional understanding as well as a more intensive teaching phase using the MLE approach. We expect, like the current findings, that children with SLD will show higher improvement following teaching than the TD children.

Our findings are in congruence with findings of DA focused on cognitive aspects. Previous research showed that children who had not been exposed to adequate MLE in the past, because of internal or external reasons, benefited more from the mediation given during a DA procedure than children who had relatively rich MLE (Tzuriel, 2000).

The correlation analyses (Table 3) showed that among children with SLD the correlations between emotional understanding and language ability were significantly higher in the pre- than in the postmediation phase, especially for identification of emotions from stories and from pictures. In the TD group on the other hand, the correlations in general were not significant either in the pre- or postmediation, except for providing examples in the postmediation phase. The findings of the premediation correlations in the SLD group are congruent with previous findings showing significant correlations between language skills and emotional understanding (Cutting & Dunn, 1999; de Rosnay & Harris, 2002; De Stasio et al., 2014; Izard et al., 2001). The relation between language ability and emotional understanding in the premediation phase of the SLD group may be explained by the fact that emotional understanding contains language components such as emotional vocabulary, verbal definition of emotions, and an ability to discuss emotional experiences. Thus, language ability is crucial for emotional understanding of children with SLD as it provides linguistic tools to process the emotions (Denham, 2007; Saarni, 1999). The decrease of correlations in the SLD group from pre- to postmediation, may be attributed to an "equalizing" phenomenon where the mediation process brought about homogeneity of this group, in addition to the increase in their performance. The mediation for emotional understanding actually "diluted" the importance of language difficulties as a determinant factor of difficulties in emotional understanding of children with SLD. The lack of significant correlations in the TD group might derive from a ceiling effect on the language score.

Limitations and Implications of the Study

One of the limitations of the current study is related to the different number of children in the SLD and TD children that might influence the results, and the lack of measurement of a common intellectual ability score. A common score would allow us to covariate it with emotional understanding and language ability. Another limitation is related to lack of distinction within the SLD group among different types of disabilities (i.e., linguistic, visual, motoric), which might be differentially related to emotional understanding.

The Present Study Has a Few Implications. The finding showing an existence of a potential for improvement in the emotional understanding of children with SLD is promising for the development of long-term intervention programs to enhance emotional understanding of children with SLD. The findings that children with SLD, after mediation phase, scored generally higher than the TD children's premediation score is promising as they point to the powerful effects of the mediation procedure in equalizing children with SLD with TD children. Another important application supporting the power of the mediation process is related to the decrease of the influence of language ability on emotional understanding after the intervention. In other words, the mediation reduced the impact of the linguistic difficulties on the emotional understanding of children with SLD. It is possible that the intervention itself was saturated with verbal input so that both the emotional understanding and the verbal level of the participants increased simultaneously. For future intervention efforts we should consider the intricate relation between the two domains and the fact that we cannot separate verbal intervention from the emotional understanding content as both are intimately related.

The Research Also Has Practical Implications. Its findings outline future directions for the treatment for students with SLD to improve their functioning in social-emotional cognition. The findings support the fact that an intervention program that is implemented while maintaining

the principles of mediation processes provides children with cognitive tools, language, knowledge, vocabulary, and insights on the emotional world and consequently leads to improvement in emotional understanding. It should be noted that although all children can benefit from the mediation process of emotional understanding, it is more influential with children with SLD. In future research we do suggest implementing the LEMP with other clinical groups, such as children on the autistic spectrum and children with intellectual disability.

The uniqueness and innovation of this study is that, for the first-time, emotional understanding has been studied using a DA procedure, which involves a mediation process that assesses the individual's potential for change. Until now, the realm of emotional understanding has been studied in a static manner, with emphasis on the child's current functioning without an evaluation of the effect of mediation on function.

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