Training of early childhood teachers for the use of successful shared reading strategies

Capacitação de professores do ensino infantil para o uso de estratégias bem-sucedidas de leitura compartilhada

ABSTRACT

Purpose: Verify the effects of a training program held with pre-school teachers to carry out specific strategies in shared reading and generalize these strategies in other daily activities of oral language motivation. Methods: A total of 14 teachers from low socioeconomic level schools participated in the study. The teachers were randomly distributed in an experimental group and a control group. The experimental group attended training on how to use five strategies during shared reading in the classroom and discuss how to motivate their students towards oral language. To evaluate the effectiveness of training, two instruments were applied pre- and post-intervention. The Assessment Scale of Oral Language Teaching in School (EVALEO) was applied to analyze the teaching of oral language and the Checklist was used to characterize the behavioral changes of the teachers during shared reading. Results: Overall, EVALEO data were higher at post-intervention analysis for 11 of the 13 participants. Checklist showed that 10 of the 13 teachers presented higher post-intervention total scores compared with their respective pre-intervention scores. Conclusion: The training program provided improvement in teacher behavior during shared reading activities and demonstrated to have a positive impact on the increase of interactions, previously identified in the literature as important for oral language motivation.

RESUMO

Objetivo: Verificar os efeitos de uma capacitação realizada com professores do ensino infantil para a realização de estratégias específicas na leitura compartilhada e a generalização dessas estratégias em outras atividades cotidianas de estimulação da linguagem oral. Método: Participaram do estudo 14 professores do ensino infantil de escolas de nível socioeconômico baixo. Os professores foram distribuídos aleatoriamente entre grupo experimental e grupo controle. O grupo experimental realizou uma capacitação, a qual tinha o objetivo de ensinar os professores a utilizarem cinco estratégias durante a leitura compartilhada com seus alunos e discutir sobre como estimular a linguagem oral. Para avaliar a eficácia da capacitação, foram aplicados dois instrumentos antes e após a intervenção. A escala de avaliação do ensino de linguagem oral em contexto escolar (EVALEO) foi aplicada para analisar a estimulação da linguagem oral e o Checklist para caracterizar as mudanças comportamentais dos professores durante a leitura compartilhada. Resultados: No geral, observa-se que os dados da EVALEO foram mais elevados na análise pós-intervenção para 11 dos 13 participantes. Nota-se por meio do Checklist que, dos 13 professores, 10 apresentaram um total de pontos maior quando comparado com os pontos obtidos por cada um deles antes da capacitação. Conclusão: A capacitação apresentou melhorias no comportamento dos professores durante as atividades de leitura compartilhada e demonstrou ter impacto positivo no aumento de interações, previamente apontadas pela literatura como importantes para a estimulação da linguagem oral.
INTRODUCTION

The authors Farrant and Zubrick(1) point out that reading is an occasion for conversation between adults and children, both at school and at home, and has been positively related to the promotion of children’s repertoire. This interaction provides broadening of vocabulary, expressive language and story comprehension, including with children in socioeconomically disadvantaged areas(3). In this context, an important issue that has been discussed by the area is the existence of strategies which can be considered effective at the time of reading to promote children’s oral language.

Reading aloud involves the interaction of at least three components: the book, the reader, and the listener. With regard to reader behavior, the Institute of Education Sciences(2) states that shared reading, in which an adult reads a book to a child or group of children using one or more structured interaction strategies to activate the child’s engagement in the text presents numerous gains for the development of children’s oral language. The characteristics that make it peculiar are: 1) the use of evocative response strategies, such as presenting questions initiated by why, when, who and where; 2) asking questions that lead the child to make connections between aspects of the story and his experience; 3) the provision of contingent feedback on children’s verbalizations (eg repetition of model responses, expansion of children’s responses); 4) gradual increase of the complexity of the questions, as the child’s repertoire expands(3,4).

There is convergence about the importance of performing shared reading for the promotion of children’s oral language and about the importance of oral language, especially vocabulary, for the development of written language(5,6,7). On the other hand, some gaps are mapped, especially as regards the minimum and sufficient conditions for successful shared reading programs to be implemented(8).

In order to assess the impact of shared reading on the development of children in natural environments, it must first be ensured that it is taking place as recommended by scientific evidence(9). Therefore, it is necessary to propose and evaluate programs of teacher education for the realization of the strategies that characterize the shared reading. In addition, investigations about the role of introducing shared reading strategies on other activities performed by teachers with children, stimulating oral language, would be of great value for understanding the potential of training programs implemented in the school environment.

In this sense, Gracia et al.(9) present the EVALOE instrument. The aim of this is to evaluate how teachers facilitate the development of oral language, in two contexts: 1) observation scale (to be performed in the classroom); and 2) semi-structured interview (to be conducted with the teacher after observation). In addition, the instrument can also be used to investigate possible behavioral changes before and after training involving oral language intervention strategies.

The relevant aspects that influenced the programming of this study were: 1) existence of an instrument such as EVALOE; 2) proof of the great learning potential of children attending kindergarten; 3) the need to structure simple and inexpensive procedures based on scientific evidence that may have relevant language impacts and applicable to school routine, such as shared reading strategies; 4) the need to seek advances in proposing and assessing the impact and applicability of oral language intervention proposals in the classroom. In this sense, the present study verified the effects of a training carried out with preschool teachers to carry out specific strategies in shared reading and the generalization of these strategies in other daily oral language stimulation activities.

METHODS

The proposed study was submitted and accepted by the Ethics Committee of the Federal University of São Carlos-SP (CAAE 55340016.0.0000.5504). The adopted design was the pre and post-test combined with the comparison of data obtained between groups (experimental and control) in these two moments (before and after the intervention). The independent variable was the training performed with the teachers. The dependent variable was measured by applying the Checklist and EVALOE.

Thus, it consisted of a proposal to analyze the strategies for oral language stimulation used by the teacher during the classes and, specifically, the use of strategies that were part of the training performed.

The study included 14 teachers who taught in kindergarten of public schools, located in regions with low socioeconomic level in the city of São Carlos-SP. First, contact was made directly with two schools, which showed interest in participating in the study. With this, the researcher gave a lecture, in each school, to all the teachers of the morning and afternoon, in order to explain how the study would take place and invite them to participate. The selection of teachers was based on their interest in participating in the study. From each school, seven teachers became interested. At the end of the lecture, the interested teachers signed the Informed Consent Form (ICF). Subsequently, contact was made with the parents or guardians of all the children who attended the classroom of each participating teacher. A questionnaire on the socioeconomic status of the families was applied and, as a result, it was found that most families received less than six minimum wages, thus characterizing the low socioeconomic status. Then, it was explained to those responsible about the operation of the research, the proposed intervention and collected the signatures in terms of: IFC and use of image and sound of voice. Finally, the first contact was made with all classes of the participating teachers. It was explained to the students (totaling 280 children) how the study would take place and each child signed the Minor Consent Term (MCT).

The teachers and their classes were randomly divided into experimental group and control group. The teachers participating in the experimental group were named as EP1 (experimental participant 1), EP2 (experimental participant 2), EP3 (experimental participant 3), EP4 (experimental participant 4), EP5 (experimental participant 5), EP6 (experimental participant 6), and EP7 (experimental participant 7). Control group teachers were named as CP1 (control participant 1), CP2 (control participant 2), CP3 (control participant 3), CP4 (control participant 4), CP5 (control participant 5), CP6 (control participant 6) and CP7.
(control participant 7). The study took place in seven stages, explained in Table 1 and described below.

The Stage 1 consisted of pre-test 1 for both the experimental and control groups. Participating teachers were asked to shoot while reading books to their students in the classroom. During the shoot, the researcher applied the first part of the EV ALOE scale. With the use of this instrument, it intended to evaluate and advise educators so that they could easily identify the necessary changes in the development of their students’ important speech and listening skills.

The EV ALOE was built to evaluate the context of the Spanish regular school, but it was translated and adapted for use in the special and Brazilian schools, proving to be valid and useful in both realities\(^{10,11}\). In this study, the translated version\(^{11}\) and the first part of the scale were used. The first part is a 30-item observational measure that assesses the communicative interaction between students and teachers in three dimensions: 1) context and management of oral communication; 2) instructional design; 3) communicative strategies.

After the Step 1, Step 2 was performed which contemplated the application of training only with the teachers of the experimental group. The training was adapted from Colmar’s original study\(^{12}\) and carried out in two sessions. Each session lasted a maximum of 90 minutes. The researcher conducted the training individually with each teacher. Table 2 shows the outline of each of the proposed activities and the objectives for the two training sessions with teachers.

In Step 2, we used the Checklist, built by the researcher without reference base. The instrument was closed, multiple choice and answered in writing by the teacher. The purpose of the checklist was for the teacher to evaluate their behavior regarding the use of the five strategies taught in the training during the reading activities shared with their students. The five strategies were: 1) pausing each page of the book, allowing the child to choose the topic of interest before reading begins; 2) stimulate shift exchange in conversations; 3) ask open questions about the topics brought by the children; 4) talk about the meaning of some important words for the understanding of the story; 5) Resume the conversation about the book at other times of the day. For each strategy, the teacher scored the episode using the following scale: 0) never; 1) very little (approximately less than 10% of story time); 2) little (about ¼ of the story time); 3) more or less (in about half the story time); 4) quite (almost all the time); 5) always.

In the first training session, each teacher watched the video “New School in your school - Reading Wheel”\(^{13}\). The video was produced by the New School Association and discusses how to work texts, languages and figures during a reading wheel for kindergarten. Later, through the Checklist, the five strategies used during shared reading to promote children’s communicative skills were presented and discussed. Following, the video of the participating teacher was used, which was filmed in the pretest. Each teacher was asked to share his or her own experience of how they performed their reading activities and how they worked on this episode to encourage children’s oral language. After the discussion, the teacher completed the Checklist regarding his first watched video. At the end of the first training session, the teacher had asked to do a shared reading of a book of his choice in the classroom and put into practice the five strategies discussed. The researcher provided cameras for the teacher to film this moment of shared reading with his students.

**Table 1. Procedure steps**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-test 1 experimental group and control group</td>
</tr>
<tr>
<td>2</td>
<td>Training experimental group</td>
</tr>
<tr>
<td>3</td>
<td>Intervention experimental group</td>
</tr>
<tr>
<td>4</td>
<td>Post-test experimental group Pre-test 2 control group</td>
</tr>
<tr>
<td>5</td>
<td>Follow-up 1 experimental group Pre-test 3 control group</td>
</tr>
<tr>
<td>6</td>
<td>Training control group</td>
</tr>
<tr>
<td>7</td>
<td>Post-test control group</td>
</tr>
<tr>
<td>8</td>
<td>Follow-up 2 experimental group</td>
</tr>
</tbody>
</table>

**Caption:** The table refers to the steps of the procedure. In the first column, the steps are described and, in the second column, what kind the activities were performed.

**Table 2. Scheme of each of the proposed activities and the objectives for the two days of teacher’s training**

<table>
<thead>
<tr>
<th>Training</th>
<th>Section 1</th>
<th>Section 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed activities</td>
<td>1) watch video (internet); 2) discuss the five strategies; 3) use the Checklist (score the internet video); 4) watch the own video (recorded as pre-test) 5) use the Checklist (score the own video)</td>
<td>1) watch the video filmed the week after session 1 (the teacher’s classroom); 2) use the Checklist (score the own video after the first day of training)</td>
</tr>
<tr>
<td>Objective</td>
<td>Know the five strategies proposed in the work</td>
<td>Discuss the difficulties and propose alternatives for using the five strategies</td>
</tr>
<tr>
<td>Suggested the Classroom Activities</td>
<td>1) 1) put into practice the five strategies in a reading episode; 2) to shoot</td>
<td>1) 1) put into practice the five strategies in daily reading episodes; 2) register in the agenda</td>
</tr>
<tr>
<td>Objective</td>
<td>Try the use of the five strategies discussed; get video record</td>
<td>Classroom Intervention</td>
</tr>
</tbody>
</table>

**Caption:** The table refers to the scheme of how the training was performed. The second column describes the activities performed and the objectives proposed with them in session 1. In the third column, the activities performed and the objectives proposed with them in session 2 are described.
At the beginning of the second session, the video that the teacher shot after the first training session had watched. Each teacher filled out the Checklist for the second time to review and discuss with her researcher about her experience using the five strategies during shared reading. In addition, it was also discussed about children’s engagement in conversation activities, in the other words, how much they understood the story read, how well the five strategies discussed on the first day could or might not be put into practice on a daily basis, what difficulties they saw in doing this. At the end of the second session, teachers was asked to read a book of their choice daily for the entire class. Teachers instructed to put into practice the five strategies discussed in the training. The intervention period started only with the teachers of the experimental group and lasted approximately two months. The teachers in the control group continued their activities in the same way as they already did before participating in the study.

During the intervention (Step 3), the researcher visited each participating teacher in the experimental group three times, provided feedback on the teacher’s performance and discussed the doubts and difficulties they had in executing the five strategies. If in doubt, the researcher performed a roleplaying with the children, reading a book, chosen by the teacher, and putting the five strategies into practice so that the teacher could observe how to use them during shared reading with their students.

At the end of the intervention, Step 4 started. In this case, the post-test was applied to the experimental group and the pre-test 2 to the control group. New filming was performed with the same pattern as in Step 1 at the end of the intervention with the intervention group (experimental group) and the non-intervention group (control group). The data were analyzed again using EVALOEO.

One month after the application of the posttest with the experimental group, Step 5 was performed, that is, follow-up 1 for the experimental group and pretest 3 for the control group. The researcher repeated the filming and application of the first part of EVALOEO with teachers from the experimental group (this data was analyzed as a follow-up measure for the experimental group) and the control group.

After Stage 5, Stage 6 was held, where the control group teachers participated in the training, following the same structure as the experimental group teachers. When the control group teachers completed the training, EVALOEO was reapplied after one week (this group’s post-test - Step 7). After four months of follow-up 1, follow-up 2 (Step 8) was performed with the available participating teachers in the experimental group. Contact was made with the teachers and a day was scheduled to apply the third part of the Checklist and the first part of EVALOEO. In the results section, these teachers are named as EP1, EP2 and EP3.

RESULTS

Data were counted and analyzed one by one, comparing the results of the experimental and control groups, before and after training. No statistical analyzes were performed. The difference in the number of measurements taken before and after for each of the groups was due to two reasons: 1) simultaneous measurements to analyze any changes that occurred in the groups as a function of time; 2) possibility of completion of data collection at the time of the school year, keeping teachers with the same group of students avoiding interference related to the group profile. The data from the three applications of the Checklist, used in the two training moments, which the teacher answered individually as a self-assessment, aimed to show if the teachers started to use the five strategies during shared reading, over time. The analysis of the data obtained through EVALOEO, which was applied by the researcher to analyze the filming performed by the teachers, allowed us to verify if the training produced measurable effects on the way the teacher stimulated oral language in the classroom. Regarding these measures, data from 13 teachers were analyzed. The teacher CP7 moved from city and could not finish the study with him.

The purpose of the Checklist was to evaluate teachers’ behavior regarding the use of the five specific strategies (training target) during shared reading episodes, before and after training. The data presented in Figure 1 are from the teachers of the experimental group (EP) and those in Figure 2 are from the teachers of the control group (CP). These data were obtained from the observation of the filming of the shared reading that the teachers performed with their students at different times.

It observed that 10 of the 13 teachers presented, in the Checklist, a higher total of points after the training, when compared to the points obtained by each one before the training. The average difference of points, comparing pre and post-test, was 6.6, and the smallest difference was observed in Teacher CP3 Checklist (2 points) and the largest difference in teacher EP1 (13 points).

In addition, through the data obtained from the Checklist, it was possible quantitatively analyze which strategies and how many teachers used them before and after training. In Figure 3, we find these data.

It is observed that there was an increase for strategies that teachers used after training. Some strategies were more used by

![Figure 1. Total points from the analysis of the Checklists applied to the teachers of the experimental group (EP) before and after the training. In the x-axis, there is the teachers’ appointment and the y-axis shows the total points that the teachers obtained in the responses of each episode evaluated. The acronyms used are: EP1 (experimental participant 1), EP2 (experimental participant 2), EP3 (experimental participant 3), EP4 (experimental participant 4), EP5 (experimental participant 5), EP6 (experimental participant 6) and EP7 (experimental participant 7)](image-url)
teachers before the training. More teachers in shared classroom reading than the other four strategies already used the “pause each page of the book, allowing the child to choose the topic of interest before reading” strategy. On the other hand, the strategy that was used by more teachers after the training was number four (“talk about the meaning of some important words for the comprehension of the text”).

The purpose of EVALOE’s application was to evaluate how teachers facilitated the development of oral language. This instrument was not a direct focus of the training performed in the present study regarding a series of other strategies and items validated by it as important items in the promotion of oral language in the classroom. EVALOE was applied at four different times with each group. Figure 4 shows the teachers’ data from the experimental group (EP) and Figure 5 shows the data from the control group (CP).

Overall, EVALOE data were higher in the post-intervention analysis for 11 of the 13 participants, six from the experimental group and five from the control group. Increases in teacher response averages EP4, EP2, and EP5 are small and can be attributed to changes in one or two items of the instrument.

In addition to analyzing the means of EVALOE responses, it was possible to observe in which items the teachers improved after training and throughout the study. It is noted that over 50% of teachers scored higher on the items of the “Communication context and management” and “Communicative functions and strategies” subscales.

In the “Communication context and management” subscale, higher scores were obtained on the items: “teaching students to initiate communicative interactions” and “enabling students to take turns”.

Figure 2. Total points from the Checklist analyzes applied to the control group (CP) teachers before and after the training. In the x-axis, there is the teachers’ appointment and the y-axis shows the total points that the teachers obtained in the responses of each episode evaluated. The acronyms used correspond to: CP1 (control participant 1), CP2 (control participant 2), CP3 (control participant 3), CP5 (control participant 5), CP6 (control participant 6) and CP7 (control participant).

Figure 3. Number of teachers from both groups who used the five strategies before and after training. The strategies were: 1. Take breaks; 2. Encourage shift exchange in conversations; 3. Ask open questions; 4. Talk about the meaning of some words; 5. Resume the conversation about the book at other times of the day. On the x-axis are the strategies and on the y-axis the total of teachers who used each strategy. Numbers 1, 2, 3, 4 and 5 are referencing the five strategies.

Figure 4. EVALOE points from the analysis of the filming of the experimental group (EP) teachers before and after the training. On the x-axis is the teacher’s appointment and the y-axis shows the sum of the answers for the three EVALOE subscales. The white bars represent the pre-test data and the black bars the post-test data. Grayscale bars indicate follow-up measurements. The acronyms used are: EP1 (experimental participant 1), EP2 (experimental participant 2), EP3 (experimental participant 3), EP4 (experimental participant 4), EP5 (experimental participant 5), EP6 (experimental participant 6) and EP7 (experimental participant 7).

Figure 5. EVALOE points obtained from the analysis of the filming of the control group (CP) teachers before and after the training. On the x-axis is the teacher’s appointment and the y-axis shows the sum of the answers for the three EVALOE subscales. The white bars represent the pretest data and the black bars represent the posttest data. Grayscale bars indicate additional pretest measurements (control group). The acronyms used correspond to CP1 (control participant 1), CP2 (control participant 2), CP3 (control participant 3), CP4 (control participant 4), CP5 (control participant 5) and CP6 (control participant 6).
In the subscale “Instructional Design”, more attempts were made to systematically teach the following items: “to specify the necessary prior knowledge related to the activity proposed in his speech”, “to propose activities that allow the objectives to be worked out in oral language” and “to evaluate the students’ oral language skills”.

In the subscale “Communicative Functions and Strategies”, teachers worked best on the items that included: “teaching how to give information”, “giving information to their students”, “teaching how to synthesize or draw conclusions after classroom discussions”, “Teach students how to synthesize or draw conclusions”, “teacher make explicit students’ non-understandable statements” and “teacher positively evaluate student statements”.

The repeated measurements that were performed with the control group suggest that the observed changes are probably unrelated to the passage of time and the time of the school year, in which the observations were made, except, perhaps, of teacher CP4, whose scores have been steadily increasing over time even before any training or intervention. The data from other teachers remained stable over time and increased only after training. Regarding the data from the experimental group, the follow-up measures allowed us to analyze that the changes found after five of the seven participating teachers maintained the intervention.

**DISCUSSION**

This study verified the effects of a training carried out with preschool teachers aiming at the use of specific strategies during shared reading and their impact on activities that aim to stimulate the oral language by the teacher in the classroom.

The data obtained by the Checklist, which sought information on the use of five of the proposed strategies, summarized in Figures 1 and 2, show that the training had an impact on teachers’ behavior during shared reading activities in the classroom. The statement is because strategies, which are pointed out by the literature as important for the actual use of shared reading activities\(^7\), increased their frequency of occurrence and others began to occur after training. These data corroborate studies that point out the importance of continuing education for teachers, and continuously presenting scientific findings in a systematic and naturalistic way for professionals who have direct and continuous contact with children in the early stage of language acquisition and development which can apply and transform into social gain scientific knowledge resulting from numerous intellectual and financial efforts\(^8\).

The performance based on scientific evidence in an educational context presupposes a translation and operationalization of research findings, sometimes basic, sometimes experimental, for situations in which new variables can be found and taken into account. Therefore, the joint work of researchers and education professionals becomes fruitful\(^9\). Some studies have shown that the organization of procedures that really allow the education professional to be under control of the important variables for the success of the activity. It is crucial. Otherwise, they will apply the activities and will not achieve the same results as those obtained when the researchers performed the activities attentive to the specific variables\(^7,15\).

The knowledge provided by previous studies, which have addressed the problems and objectives that the teacher faces daily and the consequent offer of created possibilities of action, measurement and analysis, allows the teacher to glimpse alternatives to practical situations for the students, which often do not see success. The concern with offering alternatives to the teacher, which are highly likely to be successful, comes from findings in the literature on teachers’ illness. These studies point to the existence of health alterations such as vocal, musculoskeletal problems and, in particular, related to stress, emotional exhaustion and Burnout syndrome. This finding has been explained in many ways and one is that professionals do not always slowly observe or perceive behavioral and learning changes in their students, which often leads to a sense of incompetence and frustration\(^16,17\).

The ability to perform activities that stimulate all children, regardless of their personal characteristics, with the security of performing previously prepared and evaluated procedures, can facilitate the work and allow individual gains in students, reducing anxiety and feelings of insecurity from the teacher. In this sense, it was observed in this study that some teachers already performed strategies and there was an increase in the number of teachers who began to use them (“pause”, “mean”, “contextualize”). There was also an increase in the frequency of use of strategies, which allows us to infer that the procedure brings gains in guiding the doing and leading the teacher to act under the control of variables presented as important in previous studies, thus favoring their gains and its safety in the application of the procedure.

In addition, it is important to note that the data obtained through the EVALOE instrument strengthen the reflections presented above. The teachers in both groups increased the number of actions guided by proposals advocated in the literature from the training, evidenced in the post-tests of both groups (experimental and control). In analyzing the records of the four applications, it is clear that the teacher generalized the five strategies discussed in the training as important to be performed in shared reading to other contexts of oral language stimulation.

The evaluation performed by the EVALOE instrument allowed us to investigate whether the teacher really understood what the relevant aspect of each strategy was (by generalizing and using it in other contexts) or whether it was performing the strategy mechanically, specifically throughout the reading, as discussed with the researcher in the training. Thus, the data revealed by EVALOE in the follow-up of the experimental group (increasing the number of interactions designed as stimulators for five out of seven participants) are extremely important to infer that the training was useful in order to provide reflection about the relevant aspects that teachers should pay attention to and foster in interactions with children. According to Grácio et al.\(^9\), although there are several instruments that aim to evaluate the interaction between teachers and students in the classroom, they are not sensitive to some fundamental aspects for the development of oral language. Thus, the data obtained in the study using the EVALOE scale showed how sensitive
it is to assess teacher and student interaction and how much it improved this interaction.

Despite the contributions of this study, a limitation to the generality of the data regarding the applicability of training is the fact that it occurred specifically with preschool teachers. The suggestion would be to expand data collection and apply training for elementary school teachers, in which students who are already beginning to follow the text as literate readers can also perform shared reading situations. This is because the literature presents shared reading also important for the development of reading comprehension, being one of the objectives of Elementary School\cite{13,16}.

CONCLUSION

The qualification for kindergarten teachers proposed by this study proved adequate and with a positive impact on the increase of interactions previously mentioned in the literature as important for the stimulation of oral language, both in specific situations related to the training activities and in other activities performed by the teachers during the classes.

REFERENCES


3. Camelo ML, Souza CBA. Leitura dialógica, consciência fonológica e o desenvolvimento de repertórios verbais. Sobre Comportamento e Cognição. 2009;24:159-68.


Authors contributions

ARSM participated in the study design, data collection, analysis and interpretation and writing of the article; CD participated in the conception, orientation of the study and writing of the article; ARSM participated in the conception, orientation of the study and writing of the article.