Original Article

Artigo Original

Effects of a language program in the social functioning of children at elementary school

Efeitos de um programa de linguagem no funcionamento social de crianças do Ensino Fundamental

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Keywords

Speech Therapy
Education
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ABSTRACT

Purpose: the purpose of this study was to describe a language stimulation program, including teacher training and practical activities in the classroom, and investigate the effectiveness of this action on the social functioning and behavioral problems of elementary school children. **Methods**: 136 children from six classrooms of a public school and their teachers participated in this research. Of these, half were given the language stimulation program: 16 hours of training for teachers and 9 meetings in the classroom with activities for students. The activities involved instruction for the use of language reflection and practice with the narrative structure. Teachers filled out questionnaires about the social skills and behavior problems of their students before and after the program. **Results**: there was no statistically significant difference between the research groups pre- and post- program in terms of assertiveness/ social resourcefulness (1st and 5th grades) and cooperation/affection (1st and 3rd grades). In the research groups, children of the 3rd grade, different from the 1st and the 5th grade, showed more evolution in their self-control abilities, which may be related to the lower frequency of externalizing problems in this group. **Conclusion**: the language program had positive effects on social assertiveness/resourcefulness skills and social cooperation/affection.

Descritores

Fonoaudiologia
Educação
Docentes
Crianças
Habilidades Sociais

RESUMO

Objetivo: o objetivo deste estudo foi descrever um programa de estimulação de linguagem, incluindo capacitação docente e atividades práticas em sala de aula, e investigar o efeito deste sobre o funcionamento social e problemas comportamentais de escolares do Ensino Fundamental. **Método**: participaram 136 crianças de seis salas de uma escola pública e seus professores. O grupo pesquisa recebeu o programa de estimulação de linguagem: 16 horas de capacitação docente e 9 encontros em sala de aula com atividades para os escolares. As atividades envolveram reflexão e prática com a estrutura narrativa. Os professores preencheram questionários sobre as habilidades sociais e problemas de comportamento de seus alunos, pré e pós-programa. **Resultados**: houve diferença estatisticamente significante entre pré e pós-programa dos grupos pesquisa em assertividade/desenvoltura social (1º e 5º anos) e cooperação/afetividade (1º e 3º anos). Nos grupos pesquisa, diferente dos escolares do 1º e do 5º anos, crianças do 3º ano apresentaram maior evolução em suas habilidades de autocontrole, o que pode estar relacionado à menor frequência de problemas externalizantes neste grupo. **Conclusão**: o programa de linguagem proporcionou efeitos positivos nas habilidades de assertividade/desenvoltura social e cooperação/afetividade.

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INTRODUCTION

It is common knowledge that formal education is important for a country's economic, social and political development. However, in the Brazilian context, one notices the low performance of students in basic disciplines such as Portuguese Language and Mathematics.

Several biological, family and social factors intervene in the school performance of children. The brain structures in charge of critical learning processes are vulnerable to stimulation, stress and nutrition[1]. As a result of this interaction, linguistic and behavioral skills have been studied due to their importance for learning at school[2,3].

The role of oral language in learning reading and writing has been well described in the literature: phonological skills[4,5], vocabulary[6,7] and narration skills[8]. While the receptive vocabulary and syntactic skills influence learning, expressive vocabulary and syntax are also significant for improvement of interpersonal communication[9].

Besides language, other skills allow children to adapt to the school environment and learn. Specific types of behavior that enable schoolchildren to deal effectively with interpersonal situational demands are called social skills. In childhood, relevant behaviors include self-control and the capacity for emotional expression (tolerating frustrations, expressing positive and negative emotions); civility (greeting, thanking others); empathy (listening to and showing concern for others, expressing understanding toward the feelings and experiences of others); assertiveness (defending their own rights, resisting peer pressure); making friendships (posing and answering questions, initiating and maintaining conversation); interpersonal problem solving (identifying and evaluating possible alternatives); and academic social skills (following oral rules or instructions, taking part in discussions)[10].

Programs involving oral language practices have shown relevant results in student learning, as they potentialize the development of reading and/or writing[11-17]. However, we have not found studies on the influence of these programs on the social functioning of Elementary School children. Specifically, we ask whether children with greater language skills are more able to develop socially acceptable interpersonal relationships. Do language stimulation programs in the school environment afford benefits in what regards other skills besides learning?

This research aimed at describing a language stimulation program for Elementary School children, as well as investigating its effects on the social functioning and behavioral problems of these schoolchildren.

METHODS

This research was undertaken upon approval by the Institutional Ethics Committee, under nº 183/13, and after signing of Terms of Free and Informed Consent by the children's parents and/or caretakers. It was done in two stages: 1) drawing up of a language stimulation program; and 2) application of the program on Elementary Schoolchildren.

1) Drawing up of the Program

The Program was created to be applied in two stages: teacher training and activities with students.

Teacher training aimed at enhancing knowledge on communication and language through expositive classes involving theory, videos and reflection activities. The themes expounded were based on the literature about the integration between several factors (biological and social) during development; the importance of oral language for learning and interpersonal relationships; the importance of effective communication and healthy interaction between teachers and pupils[2-9,18]. The themes included in this part of the program are shown in Chart 1. The Program's content was offered in workbooks and recorded on CDs.

For the activities intended for the classroom, as described in Chart 2, priority was given to the stimulation of language through oral narratives, involving several complex processes: to establish this relation between events and produce orally the narrative

Chart 1. Topics discussed in the theoretical portion of the program

Part I. Development of oral language and communication: What is communication and the skills necessary for efficient communication; What is oral language: how the child produces sounds, names things, forms sentences and complex discourses; About what children speak and how they develop narratives; Reception of information and hearing processing; Factors related to the development of language and alert signals.
Part II. The role of language in written language learning: What is reading and writing; What is necessary to develop written language; Hearing processing and visual processing; Memory, attention, executive functions; Metalinguistic capacities: phonological, morphological and metatextual consciousness. Signs of problems.
Part III. The role of language in interpersonal relationships: Processing of emotions; Language as a tool of thought, control of emotions and behavior; Actions and language; Development of language x behavior.
Part IV. The child is at school – what do they do: Integration between hearing, linguistic, social and emotional skills; When there are problems: examples.
Part V. The children arrive at school – why don't some of them learn: Specific learning disorders; Secondary difficulties to neuropsychiatric disorders; Secondary difficulties to oral language disorders; Comorbidities. What do children bring from their environments?: Socioeconomic conditions, Social vulnerability, maltreatment and its consequences on development and learning.
Part VI. How can I help?: This is my pupil: what do they bring, ease and difficulties, where do they come from and what did they bring; What can I change in myself: how is my communication, what does it cause in students and how to use it positively; Complementing my classes: changes in posture and in the environment; Partnership Between Speech-Language Therapy and Teachers: phonological consciousness activities, phonemic consciousness activities, orthographical mastery and narrative elaboration activities.

Chart 2. Objectives and strategies of the activities

Meetings: 1st to 3rd: Awareness, comprehension and efficient use of communication. Material: Workbook elaborated by the researcher with narrative about friends who discover the importance of reading and communication. Strategies: 1. Elaboration of lists: benefits of reading, importance of listening and speaking well; situations in which we can speak freely and others when we cannot speak; 2. Identification of images depicting acts detrimental to hearing, to abuse of the voice and offences to the listener; 3. Dynamics to stress the difficulty in relaying information in speech when one shouts or when one does not listen to the speaker; 4. Mimics game: each student of the group takes a card with a sentence and must communicate it to the group through mimic. If the group gets it right, it scores a point; 5. Shouting game: each student of the group takes a card containing a function (protest, request, etc.) and must communicate it to the group with a shout. If the group gets it right, it scores a point; 6. Speaking low game: each student of the group takes a card containing a function (protest, request, etc.) and must communicate it to the group speaking very low; 7. Identification of feelings in several day-to-day situations: When we hear good and bad things, when we become happy or sad; 8. Reversion game: Each student in a group takes a sentence (praise or offence). If he gets praise he scores a point; if he gets an offence he only scores a point if he can revert the content; 9. Praise game: each student states a positive characteristic of a colleague. Write the list on the board.
Meetings: 4th to 7th: Identification and exploration of the elements of the narrative: setting, complication/problem, inner response, planning/attempt, consequence/resolution, reaction[22], through stories of children's books. Strategies: Marking of each narrative element with a color; explanation of each element and association with symbols; use of orienting questions: Who participates in the story? Where does the story take place? When does the story happen? What happened? What problem took place in the story? What happened? How did the participants feel? What solution did they think of and what did they try to do? What was the result? How did they react after the result? Discussion of the changes in the story's characters during the facts, in accordance with problems and results, and the various attempts at solving a single problem.
Meetings: 8th to 9th: Adding elements and generation of narratives from problems. Material: Sheet with the symbols and phrases which orient a narrative and notes on paragraphs, punctuation, title, dialogs and review. Strategies: Creation of two stories: one with the problem*: A boy (or girl) who lost something very important;* another story with the characters: *John, a sad boy, who has no dreams and doesn't believe in anything*; *An intelligent woman, very sympathetic and supportive. .*
Complementary activities done at other times by the teacher: Identification of the elements of the written story; complete the paragraphs with passages from the narrative; Cloze technique – choose the appropriate words (adjectives, verbs, substantives), written production from sequences.

discourse, the child must coordinate several linguistic skills including phonological, semantic and syntactical processing[19], besides executive, attentional and affective functions[20]. In this sense, the narrative is an important aspect of language, directly relevant for the social and academic development of children[21]. The program involved identification, exploration and production of the narrative elements, using oral support, images and writing[14,22]. Nine weekly meetings were planned, with the materials coherent with the academic level of the sample, selected in partnership with the teachers.

2) Application of the Program

Location and socioeconomic characteristics

The research was done with Elementary schoolchildren from a state public school with a Basic Education Development Index of 5.3 (target: 4.4)[23].

The Socioeconomic Level Indicator (SELI) of the school's students is classified within group IV (groups from I to VII), in which families stated they had at home basic goods (radio, one refrigerator, one or two cellphones, one bathroom and two or more color TV sets;); complementary goods (videocassette or DVD, washing machine and computer, with or without internet) and supplementary goods, (freezer, one phone and a car). Besides that, they do not hire a monthly-wage maid; the monthly family income is between one and two minimum wages; the parents and/or caretakers have completed fundamental school and may or may not have completed high school, but did not complete higher education.

Participants

The five school years were invited to participate in the survey (1st to 5th grades). The inclusion criteria were the school year and the consent of parents. Exclusion criteria were the presence of sub-normal visual and hearing acuity and cognitive development below normal standards, and children with other associated pathologies, such as genetic, neurological or psychiatric syndromes or intellectually deficient, consigned in the school records or indicated by teachers during the program. Besides that, students who had not been present to at least 75% of the meetings and/or had not completed evaluation and re-evaluation were also excluded from the survey.

The number of 2nd to 4th-year teachers who were willing to take part in the research was insufficient. To define the research and control groups, a draw was done with the teachers of the 1st, 3rd and 5th years who were interested in participating in the program.

The sample comprised 136 schoolchildren from the 1st, 3rd and 5th grades, including two classes per year, that is, one was included in the research group (RG) and the other one in the control group (CG). The schoolchildren of the RGs took part in the program, and their teachers underwent training. The schoolchildren in the CGs took part only in

the pre- and post-program evaluations, and their teachers didn't receive any training. The descriptive data are shown in Table 1. The RG was made up of a larger number of girls from the 3rd and 5th grades, but there was no statistical difference regarding gender and age between the RGs and CGs in each year.

Execution of programmed actions

The training of the teachers in the RGs took place in four bi-weekly meetings of four hours each. In these meetings the teachers received a workbook with the planned syllabus and theoretical-practical materials recorded on CDs for consultation during the practical proceedings. The structure of the practical portion of the program to be applied to the students within the classroom was presented in the last meeting. The teachers helped in the adjustment of the schedule and duration and in the selection of the stories to be worked with in the practices with narratives.

After the training the work in the classroom began, once a week and during 50 minutes, in the school time.

Nine meetings were held, and the activities were applied jointly between the researcher and the RG teachers. The students listened to and/or read the narratives and the activities involved identification and exploration of narrative elements and production, orally and/or in writing. No specific interventions were done in the students' written production regarding textual conventions or orthography errors.

In another day of the week the teacher directed, by him/herself, a complementary activity, pre-elaborated jointly.

Evaluation and re-evaluation instruments

Social Skills, Behavior Problems and Academic Proficiency Inventory for children [24]; the teachers of the RG and CG groups answered a specific questionnaire. The social skills scale contains 22 items and evaluates the joint social behaviors in an individual's repertoire, grouped into four factors: Responsibility, Self-Control, Social Assertiveness/Resourcefulness and Cooperation/Affectivity. The questions present three answering alternatives regarding the frequency of occurrence (*Never*=0, Some Times=1 and Very Often=2). The problematic behaviors indicator scale contains 14 items, evaluating the behaviors that compete or interfere in learning and performance of the skills (externalizing, internalizing and hyperactivity). These items are answered in accordance with their frequency, with three answering alternatives (*Never*=0, Some Times=1 and Very Often=2). The questionnaires were filled by the teachers before and after the application of the Program. The results were analyzed by a psychologist who collaborated with the team. General and factorial scores were computed for each scale. The greater the skill scores, the more elaborate is the social repertoire, and the greater the score of problematic behavior indicators the more support for the child is needed.

Table 1. Characterization of individuals regarding school level, age and gender

School year	Group	Average age and sd	Female gender	Male gender
1st year	RG	6.5y (sd = 0.5)	15 (50%)	15 (50%)
	CG	6.6y (sd = 0.7)	15 (48.3%)	16 (51.7%)
3rd year	RG	8.5y (sd = 0.5)	13 (65%)	7 (35%)
	CG	8.5y (sd = 0.5)	7 (43.8%)	9 (56.2%)
5th year	RG	10.3y (sd = 0.5)	14 (73.6%)	5 (26.4%)
	CG	10y (sd = 0.9)	10 (50%)	10 (50%)

RG: research group; CG: control group; sd: standard deviation; y: year

Statistical analyses

Basic exploratory techniques were used, such as average, median, standard deviation and frequency analyses. The Wilcoxon Signed Rank non-parametric statistical analysis was used for the comparison of averages within each evaluation item in the research and control groups, before and after application of the program. All the hypotheses tests developed in this work considered a significance of 5%, that is, the null hypothesis was rejected when the p-value was under 0.05.

RESULTS

Intra-group and inter-group comparison before the program

As observed in Table 2, before the program there was no significant difference between the RG and CG of the 1st year, in terms of social skills and behavior problems. In the 3rd year, there was a significant difference between the RG and CG in terms of self-control, social assertiveness/resourcefulness and externalizing behaviors. In the 5th grade, there were significant differences between the RG and CG in the factors responsibility, cooperation/affectivity and externalizing behaviors. Both in the 3rd and in the 5th grades, the RG showed better performance in the factors described.

In the comparison between the scores of the school years, both in the RG and the CG the students from the 5th year had lower scores than the students from the 1st and 3rd grades regarding social skills and higher scores in behavior issues, which indicates a higher frequency of problems in this school year.

Intra-group and inter-group comparison after the program

Higher scores were observed in some skills after the program. In the 1st grade the RG scores were higher after the program in the social assertiveness/resourcefulness and cooperation/affectivity (Table 3), which shows the development of these skills not observed in the CG. The students from the 3rd year of the RG had higher scores for self-control, social assertiveness/resourcefulness and cooperation/affectivity, and lower scores in behavior problems (Table 4). Those from the 5th year in the RG had higher scores than the CG for social assertiveness/resourcefulness and cooperation/affectivity (Table 5).

Table 2. Comparison between research group and control group before the program

Variables	Research Group				Control Group			p-value
	Year	Average	Median	Standard Deviation	Average	Median	Standard Deviation	
Social skills – total (score 0-44)	1st year	37.83	42.00	9.33	39.23	42.00	4.81	0.3682
	3rd year	37.90	38.00	4.29	31.81	32.00	4.45	0.0004*
	5th year	31.84	32.00	4.23	28.15	28.50	5.38	0.0333*
Responsibility (score 0-12)	1st year	10.20	12.00	3.24	10.77	11.00	1.31	0.4554
	3rd year	11.90	12.00	0.31	11.75	12.00	0.58	0.4419
	5th year	10.89	12.00	1.63	8.90	9.00	2.67	0.0078*
Self-control (score 0-16)	1st year	13.23	15.50	4.45	14.16	15.00	2.05	0.7402
	3rd year	13.20	14.00	1.91	10.31	10.00	2.30	0.0003*
	5th year	10.42	10.00	1.89	9.75	9.00	2.02	0.0952
Social assertiveness/ resourcefulness (score 0-10)	1st year	8.90	10.00	2.02	8.65	10.00	1.72	0.3518
	3rd year	8.00	8.00	1.69	5.56	6.00	1.63	0.0004*
	5th year	5.74	6.00	1.88	5.75	6.00	1.12	0.4092
Cooperation/ affectivity (score 0-6)	1st year	5.50	6.00	1.11	5.65	6.00	1.05	0.4878
	3rd year	4.75	5.00	1.21	4.19	4.50	1.68	0.3501
	5th year	4.79	5.00	1.18	3.75	4.00	0.85	0.0067*
Behavior problems - total (score 0-28)	1st year	3.27	0.00	6.75	2.23	0.00	5.36	0.7652
	3rd year	0.75	0.00	2.02	3.25	2.00	4.52	0.0029*
	5th year	5.26	2.00	6.76	8.25	8.00	3.37	0.0045*
Externalizing problems (score 0-10)	1st year	1.40	0.00	3.38	0.81	0.00	2.43	0.8353
	3rd year	0.25	0.00	0.79	1.56	0.00	2.71	0.0264*
	5th year	2.11	0.00	3.57	3.70	4.00	2.23	0.0141*
Hyperactivity (score 0-8)	1st year	1.20	0.00	2.31	0.90	0.00	1.76	0.7587
	3rd year	0.25	0.00	0.79	0.88	0.00	1.78	0.2201
	5th year	1.58	0.00	2.14	3.10	3.00	1.25	0.0025*
Internalizing problems (Score 0-8)	1st year	0.67	0.00	1.30	0.52	0.00	1.36	0.5073
	3rd year	0.25	0.00	0.64	0.81	0.00	1.17	0.0658
	5th year	1.58	1.00	1.57	1.45	1.00	1.05	1.0000

*= significant; Wilcoxon test; p<0.05

Table 3. Comparison of the evolution of social skills and behavior problems between the research group and control group in the 1st year

Variables		Research Group			Control Group			p-value
		Average	Median	Standard Deviation	Average	Median	Standard Deviation	
Social skills – total (score 0-44)	Pre	37.83	42.00	9.33	39.23	42.00	4.81	
	Post	40.13	42.50	6.38	39.81	42.00	4.78	0.2290
	Difference	2.30	0.00	5.36	0.58	0.00	1.63	
Responsibility (score 0-12)	Pre	10.20	12.00	3.24	10.77	11.00	1.31	
	Post	10.40	12.00	2.94	10.84	11.00	1.27	0.6671
	Difference	0.20	0.00	0.66	0.06	0.00	0.57	
Self-control (score 0-16)	Pre	13.23	15.50	4.45	14.16	15.00	2.05	
	Post	13.73	15.00	3.29	14.65	16.00	1.87	0.6674
	Difference	0.50	0.00	1.61	0.48	0.00	1.06	
Social assertiveness/ resourcefulness (score 0-10)	Pre	8.90	10.00	2.02	8.65	10.00	1.72	
	Post	9.53	10.00	0.97	8.71	10.00	1.74	0.0118*
	Difference	0.63	0.00	1.22	0.06	0.00	0.44	
Cooperation/ affectivity (score 0-6)	Pre	5.50	6.00	1.11	5.65	6.00	1.05	
	Post	5.83	6.00	0.38	5.61	6.00	0.99	0.0461*
	Difference	0.33	0.00	0.80	-0.03	0.00	0.41	
Behavior problems - total (score 0-28)	Pre	3.27	0.00	6.75	2.23	0.00	5.36	
	Post	3.07	0.00	6.02	1.74	0.00	5.03	0.0681
	Difference	-0.20	0.00	1.95	-0.48	0.00	1.18	
Externalizing problems (score 0-10)	Pre	1.40	0.00	3.38	0.81	0.00	2.43	
	Post	1.47	0.00	3.28	0.71	0.00	2.25	0.4182
	Difference	0.07	0.00	0.69	-0.10	0.00	0.60	
Hyperactivity (score 0-8)	Pre	1.20	0.00	2.31	0.90	0.00	1.76	
	Post	1.07	0.00	1.93	0.61	0.00	1.58	0.0513
	Difference	-0.13	0.00	1.01	-0.29	0.00	0.59	
Internalizing problems (score 0-8)	Pre	0.67	0.00	1.30	0.52	0.00	1.36	
	Post	0.53	0.00	1.11	0.42	0.00	1.31	0.7158
	Difference	-0.13	0.00	0.57	-0.10	0.00	0.30	

*= significant; Wilcoxon Test; p<0.05

Table 4. Comparison of the evolution of social skills and behavior problems between the research group and control group in the 3rd year

Variables		Research Group			Control Group			p-value
		Average	Median	Standard Deviation	Average	Median	Standard Deviation	
Social skills – total (score 0-44)	Pre	37.90	38.00	4.29	31.81	32.00	4.45	
	Post	43.70	44.00	0.66	32.06	32.00	4.78	<0.0001*
	Difference	5.80	5.50	4.25	0.25	0.00	0.68	
Responsibility (score 0-12)	Pre	11.90	12.00	0.31	11.75	12.00	0.58	
	Post	12.00	12.00	0.00	11.69	12.00	0.70	0.1037
	Difference	0.10	0.00	0.31	-0.06	0.00	0.25	
Self-control (score 0-16)	Pre	13.20	14.00	1.91	10.31	10.00	2.30	
	Post	15.70	16.00	0.66	10.38	10.00	2.28	<0.0001*
	Difference	2.50	2.00	2.14	0.06	0.00	0.25	
Social assertiveness/ resourcefulness (score 0-10)	Pre	8.00	8.00	1.69	5.56	6.00	1.63	
	Post	10.00	10.00	0.00	5.81	6.00	1.91	0.0008*
	Difference	2.00	2.00	1.69	0.25	0.00	0.58	
Cooperation/ affectivity (score 0-6)	Pre	4.75	5.00	1.21	4.19	4.50	1.68	
	Post	6.00	6.00	0.00	4.19	4.50	1.68	0.0001*
	Difference	1.25	1.00	1.21	0.00	0.00	0.00	
Behavior problems -total (score 0-28)	Pre	0.75	0.00	2.02	3.25	2.00	4.52	
	Post	0.10	0.00	0.45	3.69	2.00	5.02	0.0179*
	Difference	-0.65	0.00	2.11	0.44	0.00	0.81	
Externalizing problems (score 0-10)	Pre	0.25	0.00	0.79	1.56	0.00	2.71	
	Post	0.00	0.00	0.00	1.94	1.00	3.21	0.0115
	Difference	-0.25	0.00	0.79	0.38	0.00	0.81	
Hyperactivity (score 0-8)	Pre	0.25	0.00	0.79	0.88	0.00	1.78	
	Post	0.10	0.00	0.45	0.94	0.00	1.77	0.3506
	Difference	-0.15	0.00	0.93	0.06	0.00	0.25	
Internalizing problems (score 0-8)	Pre	0.25	0.00	0.64	0.81	0.00	1.17	
	Post	0.00	0.00	0.00	0.81	0.00	1.17	0.1185
	Difference	-0.25	0.00	0.64	0.00	0.00	0.00	

*= significant; Wilcoxon Test; p<0.05

Table 5. Comparison of the evolution of social skills and behavior problems between the research group and control group in the 5th year

Variables		Research Group			Control Group			p-value
		Average	Median	Standard Deviation	Average	Median	Standard Deviation	
Social skills – total (score 0-44)	Pre	31.84	32.00	4.23	28.15	28.50	5.38	
	Post	34.74	36.00	5.00	27.65	27.50	5.46	0.0008*
	Difference	2.89	3.00	3.53	-0.50	0.00	1.43	
Responsibility (score 0-12)	Pre	10.89	12.00	1.63	8.90	9.00	2.67	
	Post	11.00	12.00	1.49	8.65	8.00	2.64	0.1013
	Difference	0.11	0.00	0.32	-0.25	0.00	0.79	
Self-control (score 0-16)	Pre	10.42	10.00	1.89	9.75	9.00	2.02	
	Post	10.68	11.00	1.95	9.50	9.00	2.21	0.2150
	Difference	0.26	0.00	1.10	-0.25	0.00	0.85	
Social assertiveness/ resourcefulness (score 0-10)	Pre	5.74	6.00	1.88	5.75	6.00	1.12	
	Post	7.53	8.00	2.04	5.85	6.00	1.35	0.0023*
	Difference	1.79	2.00	1.87	0.10	0.00	0.55	
Cooperation/ affectivity (score 0-6)	Pre	4.79	5.00	1.18	3.75	4.00	0.85	
	Post	5.53	6.00	1.02	3.65	4.00	0.81	0.0085*
	Difference	0.74	0.00	1.37	-0.10	0.00	0.31	
Behavior problems -total (score 0-28)	Pre	5.26	2.00	6.76	8.25	8.00	3.37	
	Post	4.58	4.00	3.78	8.75	8.00	3.46	0.8423
	Difference	-0.68	0.00	4.41	0.50	0.00	1.76	
Externalizing problems (score 0-10)	Pre	2.11	0.00	3.57	3.70	4.00	2.23	
	Post	1.53	1.00	1.87	4.05	4.00	2.44	0.2378
	Difference	-0.58	0.00	2.36	0.35	0.00	1.09	
Hyperactivity (score 0-8)	Pre	1.58	0.00	2.14	3.10	3.00	1.25	
	Post	1.37	1.00	1.74	3.20	3.00	1.40	0.8905
	Difference	-0.21	0.00	1.51	0.10	0.00	0.79	
Internalizing problems (score 0-8)	Pre	1.58	1.00	1.57	1.45	1.00	1.05	
	Post	1.63	2.00	1.26	1.50	1.00	1.05	0.9465
	Difference	0.05	0.00	0.78	0.05	0.00	0.22	

*= significant; Wilcoxon Test; p<0.05

DISCUSSION

The objective of this research was to describe the drawing up of a language stimulation program and verify its effects on the social functioning of Elementary schoolchildren. The main results show improvement in some social skills and in the behavior of the schoolchildren in the RG, with differences between school years. However, the role of the language program will be discussed taking into account methodological factors, which may have contributed to these results.

In the 1st-year classes, the average scores on social skills and behavior problems were similar for the students in the RG and the CG. In the post-program evaluation, the RG students showed improvement in social assertiveness/resourcefulness and cooperation/affectivity skills.

In the 3rd-grade classes, the RG students showed improvement in self-control, social assertiveness/resourcefulness, cooperation/affectivity and behavior, an evolution not observed in the CG students. However, in the post-program period, they might have benefited more easily from the program due to already having a better performance in these skills, which suggests an effect not due exclusively to the program but also to maturity and schooling. It should be noted, however, that the students from the RG and CG had similar results in the cooperation/affectivity factor before the program, and the group that went through the program showed significant evolution after the program.

In the 5th-grade classes, the RG students improved their scores for social assertiveness/resourcefulness and cooperation/affectivity, more than the CG students. However, before the program the RG students already benefited from being more responsible and cooperative and having less externalizing problems than the CG, which might have helped in their improvement in assertiveness during the application of the program, suggesting that something similar to the 3rd-year classes had taken place, that is, program effects associated with greater maturing and schooling.

Although in the 1st-grade classes the effects of the program are clearly associated with the program, in the 3rd- and 5th-grades the differences between the RG and the CG observed before the program must be taken into account. The criterion adopted for the designation of classes to the RG and CG was the draw, to avoid that the school staff appoint the more problematic class for the program. Another cautionary measure was to work only with teachers who had shown interest in participating in the program. Thus, the 2nd- and 4th-grades were excluded, since only one teacher of each had shown interest; there would be the risk that the CG, in these cases, could belong to teachers who were not focused on the improvement of the class regarding the program skills.

The research was done in a public school and focused on language stimulation and non-intervention with students who had difficulties and/or problems. The program was created aiming at the class with all students together, within the regular class time, without forming special groups or going out with the class for specific activities. Thus, it was not workable to control the social functioning and behavior characteristics of the schoolchildren either in the RGs or CGs, or to propose specific actions for different groups.

Considering only the factors which scores were similar in the RG and CG before the program, effects were observed in social assertiveness/resourcefulness and cooperation/affectivity in the 1st-year classes, in cooperation/affectivity in the 3rd-year classes and in social assertiveness/resourcefulness in the 5th-year classes. Though the results should be treated with care in view of the better functioning of the RG before the program of the more schooled classes, these are the skills most affected by the language program.

Being assertive means being able to express oneself directly and clearly, taking into consideration the rights of the other person involved in the situation[25]. That is, it involves behaviors that express knowledgeability in relationships, such as introducing oneself to new people without being ordered to do it, questioning politely when one disagrees, making statements about oneself in appropriate situations and making friends easily. Cooperation/affectivity involves behaviors which contribute to the development of an activity and meeting the needs of others, such as offering help spontaneously and joining a group[24].

Children with little social initiative and resourcefulness have difficulty making friends, since introducing oneself to new people, joining activity groups without being ordered to, inviting others home and initiating conversations are challenging behaviors for them[26] and children who do not cooperate can be rejected or not be invited to participate in the group. Cooperation skills have been recognized and seen empirically as important protection factors against learning difficulties in the context of the classroom[27].

The students took part in the activities and competition games in small groups, which provided moments of joint action and stimulated cooperation. The tasks dealt with the importance of listening to others and speaking softly without shouting and not offending anyone. During the tasks the students were stimulated to identify common day-to-day situations in which communication failures caused problems and to reflect on more efficient ways to interact verbally. All these aspects were taken up again by the teachers in the remaining days of the week, which may have helped the memorization and use of assertive actions.

Other activities explored narrative elements such as setting, complication/problem, inner response, planning/attempt, consequence/resolution and reaction. The greater the child's level of knowledge about the narrative structure the more coherent and cohesive can be the text they elaborate[21], which shows these activities help in the organization of language. But, besides reflecting on textual structure and organization (metatextual consciousness), the story's content was also exploited using the traits of the characters, their emotions, intentions and motivations and the causal relationships between the actions, alternatives and decisions for problem resolution. This enables the child to understand the other and their feelings and attitudes.

The reflection on the structure of the narratives, the retellings and elaborations required that the children paid attention to the theme, maintaining the information during access to other information present in the long-term memory, elaboration of the linguistic structure, motor planning and verbal expression, and, since they involved several linguistic,

cognitive and emotional domains, they contributed to the children's development.

The teachers received information about the relationship between learning, the linguistic domain and social relationships. The themes addressed included the family environment in which the children were raised and the concepts they developed, as well as the feelings and attitudes that can arise in response to the grown-ups' attitudes. To understand and reflect on the role of the environment, the importance of the teacher's function for the development/reception of schoolchildren and the more productive results of a healthy interpersonal relationship may have led the teachers to improve their postures, attitudes and their way of talking to their students. Studies have shown that the volume and quality of the communication strategies used by teachers in the classroom afford benefits in the vocabulary and in the development of language[18]. When the children can express themselves they feel safe in the interaction context and can dispense with actions that hinder social development and interaction, such as shouting, cursing, physical and verbal aggression[28].

Only the students from the 3rd-grade class of the RG had scores significantly higher in self-control skills. Self-control refers to behaviors resorted to in situations of conflict or situations that require keeping their own behavior in check, such as restraining irritation, reacting appropriately to peer pressure, responding appropriately to mockery, accepting ideas from colleagues, ignoring distractions and having good relationships with different people[24]. Also only in the 3rd grade, students in the RG showed improvement in the total score concerning behavior problems, which involves the sum of the score of externalizing behaviors (behaviors involving physical or verbal aggression toward others or low control of humor), internalizing behaviors (behaviors indicating anxiety, sadness, loneliness and low self-esteem) and hyperactivity (behaviors involving excessive movement, restlessness and suicidal reactions). Self-control skills are predictive of significant variations in the global scores of behavior problems and specifically in hyperactivity and externalizing behavior scores, since controlling irritation and anger, accepting criticism and ending disagreements calmly can reduce the prospects of behavior problems in the children[29]. Children with greater self-regulation capacity display better social functioning, which influences academic performance[18]. It has already been pointed out that these results must be analyzed taking into account that the RG was already more skilled than the CG before the application of the program. However, students from the 5th-year classes of the RG also showed less behavior problems than those in the CG and had no improvement in their self-control. In the comparison between school years before the program, the students of the 3rd year are more socially skilled and display less behavior problems than those of the 5th grade, which suggests that the lower rate of externalizing behaviors is associated with self-control.

Regarding responsibility, the difference in scores between the two evaluation moments was small and negligible. That is, even after the application of the program, there were no differences in the actions of the students regarding the care toward the tasks, materials and the classroom, as well as the instructions. In the 1st-year classes, the students from both the RG and CG had a slight improvement of the scores that measure self-control skills, but their averages are higher than those of the 5th-grade students. The fact of their lower age and of being in the first year of fundamental school shows that the input from the teacher is sufficient to induce control of their attitudes in social interactions, at least in the classroom. As for the older and more schooled students, they might be less vulnerable to control by the teacher and stimulation programs due to their greater adaptation and the development of social habits.

This survey presents both limitations and directions for new explorations. One of the limitations has been discussed initially due to its relevance for data interpretation, and is related to the better performance of the 3rd- and 5th-year RGs before the application of the program. The involvement of more classes of each school year and the increase of the sample should make it possible to control the pre-program characteristics, analyzing only the scores of those that are similar at the beginning.

Since the use of the narrative, the main component of the program, involves several linguistic domains, it would be important to study which of these allow for greater development of social skills. Besides that, executive functions, which were not evaluated, can influence the skills oriented towards others, reflection and cooperation as better alternatives in social interactions. Future surveys could evaluate the interaction between oral/written language, executive functions and academic and social functioning in children who take part in stimulation programs, to develop programs for the improvement of mental health in the school environment, at viable costs and with effective results.

The satisfaction of the students regarding the program was not evaluated either, but voluntary participation and attendance to the activities might be an indicator that less formal activities in the classroom contribute positively to the motivation of students. In most activities, students could form groups in accordance with their preferences, independently of having difficulties or not. The authors think that listening attentively to a story, posing questions during the activities or even preparing a dish in the cafeteria stimulate the engagement of the students in school activities; this engagement has been associated with gains in reading and math skills [30].

Testing the effectiveness of teacher training in different schools, measuring knowledge, changes in attitudes and exploitation of strategies is important to diminish personal interference by the agent who applies the change.

Future surveys may replicate the program, with adaptations in accordance with the school environment. Studying the benefits of oral communication in interpersonal relationships and learning reaffirms the necessity of the speech-language professional in interdisciplinary teams, either as a clinic or as a health promoter.

CONCLUSION

The program caused an improvement in certain social skills of the RG: assertiveness/resourcefulness in the 1st and 5th school-levels and cooperation/affectivity in the students from the 1st and 3rd grades. The results for the 3rd and 5th grades should be viewed with caution, since there were differences between the RG and the CG before the application of the program. The improvement in self-control only in the RG of the 3rd grade seems to be associated with the lower frequency of externalizing behaviors in this group.

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Author contributions

LS participated in drawing up of the research, survey of the literature, collection and analysis of data, writing of the article and proceedings; MSC participated in drawing up of the research, analysis of data, writing of the article and final revision.