METAPHONOLOGICAL STIMULATION, ALPHABET KNOWLEDGE AND VOCABULARY PROGRAM (PEMAV) FOR PRESCHOOLERS: ELABORATION AND PILOT STUDY

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Abstract

The importance of stimulating cognitive-linguistic skills, vocabulary and metaphonological skills associated with knowledge of the alphabet is described in international literature for subsequent success in learning to read and write, however there is a gap in studies in Brazil to stimulate these skills in early childhood education. Therefore, this study aimed to develop a metaphonological stimulation program, alphabet knowledge and vocabulary (PEMAV) and its applicability in a pilot study with preschoolers. Forty preschoolers aged 5 years and 5 years and 11 months participated in this study, who were divided into two groups, GI (20 preschoolers submitted to PEMAV) and GII (20 preschoolers not submitted to PEMAV). The results were analyzed using the wilcoxon and chi-square tests and demonstrated positive changes, with domain of cognitive-linguistic skills, knowledge of the alphabet and vocabulary in preschoolers in GI, when compared to GII.

Keywords: Learning, stimulation studies, preschoolers, reading, literacy.

1. Introduction

According to Sargiani and Maluf (2018), children need to develop cognitive-linguistic skills during the first 6 years of life, as they will be fundamental for later school success. Among these cognitive-linguistic skills, knowledge of the letters and sounds of the alphabet stands out; metaphonological skills and vocabulary (Andrade, Andrade, & Capellini, 2013; Sargiani & Maluf, 2018).

International studies with preschoolers indicate that the stimulation of metaphonological skills, vocabulary and the alphabetic principle (Goldstein et al., 2017; West et al., 2021) play a very important role in the development of reading and writing skills in the early years of literacy.

Although the importance of stimulating these skills in Early Childhood Education is recognized in international literature, in Brazil there is a gap in studies with these skills integrated into the knowledge of letters for this age group.

2. Objectives

This study aimed to develop a metaphonological stimulation program, alphabet knowledge and vocabulary (PEMAV) and its applicability in a pilot study with preschoolers, aged 5 years to 5 years and 11 months.

3. Method

This study was approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences of the São Paulo State University "Júlio de Mesquita Filho" - FFC/UNESP - Marília-SP, under number 68360023.8.0000.5406. The study was divided into two phases:

Phase 1: The choice of activities for developing the stimulation program was based on studies by Goldstein et al. (2017); West et al., (2021). In this phase, linguistic stimuli were selected corresponding to different semantic classes, giving rise to the main themes of the program, which were grouped into 5 thematic boards: Getting to know animals, Holidays at the beach, A day at school, Playing in the room and Walking at the fair. The thematic boards were created with the distribution of 4 main cards with pictures that represented the theme's vocabulary, which increased cumulatively until a total of 20 cards were

presented. Each main card of the thematic boards was composed of 3 more alliteration cards and 3 rhyme cards. Thus, the program consisted of 25 boards and 700 figures, with 140 figures presented per specific theme.

Phase 2: 40 preschoolers enrolled in two municipal Kindergarten, aged 5 years to 5 years and 11 months, participated in phase 2 of this study. These preschoolers were divided equally into 2 groups: Group I (GI): composed by 20 preschoolers submitted to PEMAV and Group II (GII): composed by 20 preschoolers not submitted to PEMAV.

All preschoolers went through the same assessment procedures in pre- and post-testing situations, the version adapted for Early Childhood Education of the IPPL – Protocol for Early Identification of Reading Problems (Queiroga, Rosal, Braga, Melo, and Capellini, 2023) and the Vocabulary Test (TIN) (Seabra, Trevisan &, Capovilla, 2012).

The results of this pilot study were analyzed using the SPSS V26 software (2019) with the application of the Wilcoxon test and Chi-square to compare the variables between the groups in pre- and post-testing situations. The statistically significant value is described with an asterisk in the tables.

4. Results and discussion

Table 1 presents the comparison of the performance of preschoolers from GI and GII in pre- and post-testing situations in the skills assessed in the adapted version of the IPPL (Queiroga, Rosal, Braga, Melo, & Capellini, 2023).

Table 1. Distribution of the mean, standard deviation and p-value of the performance of preschoolers from GI and GII in pre- and post-testing situations.

			N	Average	Standard Deviation	P-value
Alphabet knowledge (AK)	GI	Pre	20	12,95	7,96	<0,001*
		Post	20	16,15	7,23	
	GII	Pre	20	12,75	7,71	0,006 *
		Post	20	14,45	7,59	
Rhyme Identification (RI)	GI	Pre	20	2,9	4,68	<0,001*
		Post	20	10,2	6,25	
	GII	Pre	20	3	5,35	0,057
		Post	20	4,45	5,88	
Rhyme Production (RP)	GI	Pre	20	0,4	0,94	<0,001*
		Post	20	9,05	5,74	
	GII	Pre	20	0,25	0,79	0,027 *
		Post	20	1,5	3,17	
Syllabic Segmentation (SSEG)	GI	Pre	20	13,05	8,62	0,001*
		Post	20	19,3	3,01	
	GII	Pre	20	16,9	4,85	0,34
		Post	20	15,8	6,23	
Word Production based on initial phoneme or syllable (WP)	GI	Pre	20	7,15	5,05	<0,001*
		Post	20	15,4	5,06	
	GII	Pre	20	6,35	4,22	0,001*
		Post	20	8,9	5,38	
Syllabic Synthesis (SSYN)	GI	Pre	20	14,5	5,08	<0,001*
		Post	20	19,4	1,23	
	GII	Pre	20	17,1	4,68	0,232
		Post	20	17,15	5,79	
Initial Sound or syllable Identification (ISI)	GI	Pre	20	9	7,73	<0,001*
		Post	20	14,1	8,09	
	GII	Pre	20	12,45	9,08	0,043*
		Post	20	10,75	8,9	
Phonological Working Memory (PWM)	GI	Pre	20	17,8	3,16	0,001*
		Post	20	20,4	3,08	
	GII	Pre	20	18,85	2,76	0,632

			N			
		Post	20	18,65	3,17	
Papid Automatized Naming (RAN)	GI	Pre	20	50,2	13,64	0,015*
		Post	20	43,95	7,61	
	GII	Pre	20	50,85	17,23	0,408
		Post	20	49,2	14,66	
Correct Automatized Naming (CAN)	GI	Pre	20	30,8	4,91	0,010*
		Post	20	33,65	1,6	
	GII	Pre	20	31,95	3,94	0,520
		Post	20	31,7	3,81	
Silent Reading (SR)	GI	Pre	20	2,75	1,33	0,001*
		Post	20	5,05	1,39	
	GII	Pre	20	4,1	1,77	0,953
		Post	20	4,1	2,05	
Hearing sentence Comprehension (HC)	GI	Pre	20	11,65	3,20	<0,001*
		Post	20	14,95	3,07	
	GII	Pre	20	12,75	2,84	0,134
		Post	20	13,90	3,70	

The table 1 showed statistically significant difference in the pre and post-test comparison in all skills of the adapted version of the IPPL in GI, while in GII there was an increase in performance in only 3 skills. The comparison of the performance of preschoolers from GI and GII in the TIN vocabulary test (Seabra et al, 2012) in terms of classification in pre and post-test situations showed statistically significant difference for the GI in terms of classification. This effect was not observed in GII.

The findings of this study confirm the importance of stimulating phonological awareness in the last year of early childhood education, being considered a fundamental skill for entry into the 1st year of literacy (Queiroga et al., 2023).

5. Conclusion

In this study, it was possible to develop a stimulation program for preschoolers aged 5 years to 5 years and 11 months and observed the impact in the preschoolers of GI when compared to GII in domain of cognitive-linguistic skills stimulated.

In this way, we can conclude that the Metaphonological Stimulation, Alphabet and Vocabulary Knowledge Program (PEMAV) developed was effective and will be applicable in the educational context.

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