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The language ability test for preschool children

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Abstract— The reading preliteracy is a kind of preliminary stage of reading literacy and is understood as a set of gradually developing prerequisites for reading and writing before starting elementary school (Kropáčková et al., 2014). An important part of literacy development is the family and preschool education - kindergarten. This study is part of a dissertation which is focused on supporting the development of reader preliteracy in the families of preschool children and in kindergarten. In this contribution, I present the results of a pre-test and post-test which was focused on assessing language and speech skills. The aim of this research was to identify individual level of language skills of children and compare their score within at the beginning and at the end of school year. It was a standardized test of language skills (Seidlová, Málková & Smolík, 2014). The results brings positive findings. All children scored higher and their language skills have improved not only thanks to the natural development of the child, but also thanks to the focus of teaching and individualized support of the kindergarten to the children and their needs.

Index Terms— Reading preliteracy, pre-reading skills, preschool age, preschool children, language ability test

I. INTRODUCTION

The language level test, which I introduce in the following chapters, is part of a dissertation that deals with the development of reading preliteracy in preschool children. Now I will present a part of the study, the subject of which is testing with the character of a pre -test and a post-test with the aim of finding out the individual level of language skills of individual children and comparing their scores at the beginning and at the end of one school year. For these purposes, a standardized test of language skills was chosen, which corresponds most closely to the concept of reading preliteracy . The results provide a comprehensive view of the individual progress of individual tested children, which were part of a wider research investigation.

The purpose of this study is also to bring closer the importance of individualized preschool education, which brings targeted support to children in the area of reading literacy and language development.

II. THEORETICAL BASIS

The beginnings of interest in the issue of reading preliteracy can be found abroad, from where it spread to the Czech environment as well. Abroad, this area is referred to as emergent literacy. The first to work with this term was M. Clay in 1966 (Whitehurst & Lonigan , 1998).

Reading preliteracy is a kind of preliminary stage of reading literacy and is understood as a set of gradually developing prerequisites for reading and writing before entering elementary school (Kropáčková et al., 2014). Nádvorníková et al. (2019) defines in detail reading preliteracy into two dimensions: 1) creating relationships and attitudes towards written language (interest in books, magazines and other texts, including digital ones, interest in listening to fairy tales, careful handling of books) and 2) acquiring knowledge and skills (awareness of reading as a means of acquiring information, analysis and synthesis of words, understanding of simple stories and fairy tales). It is therefore a relational and knowledge dimension, which is also implicitly stated by Kropáčková et al. (2014). An interesting concept is offered by Kleeck (1998), who created a model of the development of preliteracy with four dimensions of development in preschool and younger school age. The starting point for this concept is the model of Adams from 1990 and Seidenberg McClelland from 1989 (Kleeck, 1998, p. 1). The dimensions are *orthographic processor* (print conventions and knowledge of letters), *meaning processor* (meaning of words, vocabulary), *context processor* (ability to interpret with knowledge of the child's surrounding world, syntactic knowledge, narrative skills, book conventions and reasoning) and *orthographic processor* (segmentation of syllables) , rhyming and phoneme segmentation (Kleeck , 1998).

Whitehurst and Lonigan (1998) elaborated a theory of the development of reading preliteracy with similar dimensions , which additionally include a developmental point of view associated with the acquisition of literacy. They present this concept as a combination of two areas: 1) skills from the inside out (*Inside -out*) and 2) from the outside in (*Outside -in*). The term *Outside -In* is used to describe conceptual knowledge, the term *Inside -Out* describes procedural knowledge related to literacy skills. External processes include, for example, language (semantic and syntactic conceptual knowledge, story, comprehension and narrative) and print conventions (knowledge of standard print, left-to-right orientation). For example, phonological awareness (rhyme detection, manipulation of syllables and phonemes, knowledge of graphemes) and syntactic awareness (correcting grammatical errors) are included in processes from the inside. The authors also mention other factors, such as phonological memory, quick naming and motivation to print (Whitehurst & Lonigan , 1998), which is also appealed to by Kropáčková et al. (2014).

Rohde (2015) advances the theory of Whitehurst and Lonigan (1998) and proposes a comprehensive model of reading preliteracy , which is divided into individual components with mutual relationships. The sociological meaning is also taken into account - the meaning of culture and community, similar to the definition of Kleeck (1998). Each component has its own development and supports the development of other components. These components are: word identification, listening comprehension (cf. Nádvorníková et. al., 2019), silent reading with comprehension. Each component develops from specific skills that precede the acquisition of literacy. These components are awareness of print (knowledge of the alphabet and concepts of print) (cf. Kleeck , 1998), which leads to word identification, and phonological awareness (rhyming and segmentation of sounds) (cf. Whitehurst & Lonigan , 1998), which is closely related to listening comprehension and speaking (comprehension and use of vocabulary, background knowledge and semantics) leading to silent reading comprehension). This model tries to approach the way of viewing emergent literacy as an interactive process of skills and context (Rohde , 2015). In this way, Whitehurst , Lonigan (1998) and Rohde (2015) defined in detail the individual components that shape reading preliteracy and add other dimensions that enter into and influence this issue.

III. METHODOLOGIES

The research was designed as qualitative using a case study design. It will be a so-called multi-case study, the aim of which is to reveal certain common or, on the contrary, different features (Walterová, 2006). The case study was chosen deliberately, because it allows intensive study of one or more cases - typical or rare. (Olecká ,

Ivanova, 2010). Another aspect that was key to choosing the design of a multi-case study is the fact that a detailed study of deliberately chosen cases allows uncovering potential hidden aspects (Sedláček in Švaříček & Šeďová , 2007). In connection with the needs of the case study, this research will have a longitudinal character, which allows for the capture of changes in the individual investigated cases over time, in this research it will be an examination of cases during one school year in a kindergarten.

Research objective and research questions

The aim of the testing was to determine the individual level of language skills of individual children and to compare their scores at the beginning and at the end of one school year. To better target the research, research questions were formulated:

1. What results did the pretest bring ?

2. How did the results of the pretest correspond with the findings from the pedagogical diagnosis?

3. What differences did the pretest and posttest results show ?

Method

For the purposes of assessing the level of language abilities, the standardized test Diagnostics of Language Development (Seidlová Málková & Smolík, 2014) was chosen. This diagnostic battery contains a total of ten tests focused on the sound structure of words, vocabulary and knowledge of Czech grammar. This battery is intended for preschool children, which corresponds to the research sample of this study.

Research sample

The research sample consisted of four children from the same one-class kindergarten in Brno-venkov, three girls and one boy. The selection of these children was based on the written consent of their parents to participate in the research. For greater clarity, I summarize the children's ages in a table together with fictitious names for the purposes of anonymizing the research sample.

Child's name	Age of child at time of testing	
	Pre -test	Post-test
Nataša	7 years	7 years, 9 months
Nikola	5 years, 10 months	6 years, 7 months
Šimon	6 years	6 years, 8 months
Barbora	5 years, 9 months	6 years, 5 months

Table No. 1: Research sample: Child's name and age at the time of testing

All children have compulsory pre-school attendance in the 2022/2023 school year, of which Nataša has a postponement of school attendance this school year. All children will start primary education in the 2023/2024 school year.

Research context

In this chapter, I want to describe the way of working in kindergartens, which was the aim of the research, but which is not part of this text. The chapter summarizes only the important aspects of work in kindergarten that influenced the results of the posttest .

For each week, the kindergarten creates weekly plans that include an offer of activities linked to the goals of the chosen topic. Each weekly plan is aimed at introducing children to a different area/topic of their lives. The kindergarten class attended by the children from the research sample is heterogeneous in age, so these weekly schedules were created taking into account the age specifics of the class composition. In kindergarten, group work is considered a key form of work with preschool children, in which emphasis is placed on children's cooperation, the ability to agree, assert themselves and submit to the group as a whole. The educational offer includes activities from which the child can choose for himself whether to participate in the activities, while these activities are chosen deliberately with regard to the individual needs and interests of individual children and based on the results of pedagogical diagnostics. Based on the diagnostic activity, children are prepared with activities that support their deficits

with regard to their strengths and weaknesses. After lunch before rest, the
children have a ritual and go to choose a book according to their interest and look for different symbols and themes in the illustrations. Subsequently, the teacher reads a selected fairy tale from children's literature to the children. The library in the kindergarten classroom is accessible to children throughout the day. The kindergarten regularly includes a visit to the theater once every two months. Parents were offered the option of a shared library with children's literature, but a separate library with publications on the upbringing and education of children in pre-school age was also set up, and parents themselves can request specific titles, topics or authors they are interested in.

Category (planes)	Number of points max	Nataša	Nikola	Šimon	Barbora
Lexical-semantic	33	30.5	32	29	32
Morphological-syntactic	10	7	10	9.5	10
Pragmatic	10	6	10	10	10

Table No. 2: Pre-test results

The most successful were the subtests of adding syllables, repeating pseudowords , correcting sentences, morphology and vocabulary 1 and 2. In contrast, the most difficult subtests were recognizing syllables and sounds in pseudowords . From the point of view of the assessment of individual children, it can be seen that Nataša achieved the lowest number of points in a total of seven subtests and had the most errors in the rapid naming subtest , yet the slowest in this subtest was Barbora, who had a total of four errors. She had the worst result in the grammar comprehension subtest , Šimon in the Dictionary 1 subtest and Nikola in the Dictionary 2 subtest . The best results overall were achieved by Šimon, followed by Nikola, Barbora and Nataša.

2. *How did the results of the pretest correspond with the findings from the pedagogical diagnostics?*

Subtest	Points max	Nataša	Nikola	Šimon	Barbora
Recognizing syllables	16	7	11	11	8
Adding syllables	24	11	23	24	22
Vowels in pseudowords	25	13	18	14	16
Quick naming	speed, number of errors:	65s, 2 errors 72s, 4 errors	50 sec, 0 errors 49 sec, 0 errors	82 sec, 0 errors 83 s, 4 errors	53, 0 errors 55 sec, 0 errors
Repetition of pseudowords	22	20	22	22	22
Grammatical assessment	16	6	12	14	14
Correcting sentences	8	4	5	8	7
Morphology	30	23	29	29	26
Understanding grammar	22	19	18	21	15
Glossary 1	40	38	37	36	39
Dictionary 2	40	36	32	36	34

Table No. 3: Results of pedagogical diagnostics in the area of speech

IV. THE RESULTS

The results of the testing will be conceived chronologically according to the research questions:

1. *What were the results of the pretest ?*

For better clarity, the results are arranged in a table with a subsequent comment.

Pedagogical diagnostics is regularly and continuously evaluated. For the purposes of this study, only the part of the diagnosis that focuses on the area of speech was used, which thematically most closely corresponds to reading

preliteracy . Pedagogical diagnostics in the area of speech includes subcategories, which are the lexical-semantic level, the morphological-syntactic level and the pragmatic level. Scaling according to Bednářová and Šmardová (Bednářová, Šmardová, 2015) I rated 0 points on the Can't manage scale, 0.5 points on the Can do with help level and 1 point on Can manage.

The results of pedagogical diagnostics were similar for almost all children, only Nataša had a weaker result in almost all categories compared to the other children. The lexical-semantic level was around 93% success, the morphological-semantic level was around 91% and the pragmatic level with 90% average success. However, these values are average. It can be seen from the table that the best results were achieved by Nikola and Barbora, followed by Šimon and the lowest number of points by Nataša, in total on two levels, morphological-syntactic and pragmatic. Šimon had the worst result in the lexical-semantic level.

The results of the pretest and pedagogical diagnostics show consistency within the language skills of individual children. Nataša achieved lower results in all categories compared to other children, which indicates the need to focus on her individual support, especially on a pragmatic level. Nikola and Barbora achieved high results in all areas, which corresponds to their results in the pretest . Šimon had the lowest results in the lexical-semantic level, which also corresponds to his score in the Vocabulary 1 and 2 pretest .

These results show that diagnostic tools are consistent and provide reliable data for individual planning and support of children's language development.

3. What differences did the pretest and posttest results show ?

Below I present the results of the post-test, similar to the results of the pre -test:

Subtest	Points max	Nataša		Nikola	Šimon	Barbora
Recognizing syllables	16	12		13	10	12
Adding syllables	24	20		24	24	24
Vowels in pseudowords	25	16		25	25	25
Quick Naming (40 words)	speed, number of errors:	62 sec, 0 errors 66 sec, 0 errors		44 sec, 0 errors 47s, 1 error	53 sec, 1 error 64 s, 1 error	46 sec, 0 errors 46 sec, 0 errors
Repetition of pseudowords	22	20		22	22	22
Grammatical assessment	16	8		14	15	14
Correcting sentences	8	4		7	7	8
Morphology	30	24		30	29	30
Understanding grammar	22	20		22	21	16
Glossary 1	40	40		39	39	40
Dictionary 2	40	40		39	39	40

Table No. 4: Post-test results

The result of the post-test shows an improvement in the scores of almost all children in all ten subtests . All children achieved improvement in the subtests Sounds in pseudowords , Dictionary 1 and 2. In the subtest In the assessment of grammaticality, all children had a better result except Barbora (no change). In the Syllable Recognition subtest , there was also an improvement in almost all children except Šimon (deterioration by 1 point), similarly also in Syllable Composition, Morphology and Grammar Comprehension (Šimon without change). In the Quick Naming subtest , all children achieved a faster time, the differences were in the number of errors (Barbora, Nikola no changes, Šimon worsened). Less improvement was noted in the Sentence Correction subtest , where Nataša achieved the same result as in the pre -test and Šimon achieved a slight deterioration. The Pseudoword Repetition subtest remained the same. Children achieved the greatest improvement in vocabulary and the smallest improvement in sentence correction.

Nataša improved the most in forming syllables (9 points), Nikola improved the most in sounds in pseudowords and vocabulary 2 (7 points), Šimon improved the most in sounds in pseudowords (11 points) and Barbora improved the most in sounds in pseudowords (9 points).

V. CONCLUSION

The results of this study provide important information about the development of language skills in preschool children in the context of reading preliteracy . All children tested showed improvement in various areas of language skills, although the degree of improvement varied between children and subtests . The greatest improvement was noted in the pseudoword sounds and vocabulary subtests , indicating that the children improved significantly in phonological awareness and vocabulary. This finding is consistent with the theories of Whitehurst and Lonigan (1998), who emphasize the importance of phonological awareness for the development of reading skills.

The results of this study demonstrate the importance of individualized support and targeted interventions in kindergartens. The pre- reading development support plan , which was created based on the results of the pre -test, enabled teachers to focus on the specific needs of individual children and provide them with targeted support. This strategy has proven to be effective, as evidenced by improvements in all areas tested.

A limitation of this study is the small research sample, which included only four children, which makes it impossible to generalize the results, however, as already mentioned above, this study is part of a dissertation, which by its nature corresponds to the case study design, where generalization of the results is not the goal of the research investigation. I consider my personal interest in the role of researcher and teacher of these children to be another limitation of this work, which can to some extent distort and influence the final evaluation, especially in the field of pedagogical diagnostics.

The study proved that targeted pedagogical intervention and individualized support contribute to the development of reading preliteracy in preschool children.

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