Analysis of oral narratives of preschool children before and after language stimulation

ABSTRACT

Purpose: To verify the oral narrative abilities in preschoolers, before and after language stimulation. Methods: Participants were 58 preschoolers. The study was developed in three stages: 1. Pre-stimulation stage (Moment 1) – preschoolers produced the first autonomous narrative based on a sequence of pictures, and the second under adult scaffolding; 2. Stimulation stage – it was conducted a weekly reading of children’s stories in group, for ten weeks; 3. Post-stimulation stage (Moment 2): the same procedure of the first stage was repeated. The results analysis considered: the occurrence of central and secondary events; the accountable/explicable conduct, classified according to physical causes, moral/social rules and internal state; the attribution and rectification of false beliefs, analyzed by the internal state’s accountable/explicable conduct. Results: There was an increase in the occurrence of central events in Moment 2 as well as after the adult scaffolding, with decrease of secondary events comparing both moments and after the scaffolding. Regarding the accountable/explicable conduct, no differences were found between physical, social/moral rules, and internal state conducts. The internal state accountable/explicable conduct was predominantly found in all the autonomous narratives. Conclusion: Both the reading of children’s stories and the adult scaffolding contribute to the increase in the occurrence of events in autonomous narratives. There is no variation on the type of accountable/explicable conduct in the narratives. The internal state accountable/explicable conduct is predominantly used by preschoolers.

RESUMO

INTRODUCTION

Oral language begins to develop at birth. Since then, children are exposed to the oral code and gradually become familiar with the sounds of their language, then produce them functionally through speech. Among the skills children have to master the oral language, one of the most significant is to narrate events. The child begins to relate their experiences to make the sequence of words and acquire perception of temporal events. This skill improves and the child is going to recount stories and create fictional characters and settings, exploring its imagination(1).

Reading children’s stories can be used as a promoter of resource development because it helps the development of socio-cognitive skills, the processing of social information and comprehension of mental states(3).

The adult may take several mediator roles in comprehension and production activities between adult and child. The adult can act as someone who gives instructions, exposes knowledge or sustains the subjects in their attempts to verbalize, but mainly acts as a partner in the child’s speech development(3).

The narrative skills of children before their entry into school may be considered an important predictor of school performance, especially for children who are in risk for academic and language development(4).

The success of social interaction can be attributed to the development of “social intelligence”, especially the ability to understand and manipulate the mental states of other individuals and thus alter their behavior(5). During the story understanding, theory of mind can be set to infer the mental states of characters(6).

The concept of false belief is related to the attribution of mental states. The false belief represents a belief that differs from reality because it is guided by partial perceptual information about some situation. Initially, children have to deal with distinct emotional representations that are properly attributed to specific contexts, and later they acquire devices for the representation of conflicting beliefs. Thus the attribution of emotions occurs earlier than the attribution of false beliefs(7).

In this context, the accountable and explicable conduct (CJE) is a use of language in order to act on the internal states of the speaker(8). Researches there are based on conflicts and disputes between children or between an adult and a child show that young children produce explanations to generate interaction and to get their own point of view to the interlocutor(9).

Therefore, this research is justified by the importance of the stimulation of language mediated by adults in preschool children in order to improve their discursive elaboration, thereby contributing to the overall development of language. The aim of this study was to investigate oral narrative skills in preschool children before and after stimulation of language.

METHODS

This study was accomplished with a program linked to the Department of Speech-Language Pathology and Audiology, Universidade Federal de São Paulo (UNIFESP), in a project entitled “Stimulation of language in preschool children by reading children’s stories”. There was approval of the Research Ethics Committee of UNIFESP under the number 0204/09. All participants were students enrolled in the kindergarten of a public school in São Paulo and they were allowed by their parents or guardians to be included in the Community-Institutional Program. The data collected during the project belong to the Department of Speech-Language Pathology and Audiology, which authorized the use for this research. There were analyzed the oral narratives of 58 preschool children at the age of 5 and 6 who were not matched according to gender. In this study, we consider for the stimulation of language reading children’s stories as a way of collective intervention and the adult scaffolding as way of individual intervention.

Stages of the study

Stage of autonomous narrative’s production before and after adult scaffolding (Moment 1)

At this stage, the preschool children produced a first autonomous narrative from a logical and temporal sequence of five pictures that form the story A pedra no caminho (“The stone on the path”) (10). The logical and temporal sequence used in the study can be classified as an intentional sentence, in which is necessary to interpret the characters’ mental states, such as the attribution of false beliefs, not just the description of their behavior(11). The story focuses on a misunderstanding between two characters about a different assessment of a key event and contains eight events (actions). Five of them are considered central events, that are fundamental to the understanding of story and three of them are considered secondary, that do not determine the understanding of story. The misunderstanding in this story is based on the false belief that one of the characters assigned to another one a push unintentional. Then the preschool children were subjected to adult scaffolding that helped them in a resumption of history and they produced a second autonomous narrative. Both autonomous narratives were recorded and transcribed for analysis. We dispensed about ten minutes in this stage of the study for each preschool child.

Stage of stimulation through reading stories by the adult

During ten weeks, it was done the reading of ten different children’s stories, which were accomplished with educators and coordinators of preschool and they are part of a previous selection of books to be used in the Community-Institutional Program(12). The books were selected according to educational planning, the interest and age of students. The issues of the stories were related to prejudice, respect, behavior, love, fear, ethical, cultural plurality, solidarity and fantastic beings. The order of presentation of the books was discussed with school staff, respecting the school curriculum and the level of complexity of the stories, starting with the least to the most complex.

The books were read to preschool children in the classroom with the teacher and/or her assistant. After each reading, the subject of history was taken, allowing preschool children make comments in order to ensure the understanding of story. The
activity was done in ten sessions once a week during three months of stimulation. The average duration of each session for reading was 30 minutes in each classroom. The activities were done in two classrooms with 25 or 30 students in each one, approximately.

Stage of autonomous narrative’s production before and after adult scaffolding (Moment 2)

At this stage, the evaluator again presented to preschool children the sequence of pictures used in the pre-stimulation. First, it was produced an autonomous narrative and after being subjected to adult scaffolding, they produced a second autonomous narrative.

All autonomous narratives were recorded and transcribed as the same procedure of the pre-stimulation stage. This stage was performed after the last procedure, therefore, three months after the end of the evaluations at Moment 1.

Analysis procedures

In this study two steps were considered by comparing: the stage of pre-stimulation through reading stories by adults, called Moment 1 and the stage of post-stimulation through reading stories by adults, called Moment 2. In both instances were analyzed four transcribed autonomous narratives that are the narratives taken before and after the adult scaffolding. The analysis of the results considered the reference to events of the story, which was classified as central events (tripping, pushing, pushing back, pointing the stone, reconciliation) and secondary events (greeting, fall, cry)\(^{(13)}\).

For the analysis of CJE, each event was analyzed according to physical, mental or social rule between what is explained and what explains. Thus, there were: physical causes, explaining that the event is by physical causality; internal state, in which the explanation considers the perception and the intention of the characters; social and moral rules, in which the explanation is the moral type and it refers to rules and social conventions, use and cultural practices\(^{(14)}\). The attribution and rectification of false beliefs were measured by the reference to accountable and explicable conduct of internal state, which allows the resolution of the misunderstanding in this story.

All narratives produced by each of the preschool children were analyzed according to the parameters described above. References to the central and secondary events, as well as the use of the accountable and explicable conduct were counted and analyzed by appropriate statistical tests.

Statistical method

For the analysis of the increase of event’s occurrence in story, we used analysis of variance with repeated measures on two factors of repetition, which compared the results of the group of preschool children between Moment 1 and Moment 2 (called time effect) and the results before and after the adult scaffolding (called stimulus effect). To verify the presence of interaction between the results, like different behavior according to either variable, we used the Bonferroni test.

The presence of interaction may indicate that the group of preschool children examined before and after the scaffolding has different behaviors for each moment. It may also indicate that there are differences between the moments only for certain situations (before or after the guardianship).

To analyze the increase of CJE’s use we used generalized estimation equation. For the types of CJE that showed low number of responses, we used nonparametric Friedman test. The significant level adopted was 0.05 (5%) with confidence intervals of 95%.

RESULTS

Comparison of events occurrence at Moment 1 and Moment 2 before and after adult scaffolding

Analyzing the results we verified the presence of interaction between the performance of preschool children in the two considered moments, before and after adult scaffolding. A difference was found on analysis of the central events, with time effect, stimulus effect and interaction effect (Table 1). These results point to an increase of the occurrence of central events in the narrative of preschool children after stimulation with reading children’s stories (time effect) and after adult scaffolding (stimulus effect).

The presence of interaction may indicate that the group of preschool children analyzed before and after the scaffolding has different behaviors for each moment being.

During multiple correlation analysis, considering only the effect of adult scaffolding in the performance of preschool children, it was found that there was an increase of the occurrence of central events at Moment 1 (p<0.001) and at Moment 2 (p=0.012) after scaffolding. These results indicate that adult scaffolding was effective in the increase of the occurrence of central events in the autonomous narrative of preschool children, regardless of stimulation through reading children’s stories.

During the analysis of multiple correlations by considering only the effect of stimulation of language by reading children’s stories in the performance of preschool children, it was found that there was an increase of the occurrence of central events before the scaffolding (p<0.001) and after the scaffolding (p<0.001) at both moments. These results indicate that stimulation of language by reading children’s stories was effective in the increase of the occurrence of central events in the autonomous narrative of preschool children, regardless of adult scaffolding.

During the analysis of secondary events, differences were observed only for the interaction effect (Table 2). During the analysis of multiple correlations by considering only the effect of adult scaffolding in the performance of preschool children, it was found that there was an increase of the occurrence of secondary events only at Moment 1 (p<0.008) after the scaffolding. These results indicate that adult scaffolding was effective in the increase of the occurrence of secondary events in the autonomous narrative of preschool children only in the pre-stimulation stage.
During the analysis of multiple correlations by considering only the effect of language stimulation by reading children’s stories in the performance of preschool children, no differences were found after scaffolding in any of the two moments. These results indicate that stimulation of language by reading children’s stories did not affect the performance of preschool children in relation to secondary events, regardless of scaffolding and suggest a decrease in the occurrence of these events.

**Comparison of types of CJE used in Moment 1 and Moment 2 before and after adult scaffolding**

While the percentages suggest an increase of the occurrence of CJE, especially after adult scaffolding, no differences were found for the justification of the physical type (time effect: \(p=0.782\); stimulus effect: \(p=0.160\), interaction effect: \(p=0.892\)). For the CJE which considers the physical type at Moment 1, were found percentages of 8.6% before the scaffolding and 15.5% after the scaffolding. For the CJE which considers the physical type at Moment 2, were found percentages of 6.9% before the scaffolding and 13.8% after the scaffolding (Figure 1).

For the CJE which considers social and moral rules, no differences were found (\(p=0.532\)) and the percentage did not indicate any difference either (Figure 2).

While the percentage suggest an increase of occurrence of CJE which considers internal state, statistical differences were not found too (time effect: \(p=0.345\); stimulus effect: \(p=0.247\), interaction effect: \(p=0.096\)). For the CJE which considers internal state in Moment 1, we found rates of 8.6% of occurrence

### Table 1. Analysis of the occurrence of central events before and after adult scaffolding and reading children’s stories

<table>
<thead>
<tr>
<th></th>
<th>Moment 1</th>
<th>Moment 1</th>
<th>Moment 2</th>
<th>Moment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before the scaffolding</td>
<td>After the scaffolding</td>
<td>Before the scaffolding</td>
<td>After the scaffolding</td>
</tr>
<tr>
<td>n</td>
<td>58</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Mean</td>
<td>2.33</td>
<td>3.31</td>
<td>3.22</td>
<td>3.72</td>
</tr>
<tr>
<td>Median</td>
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<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>SD</td>
<td>0.89</td>
<td>1.06</td>
<td>1.17</td>
<td>1.07</td>
</tr>
<tr>
<td>Minimum</td>
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<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Maximum</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Time effect: \(p<0.001^*\)      Stimulus effect: \(p<0.001^*\)      Interaction effect: \(p=0.005^*\)

* Significant values (\(p<0.05\)) – Analysis of variance with repeated measures on two factors of repetition

**Note:** SD = standard deviation

### Table 2. Analysis of the occurrence of secondary events before and after adult scaffolding and reading children’s stories

<table>
<thead>
<tr>
<th></th>
<th>Moment 1</th>
<th>Moment 1</th>
<th>Moment 2</th>
<th>Moment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before the scaffolding</td>
<td>After the scaffolding</td>
<td>Before the scaffolding</td>
<td>After the scaffolding</td>
</tr>
<tr>
<td>n</td>
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<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>Mean</td>
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<td>1.78</td>
<td>1.93</td>
<td>1.79</td>
</tr>
<tr>
<td>Median</td>
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<tr>
<td>SD</td>
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<td>0.67</td>
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<tr>
<td>Minimum</td>
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<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Maximum</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Time effect: \(p<0.068\)      Stimulus effect: \(p<0.915\)      Interaction effect: \(p=0.046^*\)

* Significant values (\(p<0.05\)) – Analysis of variance with repeated measures on two factors of repetition

**Note:** SD = standard deviation

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**Figure 1. Comparison between the accountable and explicable conduct which considers physical type before and after adult scaffolding**

**Figure 2. Comparison between the accountable and explicable conduct which considers social and moral rules before and after adult scaffolding**
before the scaffolding and 29.3% after the scaffolding. For the CJE which considers internal state at Moment 2, we found percentage of 15.5% of occurrence before the scaffolding and 22.4% after the scaffolding (Figure 3).

During the analysis the percentage of responses, we found a predominance of CJE which considers internal state, according to the results mentioned above. The CJE which considers internal state suggests the presence of expression and rectification of false beliefs in the narratives of preschool children.

**DISCUSSION**

The preschool children were able to perform autonomous narratives, producing sequences and describing the facts, as expected and explained by the literature. The results showed that the effect of scaffolding is immediate but there is also a long-term effect, analyzing the increase of occurrence of events at Moment 2. Being the scaffolding an opportunity for social interaction between adult and child, this relationship contributes to the development of language skills, in which both contribute with their experiences and knowledge to the course of interaction, establishing a reciprocal and bidirectional relationship.

The increase of occurrence of central events and the decrease of the occurrence of secondary events suggests that after adults scaffolding, preschool children focus their attention on more relevant events for the understanding of story. The material used for evaluation of the narratives may have contributed to the selection of central elements, because it is based in a pictographic representation. The pictographic representation of the stories makes the child does not have to narrate all the facts involved, because he or she already has a visual image. Thus, most relevant data can be chosen for the narrative production without harm its meaning.

The contact to different children’s stories during the stimulation sessions with adult mediation provided to preschool children a closest contact with the narrative structure, contributing to the resume of the central concepts of the stories, allowing emphasis to the essential elements for the understanding. Such contact may have contributed to the rescue of central events and the decrease of secondary events in the resume of autonomous narratives of preschool children in the stage of post-stimulation of this research. Researches point out that young people are not taught to tell a story but they are involved since childhood by stories told and repeated several times by their parents and teachers, which favors the more elaborate construction of mental scripts that are necessary for understanding and creating their own narratives.

Stimulation by reading children’s stories consisted also in a form of adult scaffolding performed in groups, because after the first reading of the story the adults resumed the theme and the central events of the narrative with the preschool children. The adult role in stimulating children’s language is important in both group and individual situations, as it is exposed in the literature in relation to different types of scaffolding and intervention.

The increase of the occurrence of central events in the narrative of preschool children found at Moment 2 can be attributed to language stimulation sessions performed during the ten weeks of reading children’s stories and the complementary work of stimulation accomplished by the pedagogical staff of the institution involved, according to the actions contemplated by the Community-Institutional Program. The scholar environment also contributes to the oral language stimulation of the preschool children because it provides their contact with their peers and with adults that are interested on the acquisition of knowledge and stimulation of child language.

The predominance of the CJE which considers internal state confirms, as it is exposed in the literature, the ability of five- and six-year-old children to adjust themselves to each other and take perspectives of others, demonstrating the ability of theory of mind, as expression and rectification of false beliefs.

The absence of statistical differences in the increase of use of CJE can be explained because children in preschool age are not able yet to link actions between characters and intentional relations of cause/effect, though attributing mental states to themselves and others. Preschool children start to understand that mental states exist such as intentions, desires, knowledge and beliefs that influence individual behavior and may be different between those individuals demonstrating skills related to theory of mind.

As previous studies exposed, the present study also showed occurrence of autonomous narrative linked by a sequence of events, but without the worry about an action that would lead to conflict resolution. In a study done with five, eight and ten years old children, using the same sequence of pictures
used in this study, founds that the story can be told in both descriptive level and more elaborate level, assigning intentions and beliefs to the characters\textsuperscript{19}. Thus, the results obtained in this study may indicate that the sample of preschool children used predominantly descriptive narrative resources. That behavior might be observed even after the resume of the components related to conflict resolution during the adult scaffolding, which represents the intentional accountable and explicable conduct.

A study that analyzed the occurrence of mental states in the narrative of preschool children from pictures founds predominantly perceptive terms, focusing on physical actions of the characters more than subjective states (thoughts, emotions, desires and intentions). In this study, the authors found that is easier for children to describe observable behaviors such as the characters’ actions than implicit attitudes, confirming the results of the previous study\textsuperscript{20}.

The children’s stories used on the stimulation stage of this study may not have emphasized the aspects of justifications/ explanations, in which are provided not only causes or reasons of the phenomena but also justified relations, including psychological reasons or motivations of speech, action or of communicative acts in general.

Although the assigned books for preschool children contain references to mental states, studies show a small percentage of references to false beliefs\textsuperscript{25-27}. Thus, children’s books used in the stimulation stage of this study may not have contributed significantly to increase the expression and rectification of false beliefs present in the narratives of preschool children.

In general, it is possible to state that stimulation of speech performed by reading children’s stories and adult scaffolding contributed to improve the narrative skills of preschool children, especially with the increase of the occurrence of central events.

From the results found in this study and the comments set out above, we can confirm the importance of continuity of studies related to the narrative of preschool children, particularly in relation to aspects of the accountable and explicable conducts, because of their importance in the development of language skills for children. New research may also be suggested regarding the content analysis of children’s books used in the stimulation phase of this study, focusing on those that deal with themes related to the attribution of mental states. Thus, it could be a greater way of approaches related to the accounts and explanations and expression and rectification of false beliefs.

CONCLUSION

Reading children’s stories and adult scaffolding contribute to the increase of the occurrence of events in autonomous narratives. There is an increase of the occurrence of central events and a decrease of the occurrence of secondary events in the autonomous narratives of preschool children after stimulation by reading children’s stories as well as after adult scaffolding.

Although the results suggest a percentage change, there is no significant difference in the types of accountable and explicable conduct in the preschool children’s narrative. The accountable and explicable conduct that considers internal states predominantly used in the narratives of preschool children.

REFERENCES