

Speech and language program for teacher training: evaluation of effectiveness

Programa fonoaudiológico de formação de professores: avaliação da efetividade

Programa de terapia del habla en la formación del profesorado: evaluación de la eficacia

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Abstract

Purpose: To test the effectiveness of the Speech Therapy Program for Teacher Training. **Methods:** It is a prospective essay which had the participation of 70 teachers of elementary school. The program consists of 10 modules and it aims to train the teachers in relation to the development of the oral and writing language. The modules lasted 2 hours each, which combined with 10 hours of complementary activities, totaled 30 hours. To verify the effectiveness of the program, the teachers answered a questionnaire named “Teacher Perception in Language”, which has 10 questions about hypothetical cases involving elementary school students, before and after the participation in it. From the questionnaire, the following indexes were created: the Global Perception Index (IPG), Oral Language Perception Index (IPLO), Writing Language Perception Index (IPLE) and Appropriated Development Perception Index (IPDA). The data were subjected to descriptive and inferential statistical analysis. **Results:** There was a statistically significant difference before and after the formation on the indexes IPLO, IPLE and IPG. The teachers did not show any differences on the IPDA index. **Conclusion:** The teacher perception about the development of the oral and writing language aspects changed significantly after his/her participation in the program. The study shows the relevance of the training program for elementary school teacher with effectiveness on the changing of the perception regarding the cases of oral and writing language alterations.

Keywords: Speech, Language, and Hearing Sciences; Education, Continuing; Faculty; Language Development; Language Disorders; School Health.

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Authors' contributions:

MERAE: contributed with project elaboration, data collection and analysis, structure of text.

JNS: collaborated with data analysis, literature review, and text review.

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Resumo

Objetivo: testar a efetividade do Programa Fonoaudiológico de Formação de Professores. **Métodos:** trata-se de um ensaio prospectivo que contou com a participação de 70 professores do ensino fundamental. O programa consta de 10 módulos e tem o objetivo de instrumentalizar os professores quanto ao desenvolvimento da linguagem oral e escrita. Os módulos tiveram duração de 2 horas cada um, que somados a 10 horas de atividades complementares, totalizou 30 horas. Para verificar a efetividade do programa, os professores responderam ao questionário “Percepção de Professores em Linguagem” que possui 10 questões de casos hipotéticos envolvendo alunos do ensino fundamental, antes e após a participação no mesmo. A partir do questionário foram criados os índices de percepção global (IPG), de alterações da linguagem oral (IPLO) e da linguagem escrita (IPLE) e do desenvolvimento adequado (IPDA). Os dados foram submetidos à análise estatística descritiva e inferencial. **Resultados:** Observou-se diferença estatisticamente significativa pré e pós-formação nos índices IPLO, IPLE e IPG. Os professores não apresentaram diferenças no índice IPDA. **Conclusão:** A percepção do professor sobre os aspectos de desenvolvimento da linguagem oral e escrita mudou de forma significativa pós-participação no programa. O estudo mostra a relevância do programa de formação para os professores do ensino fundamental com efetividade na mudança da percepção frente a casos de alterações da linguagem oral e escrita.

Palavras-chave: Fonoaudiologia; Educação Continuada; Docentes; Desenvolvimento da Linguagem; Transtornos da linguagem; Saúde Escolar.

Resumen

Objetivo: Probar la eficacia de el Programa de Terapia del Habla y la formación del profesorado. **Métodos:** Se trata de un estudio prospectivo con la participación de 70 profesores de la escuela primaria. El programa consta de 10 módulos y tiene como objetivo dotar a los profesores para el desarrollo del lenguaje oral y escrito. Los módulos duró 2 horas cada una, lo que combinado con 10 horas de actividades complementarias, ascendió a 30 horas. Para comprobar la eficacia del programa, los maestros respondieron el cuestionario “La percepción del profesor de la Lengua”, que tiene 10 preguntas de casos hipotéticos que implican estudiantes de la escuela primaria, antes y después de la participación. Del cuestionario se crearon los índices de percepción globales (IPG), los cambios en el lenguaje oral (IPLO) y el lenguaje escrito (IPLE) y el desarrollo apropiado (IPDA). Los datos fueron sometidos a un análisis estadístico descriptivo y inferencial. **Resultados:** Se observó antes y después de la formación de la diferencia estadísticamente significativa de los índices IPLO, y IPLE IPG. Los maestros no mostraron diferencias en el índice de IPDA. **Conclusión:** La percepción del maestro en los aspectos del desarrollo del lenguaje oral y escrito ha cambiado significativamente después de la participación en el programa. El estudio muestra la importancia del programa de capacitación para maestros de escuelas primarias con eficacia en el cambio de la percepción de la parte delantera de los casos de cambios en el lenguaje oral y escrito.

Palabras clave: Fonoaudiologia; Educación Continua; Docentes; Desarrollo del Lenguaje; Trastornos del Lenguaje; Salud Escolar.

Introduction

The development of oral language directly interferes on the writing development and both are essentials in the learning process¹. Therefore, the alterations in oral language, which shows high prevalence amongst Elementary School students, need an early diagnostic and intervention², since these changes interrelate with the writing develop-

ment and they may be deterministic factors in its development³.

The teacher has an important role related to the difficulties the student may show in their development⁴. Not only can the teacher observe the issues related to child development, but he or she can also directly intervene in this process by taking actions that will improve it. In this regard, it is important that the teacher is well prepared to create activities

that will improve the complete language development, oral and written, in all learning phases, regardless if the difficulty is visible in the child or not. To do so, it is important that the continued formation and studies be done in an adequate way⁵.

The researches together with teachers show they have an unfamiliarity regarding the oral^{6,7} and written^{8-10,11} language developments. In this respect, Speech and Audiology Therapy has a prominent role. The speech therapist's performance in the schools got stronger and wider with the Resolution n. 309, approved in 2005 by the Federal Speech and Audiology Therapy and Audiology Council¹², which says that it is the speech therapist's duty to train and advise the teacher by the means of lectures and orientations in a school environment. Such actions have as objective to promote improvement and prevention of oral and written language's changes that might facilitate and optimize the

learning and teaching process. However, although it has been provided since the regulamentation of the speech therapist profession, the culture focused in the teacher's formation on speech therapy act still needs to be increased and to be studied in a systematic way.

In the scope of Speech and Audiology Therapy there are continued formation programs directed to a diverse audience. In what is regarding the teacher's formation in speech and language, Chart 1 shows the featured programs. From the list shown in Chart 1, only one of the featured programs was not accomplished; yet it has been made. The other programs, according to their authors, accomplished a satisfactory result on what regards the teacher's formation and capacitation. This list of programs does not include the inclusive programs. The focused studies do not follow any specific theoretical standard for teacher's capacitation and formation.

Chart 1. Speech Therapy Training and Formation in Oral and Written Language for the Teachers

Title of the Paper	Description
Phonoaudiological Skilling for Child Educators ¹³ .	Training of kindergarten teachers through monthly academic journals on language.
Knowledge and Instrumentation of Teachers on speech development: actions for health promotion ⁶	The instrumentalization of kindergarten teachers, with a dialogue exposition, approaching themes like speech development, identification of children with speech development problems, referral to a speech therapist, and stimulation of speech in the classroom.
Health promotion and speech and language therapy actions in infantile education ⁷ .	Workshops for kindergarten teachers on the themes of hearing and hearing process and vocal health.
Orientational Speech Therapy Program for Kindergarten Teachers ¹⁴ .	Realization of an orientation program for kindergarten teachers on the themes of: Speech Therapy; speech and language development; stuttering; hearing; and voice.
Development of Interactive Educational Material on Written Language Disorders to Guide Elementary School Teachers ¹⁵ .	Capacitation of elementary school teachers through a CD-ROM regarding written language disorders.
Analytical Study of Teachers' Knowledge about Learning Disorders ¹⁶ .	Formative courses for elementary school teachers on the following themes: learning disorders; written language; dyslexia; dysgraphia; attention deficit hyperactivity disorder (ADHD); and the performance of the Speech Therapist in the schools.

The teacher's formative process must consider three basic axes of basic knowledge for the teacher good performance: 1) students, their process of knowing, their socio-cultural background, and their knowledge about learning process, human and language development; 2) the content the teacher teaches in relation to the syllabus and to a wider educational goals; and 3) the teacher's knowledge of different contents and different students, and evaluation and class handling¹⁷.

The possibilities for the Speech and Audiology Therapy performance in an educational context with the teachers, or Educational Speech Therapy, are broad and they aim for the promotion of health education in the school context. It is necessary to verify the teacher's knowledge of oral and written language and to train them; once the oral and written language development are essential for the student's whole development and they can be improved by the performance of a trained teacher. Moreover, students who show any alteration may be referred to a speech therapist.

The creation of the Speech and Audiology Therapy Training Program for Teachers - SATTPT (Programa Fonoaudiológico de Formação de Professores - PFFP) began with the desire of creating leaders who are sensitive to the linguistic development of children and adolescents, who are capable of improve their own abilities in the real learning environment: the classroom. Furthermore, three other factors were determinant for the creation of this project: 1) The growing openness for the continued formation of teachers in Brazil by the great repercussion of the Educational Law (Lei de Diretrizes e Bases da Educação Nacional)¹⁸; 2) The poorly covered performance in Educational Speech Therapy in the scope of continued teacher's formation, although it is regulated by the Federal Council of Speech, Language and Hearing Sciences¹²; and 3) The fact that there was no continued education for the teacher's program in Speech and Audiology Therapy (in oral and written language), that was published and replicable. When choosing the three thematic axes, SATTPT tried to attend to an Education and Teacher's Formation research's national¹⁹ and international¹⁷ demand. SATTPT's structure aimed a favorable pedagogy to the contents' perception, based on andragogic principles²⁰.

When creating this project, the researchers took care to explore an educational tool for training teachers. This tool is known as: "Teaching Cases

Aiming an Interface between Health and Education"²¹. This tool assists an investigation of the teacher's knowledge for teaching, in addition to provides specific knowledge regarding the theme that has been developed on teachers capacitation²². This project promoted a discussion of the aspects for oral and written language development and its amendments, as well as a discussion on the importance of the teacher's praxis of linguistic stimulation in the classroom and the relation between the teacher and the speech therapist in a school environment.

The present work aims to test the effectiveness of SATTPT for elementary school teachers. To do so, it compared the teacher's perception of elementary school regarding oral and written language development and its amendments pre and post the participation in the project.

Method

This study is a prospective trial, approved by the University Vila Velha Ethics Committee (CAAE-14813513.5.0000.5149). Each participant signed an informed consent for participation in the study.

The participants were teachers from the public elementary school system from Contagem city, Minas Gerais, Brazil. In order to become a participant in the research project, each teacher was invited through invitation letters to be part of it sent via mail through the Education State Department (SEDUC) of Contagem, which included the proposed training and formation in the semestral curriculum of the Department. The teachers were selected according to the following: a) Inclusion: be an elementary school teacher in the public school of the Contagem city and to sign the informed consent for participation in the study; b) Exclusion: did not answer correctly the questionnaire (selected more than one answer per question) or did not finish the questionnaire to the end; they were on Health Leave and were absent to two or more meetings from the formation and training program.

Ninety-four teachers participated in this research; 24 were excluded because they did not conclude the formation training continued program. From the remaining 70, the average age was 41,5 years old ($\pm 8,38$), and the age range was between 24 and 58 years old. The time they had been teaching had a variance between 1 to 37 years, with the

average being 10,7 years in exercise of the profession of teacher ($\pm 8,29$). The data regarding the characteristics of the participants related to time of practice as a teacher and the time spent in formation and education can be observed on Table 1.

The present study used two apparatus to execute the research: (1) the “Teacher’s Language Perception” (TLP) questionnaire, which had multiple choices and essay questions; and (2) Speech and Audiology Therapy Training Program for Teachers - SATTPT, focused on the elementary school teachers.

The TLP was first elaborated as a pilot study¹¹ and it was adapted to the present study. The adaptations made are related to the question’s content and the addition of two hypothetical cases that involves the linguistics subsystems that were taught during the Teachers’ Training as a tentative to satisfy the research’s objectives; which are to test the effectiveness of SATTPT. For the questions regarding oral language, which already approached the fluency and phonology alterations, two questions were added that had an approach on morphosyntax and lexical alterations; and one question was eliminated for being suggestive of anterior lisp, and this is a phonetic alteration. For the questions relative written language, one question describing orthographic interchange and discursive difficulties were added (see adapted TLP on Appendix 1).

Among the 10 questions, 2 represent cases considered adequate with no need for intervention and referral. The remaining 8 questions represent situations involving some kind of development alteration (being 4 questions regarding oral language, and 4 regarding written language). The four possibilities of answer are: The student has normal development; the student has light difficulties, and the student will overcome them naturally; the student has a development problem; and the teacher doesn’t know. Each multiple choice question is followed by the following essay question: what were the factors that you observed that made you choose this option?

The assertive answers were: “The student has a development problem,” for the oral and written language alterations, and “the student has a normal development” for the questions regarding an adequate cohesive development. The questionnaire, that firstly had 8 questions, has 10 questions of hypothetical cases and it was applied in its full form pre and post SATTPT.

The SATTPT is a continued formation course of Hegemonic²² kind, in which the teacher leaves the classroom, goes to this training course, and then returns to the classroom, applying what he or she learned from the training program without any monitoring or support. This continued education training process is common in Brazil, and it allowed

Table 1. Distribution of the Characteristics of the teachers

Traits	N	%
Teacher Performance		
Teacher	49	70
Pedagogue	21	30
Total	70	100
Bachelor Degree		
Pedagogy	59	84
Teacher Degree (education)	9	13
Others	2	3
Total	70	100
Grad Course		
Yes	26	37
No	44	63
Total	70	100
School kind		
Public	68	97
Public/Private	2	3
Total	70	100

that a higher number of teachers were trained, and as a consequence it made this research possible.

The program has five presentational meetings that were divided into 10 workshops modules (two per meeting). The meetings were scheduled previously with the SEDUC and the objective of the meetings was to train and instrumentalize the teachers regarding the oral and written language development, its alterations, and ways to stimulate the students on the teacher's performance. Each meeting was 4 hours long. This program had a total of 30 hours of formation, being divided into 20 hours of presentational activities and 10 hours of complementary assignments.

The SATTPT used the following methodological strategies: exposition open to a dialogue, teach-

ing cases, and workshops, as showed in Figure 1. The thematic axes' distribution of the SATTPT's modules was: Educational Speech Therapy, oral and written language (Appendix 2). For the first two, the researchers looked for introducing the Educational Speech Therapy concept and the hearing and oral language development. The thematic axis of written language approached the phonological conscience theme, and the alteration and development for oral and written language. The remaining two modules focused on workshops in which the teachers would practice a simulation of the students' communication skills' improvement. It would contemplate the teachings and learnings from the previous modules and thematic axes.

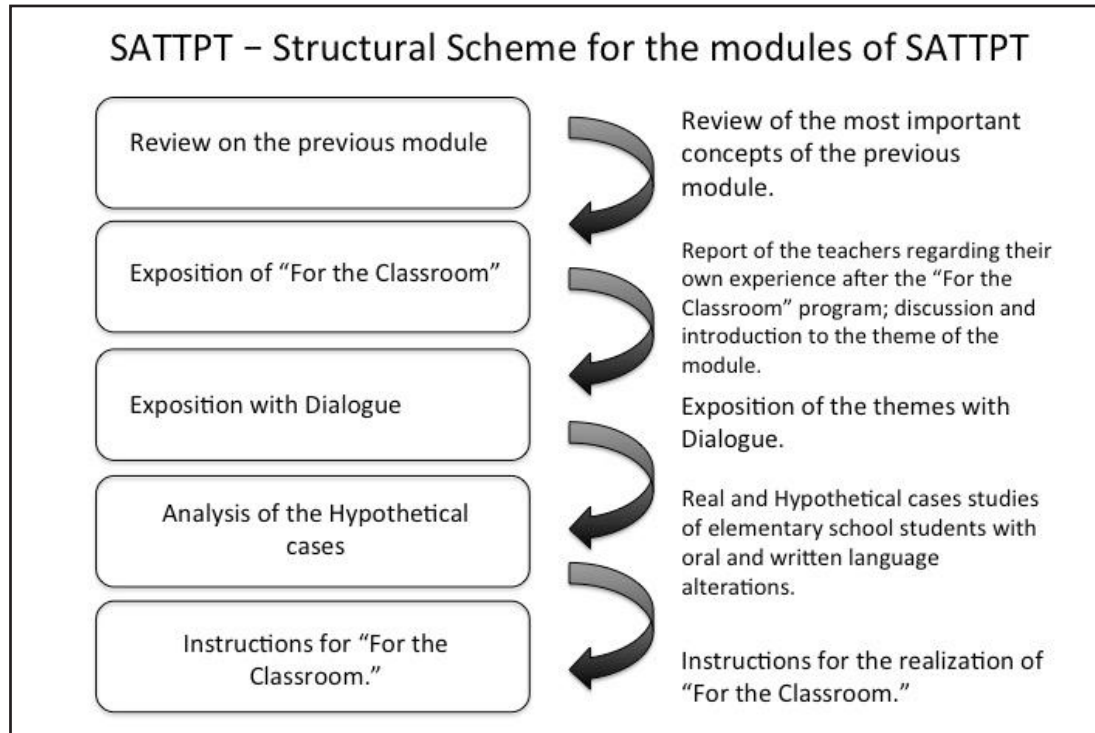


Figure 1. Structural Scheme for the modules of SATTPT

The teachers had to conclude the complementary assignments (that would require a total of 10 hours) a week after the meetings. The assignments were:

- *Reading of the relevant support material:* it was required from Module I of SATTPT. The support

materials were on the same theme of the subsequent module and there were required readings to serve as the basis for the discussions on the contents. The support material was made of papers, books chapter, and website articles. The selection of the support material was based on

the main theme, readability, and capacity of application of the content in the teacher's universe.

- *"For the Classroom"*: practical activities that the teachers participated during the week after each module. They were in-class activities with the students. The aim of "For the Classroom" was to encourage a new look from the teacher to the student and his or hers difficulties, and to help the teacher on the coming up with new strategies that will improve the students ability in a school environment.
- *Portfolio*: A thorough report on the activities that were developed on "For the Classroom" and a reflection essay on the participation on SATTPT.

The Portfolio assignment aimed on a critical analysis of the "For the Classroom" activities and to encourage a reflection from the teachers regarding their participation on SATTPT, and a survey on the pros and cons of the training program.

The venue for this program was the appropriate classroom, which was made available by SEDUC, in a capacitation and training venue for the city along the year. The training happened between the months of April, May and June of 2014.

Initially, the researcher handed the TLP to the participant teachers. The researcher would then read to them the header and the instructions that were in the TLP questionnaire. The teachers read the questions individually, and after they answered it, the researcher would gather the questionnaires. The average time spent to answer it was 25 minutes.

After this, the teachers were clarified on the aims and objectives of this research, its benefits, and its repercussions, as well as the volunteer aspect of the participation in the research, and they were all asked to sign the informed consent for participation in the study. This procedure of answering the questions prior to be clarified on the ethics aspects of this research was adopted, so that the contents would not be under the influence of information regarding the science of Speech Therapy. And this avoided possible interferences of it in the answers of the questionnaire. This procedure was previously approved by the Ethics Committee.

But the end of the program (module X), teachers were asked to answer again the TLP questionnaire.

The essay questions were analyzed in order to check the teacher's coherence of perception when

analyzing hypothetical situations. The essays were classified in "coherent" or "incoherent" to the hypothetical cases.

A speech therapist that is specialized in the area analyzed and reanalyzed 30% of the questionnaires, which were chosen randomly, in order to check the rate of confiability of the analysis. The concordance among the evaluators was 95%.

An Index for the Teachers' Perception (ITP) was created in order of a better comparison of the teacher's perception pre and post SATTPT. This index is expressed in percentage in order to qualify the answers of the teachers to the TLP:

- Oral Language Alterations Perception Index (OLAPI) – analysis of questions 1, 3, 4, and 5;
- Written Language Alterations Perception Index (WLAPI) – analysis of questions 6, 7, 9, and 10;
- Adequate Development Perception Index (ADPI) – analysis of questions 2 and 8;
- Global Perception Index (GPI) – analysis of all the questions.

The ITP's were analyzed in relation to the teacher's perception in each case. The following pointing system: 0 – marking the wrong answer or the letter D: "I don't know"; 1 – marking the right answer but with no coherence in the essay question; 3 – marking the write answer and coherence in the essay question.

The ITP's calculation considered the maximum score for the questions regarding oral language alterations, written language alterations, and adequate development. The maximum score was calculated taking in considerations the total of the sum of the thematic questions times 3 points in each index.

To calculate the ITP's the following formula was used:

$$ITP = \frac{\sum \text{points obtained in the thematic questions}}{\text{Maximum score of thematic questions}} \times 100$$

The calculus of the Global ITP's used the following formula:

$$GPI = \frac{\sum \text{questionnaire points}}{\text{maximum questionnaire score}} \times 100$$

A specific database was created to be used in this research in the SPSS 20.0 software. For the purpose of the descriptive data analysis, the central tendency and dispersion variables were analyzed. The data were checked previously and they were

treated adequately as necessary. To the statistical analysis, the Shapiro-Wilk of normality was used, and it showed as a result that the distribution is non-parametric. In the light of this, the Wilcoxon test was used with the significance level of 5% ($p \leq 0,05$).

Results

The mean and the standard deviation of the teacher's perception index analyzed pre and post SATTPT can be seen in Table 2. The perception indexes OLAPI, WLAPI, and GPI showed statistical significance when compared to pre and post participation on SATTPT.

Table 2. Index for Teacher's perception pre and post SATTPT

		Mean (SD ^(b))	Average of the difference	Value of p ^(a)
OLAPI ^(c)	Pre	39.7 (± 21.8)	24.8	p < 0.001
	Post	64.6 (± 20.7)		
WLAPI ^(d)	Pre	29.4 (± 26.1)	29.5	p < 0.001
	Post	58.9 (± 28.1)		
ADPI ^(e)	Pre	38.0 (± 25.8)	7.1	0.81
	Post	30.9 (± 28.4)		
GPI ^(f)	Pre	35.2 (± 16.7)	20.3	p < 0.001
	Post	55.6 (± 19.2)		

(a) Nonparametric Test (Wilcoxon)

(b) Standard Deviation

(c) Oral Language Alterations Perception Index

(d) Written Language Alterations Perception Index

(e) Adequate Development Perception Index

(f) Global Perception Index

Discussion

The present study sought to analyze the effectiveness of a program for training and formation of elementary school teachers regarding oral and written language. Although the SATTPT is partially effective in its objective, the program limitations relate to the workload (which is now 20 hours of presential workshops divided into five meetings) spent to the exposition, reflection, and workshops for a broad area, and to the fact that the training and formation of the teachers were of the hegemonic kind. Even though this is not the kind of continued formation that holds the higher rates²², the researchers agree that the hegemonic training formations are important for the sake of updating and deepening on the themes approached and it enables a reflexive and liberating posture front the reality of the school context²³. One other limiting factor of the present study is the absence of the consolidation verification of the content through learning process evaluation subsequently the learning moment in which the teacher would, indeed, apply his/ her knowledge acquired during the workshops.

The results regarding the thematic line of Adequate Development reinforce the need of change on the way the content is redistributed. Probably it is necessary an increase on the workload that is dedicated to the standard language development.

The finds show an increase on the teacher's perception regarding oral language, which corroborates previous studies on training kindergarten teachers^{6,13}. The relationships of the educator and early childhood educator (which is the common diploma of the participant teachers) with the oral language contents is grounded on their initial academic formation²⁴ and in their teaching practice²⁵.

The early stages of written language development (literacy) are integral part of the content of the Pedagogy diploma²⁶. However, specific content regarding written language development and alterations are not part of the course, which is to say there is a high lack of knowledge regarding this theme among the teachers who took the Pedagogy courses only. The present study, the thematic axis of written language showed higher percentage difference on the ITP pre and post formation training course. It is important to highlight that the SATTPT was effective and this shows how the training forma-

tion focused on this theme changes the approach and praxis of the teachers front the students' difficulties¹⁶. This change on the teachers' praxis and perception is measured by WLAPI and it is justified by the methodology the program used. The teaching cases used in the modules IV, V, and VI sensitized a higher number of teachers, who were able to identify their own cases and students difficulties on the cases and realized which praxis are favourable and unfavourable to help the students.

The ADPI showed little variation pre and post training formation program, with no statistic variance, showing that the program was not effective on raising awareness among teachers regarding the standard language development. It is noticeable an inclination from the teachers to notice problems in students with standard language development²⁷. This behaviour can even be evaluated as a teacher's escape to the students' difficulties, therefore requiring no change of posture from them in classrooms. Thus, the referral conduct is the normal choice as the ideal solution to the students' difficulties²⁸. On the other hand, the discussion on the fact that there was a tendency in the SATTPT to influence the teachers on this kind of conduct, because the literature points out that the health professionals tend to focus on the alterations and not on the standard behaviour when dealing with education professionals²⁷. Moreover, the instrument used prioritises the teacher's knowledge analysis over the altered development, given that there are not so many questions on the theme of standard development.

This result highlights the need to expand the discussion with the elementary school teachers regarding the standard development of language, from their early formation in Pedagogy. It is believed that a teacher with a good knowledge on the standard language development and its relations with learning can promote such development in the classroom, and as a consequence will promote education. Moreover, the teacher becomes sensitive to the variations that are not expected from the student during the development, which will contribute to the early diagnosis and intervention. In future studies with the SATTPT such adjustments should be made.

The GPI change after the training program should be attributed to many factors, including the group interest on the theme, since they looked after the training program spontaneously. The teachers kept their participation even during the teachers'

strike in the city and they were very dedicated to the assignments. The themes that the SATTPT approaches are of utmost importance to the teacher praxis¹⁷. However, it is highlighted that the content should be explored by the health professionals in many different spheres of education; making possible the spread of information which, when it is not contemplated in the early stages of formation should be explored in the teachers continued education²⁹.

On what is regarded as public policy, the Health and Education Minister incentivizes the practice of health education in school and this can happen through the institution called Health Education in School Program (HESP)³⁰. Article 5th paragraph III of this decree exposes that to execute the HESP it is necessary the formulation of propositions on training and formation of professionals of education. In this context, the desired outcome for the participation on the SATTPT is in the development of preventive actions in the school environment, with emphasis on the promotion of early childhood language development. Another favourable outcome is regarding the early diagnosis of oral and written language alterations and referral, as well as the adaptation of the school environment to become favourable to these children learning process. Furthermore, actions such as SATTPT, in a way or the other, help on the fight to eradicate vulnerability, from the perspective of the health field, which might compromise the full school development³⁰.

Conclusion

The teacher's perception over the oral and written language development aspects changed in a significant way after their participation in the SATTPT.

The present study shows the program relevancy for the elementary school teachers with effective change on their perception facing cases of alteration of oral and written language. This alteration perception can be on the early stages, thus highly important on the student's global development.

However, future studies with SATTPT should offer to mentor the teacher during this process for at least six months. The program workload should be increased and there should have more meetings. The "For the Classroom" assignment should be better explored, as a way of verifying the teacher's learning process.

The perspectives of the Speech Therapy performance on the training of teachers are wide and they should aim to a higher adherence from the target audience. Moreover, perhaps the venue of the formation course should be the teacher's school - Central Formation – which would bring a higher acceptance from the teachers, and should make a mentoring program possible, meaning that the evaluation of the effects of the training program would be more visible to the researchers.

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APPENDIX

Appendix 1 – TLP ADAPTED

TEACHER'S LANGUAGE PERCEPTION QUESTIONNAIRE - TLP

Name: _____
Age: _____ Job: _____ Bachelor: _____
Graduation: _____ Kind of school you work: () public () private
Time as a teacher: _____ Date: __/__/____

We would like to know the teacher's performance in different day-to-day situations. We believe the teacher is the basis for a good education and the teacher is imperative for the good education process. This questionnaire does not intend to measure how much you know, but it intends to raise themes to be approached in future training, that will be designed for you. Instructions: You must read the question and mark one of the alternatives, the following question is free (i.e. essay question).

Question	Choose one:			
1) LM, 7 y/o, male, on grade 2. He wanted to say: "I want to buy a drum set" ("eu quero comprar uma bateria"), but instead he said: "I want to buy a dlum set" ("eu quero comprar uma batelia").	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
2) CP, 6 y/o, female, on the literacy process, grade 1. When trying to write: "I like hot dogs" ("gosto de cachorro quente"), wrote instead: "I likes hot doggy" ("gostu di caxoru centi").	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
3) JT, 13 y/o, male, grade 5. When trying to say: "the cat ate the food" ("o gato comeu a comida") said instead: "The c c ca ca cat a a ate th th the foo foo foo food" ("u ga ga ga gatu cu cu cu comeu a cu cu cu cu cu mida").	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know..
What led you to choose this answer?				
4) VO, 8 y/o, female, grade 2. When trying to say: "yesterday we ate the avocado that I brought to school" ("Ontem nós comemos abacate que eu levei pra escola") said instead: "Tomorrow we ates the avocado that I brought to schools" ("Amanhã nós comeu abacate que eu trazi pra escola").	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
5) JN, 8 y/o, female, grade 1. When trying to say: "I need scissors" ("Eu preciso de uma tesoura"), said instead: "I need that thing that cuts" ("Eu preciso daquilo que corta").	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				

Question	Choose one:			
6) LC, 9 y/o, male, grade 4. He has a slow and non-paced reading, and the textual interpretation is inadequate.	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know..
What led you to choose this answer?				
7) MA, 15 y/o, male, grade 9. He is an extroverted, outgoing, likes to participate in classes' group activities. When these activities involve rithm, he shows difficulties. He shows difficulties with punctuation, accentuation, and stress syllable perception.	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
8) RG, 8 y/o, female, grade 3. She is shy and does not speak much, and speaks slowly. She does not enjoy group activities in class. She shows difficulties in understand speech in midst of loud noise.	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
9) BD, 9 y/o, female, grade 2. When in a dictation class, she was asked to write the following: "The frog is not in the trap" ("todo fósforo é perigoso"). She wrote: "Dhe vrog is nod in dhe drap" ("dodo vósvoro é berigoso")	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				
10) SL, 9 y/o, male, grade 2. When trying to write in his journal: "I've always wanted a little sister and today my dream came true.... Today I went to autie Debora's graduation, and do you know where I went next? To a Japanese Restaurant," ("Eu sempre quis uma irmãzinha e meu sonho se realizou...Hoje eu fui à formatura da tia Débora, e sabe onde fui depois? Fui ao restaurante japonês!") wrote instead: "I walwys wants a little sizter and twoday my dreamcame true, you know, I went to autie Debr's graduation and and do you know where I went after I went to the restauramt from Japam. ("eu cempre cis uma irmanzinha e meu sonhose realizou sabe eu oji fui na formatura da tia debura e e sabe onde eu fui depois eu fui no restauramte do japao")	The student has normal development	The student shows light difficulties that he or she will overcome with time	The student has a development problem	I don't know.
What led you to choose this answer?				

Appendix 2 - Thematic draft of sattpt's modules

Speech and Audiology Therapy Training Program for Teachers	
1st module Thematic Axis of Educational Phonoaudiology: <ul style="list-style-type: none"> ▪ Educational Phonoaudiology ▪ Relationship Teacher and Speech Therapist ▪ SATTPT's proposition ▪ Explanation of Portfolio and Journal 	6th Module Thematic Axis: Written Language <ul style="list-style-type: none"> ▪ Reading ▪ Phonological Route - Lexical Route ▪ Reading changes
2nd Module Thematic Axis: Oral Language <ul style="list-style-type: none"> ▪ Hearing Development ▪ Oral Language Development 	7th Module Thematic Axis: Written Language <ul style="list-style-type: none"> ▪ The speech therapist and the Curricula School Program ▪ Referral Conduct
3rd Module Thematic Axis: Oral Language <ul style="list-style-type: none"> ▪ Oral Language Alterations ▪ Phonetic Deviation vs. Phonological Deviation ▪ Stuttering 	8th Module Thematic Axis: Written Language <ul style="list-style-type: none"> ▪ Revisiting Conducts / Teacher's praxis ▪ How to create a referral report?
4th Module Thematic Axis: Transition from Oral Language to Written Language <ul style="list-style-type: none"> ▪ Oral Language - Written Language ▪ Phonological awareness ▪ Oral Language Alterations vs. Interference on Written Language 	9th Module <ul style="list-style-type: none"> ▪ Improvement of linguistics abilities in school environment workshops.
5th Module Thematic Axis: Written Language <ul style="list-style-type: none"> ▪ Written Language Development ▪ Alterations in the Written Language ▪ Exploring the hearing abilities in a school environment 	10th Module <ul style="list-style-type: none"> ▪ Continuation of the improvement of abilities workshops (see module 9) ▪ Motivational Workshops "The Role of the Teacher." ▪ Submission of the Portfolio and Journal