

PANDEMIC IMPACT ON THE COGNITIVE-LINGUISTIC SKILLS OF 1ST AND 2ND GRADE BRAZILIAN SCHOOLCHILDREN

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Abstract

The Covid-19 pandemic made discrepancies between the different educational realities more evident for schoolchildren in the beginning of literacy. Aim: to characterize the performance of cognitive-linguistic skills of students in early literacy phases during the pandemic. Forty-eight Brazilian schoolchildren participated in this preliminary study, distributed in GI, composed by eighteen schoolchildren for 1st grade and GII, composed by thirty schoolchildren for 2nd grade, submitted to the application of the Cognitive-Linguistic Skills Assessment Protocol for students in the initial stage of literacy. Results: students from GI and GII showed average performance for writing the name, sequential alphabet recognition, and visual memory of shape. The GI presented a refusal response for the subtests of word dictation, nonword dictation and picture dictation, word repetition and visual sequential memory of shapes and poor performance for alphabet recognition in random order and average performance for alphabet recognition in sequence. GII showed lower performance for the subtests of word dictation, nonword dictation, picture dictation and superior performance for alphabet recognition in random order, alphabet in sequence and visual sequential memory of shapes. Discussion: the appropriation of the letter-sound relationship mechanism raises questions, since it evidenced the difficulty of all students in cognitive-linguistic skills necessary for the full development of reading and writing in an alphabetic writing system such as Brazilian Portuguese. Conclusion: students in the 1st and 2nd grade showed lower performance in cognitive-linguistic skills important for learning reading and writing.

Keywords: *Literacy, pandemic, learning, child development, education.*

1. Introduction

COVID-19 spread rapidly around the world in 2020 and generated the unprecedented situation where 90% of the student population was being isolated worldwide (Arruda, 2020). In this pandemic scenario, social isolation was initiated as a measure of prevention and attenuation of the virus. Among these measures, in addition to the closing of many educational institutions, the suspension of in-person classes and remote teaching were implemented (Camacho, Joaquim, Menezes, and Sant’Anna, 2020).

Regarding remote learning, it was implemented on an emergency basis, that is, the schoolchildren would only return to the face-to-face format once the health crisis had been resolved or controlled, thus providing schoolchildren with temporary access to educational content in a way that minimizes effects of social isolation on their education and learning (Joye, Moreira, and Rocha, 2020).

Based on the above, this study aimed to investigate whether the period of remote access education established during the pandemic compromised the development of cognitive-linguistic skills necessary for the full literacy of schoolchildren in the early literacy phase.

2. Objective

To characterize the performance of cognitive-linguistic skills of students in early literacy phases during the pandemic.

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 4.862.668.

A total of 48 schoolchildren of both sexes, aged from 6 years to 7 years and 11 months from the 1st and 2nd year of Elementary School, with complaints of learning problems were referred by municipal public schools in the region of Marília – São Paulo, Brazil. From the analysis that 26 schoolchildren were unable to read and write, these were excluded and the number of participants was redefined to 22 schoolchildren divided into two groups: Group I (GI): composed of 10 schoolchildren from the 1st year of Elementary School, 50% male and 50% female and; Group II (GII): composed of 12 schoolchildren from the 2nd year of Elementary School, 83.3% male and 16.7% female.

All schoolchildren were submitted to application of the collective and individual version of the Cognitive-Linguistic Skills Assessment Protocol for schoolchildren in the early phase of literacy (Silva and Capellini, 2019). The procedure of this study was applied in person and followed the UNESP guidelines to reorganize activities during the pandemic. Data analysis was performed using the Statistical Package for Social Sciences, version 25.0. The results were statistically analyzed at a significance level of 5% (0.05).

4. Results

Table 1 shows there was a statistically significant difference between the study groups with the application of the Likelihood-Ratio Test.

In Table 1, it was possible to verify that the schoolchildren from GI and GII showed average performance for writing their name and writing the alphabet in sequence.

Table 1. Frequency distribution of the performance classifications of schoolchildren from groups GI and GII in the Cognitive-Linguistic Skills Assessment Protocol. Likelihood-Ratio Test ($p < 0.05$).

Subtests	Classification	G1		GII		p Value
		Freq.	%	Freq.	%	
WN	Refusal	0	0.00	0	0.00	0.036*
	Inferior	4	40.00	1	8.30	
	Average	6	60.00	6	50.00	
	Superior	0	0.00	5	41.70	
CS	Refusal	0	0.00	0	0.00	0.015*
	Inferior	4	40.00	0	0.00	
	Average	6	60.00	12	100.00	
	Superior	0	0.00	0	0.00	
WD	Refusal	7	70.00	2	16.70	0.027*
	Inferior	3	30.00	7	58.30	
	Average	0	0.00	3	25.00	
	Superior	0	0.00	0	0.00	
NWD	Refusal	7	70.00	2	16.70	0.036*
	Inferior	3	30.00	9	75.00	
	Average	0	0.00	1	8.30	
	Superior	0	0.00	0	0.00	
FD	Refusal	8	80.00	2	16.70	0.023*
	Inferior	2	20.00	6	50.00	
	Average	0	0.00	2	16.70	
	Superior	0	0.00	2	16.70	
RAS	Refusal	2	20.00	0	0.00	0.002*
	Inferior	3	30.00	0	0.00	
	Average	4	40.00	1	8.30	
	Superior	1	10.00	11	91.70	
RARO	Refusal	2	20.00	0	0.00	0.006*
	Inferior	4	40.00	0	0.00	
	Average	3	30.00	3	25.00	
	Superior	1	10.00	9	75.00	
RW	Refusal	5	50.00	0	0.00	0.030*
	Inferior	1	10.00	1	8.30	
	Average	3	30.00	5	41.70	
	Superior	1	10.00	6	50.00	
VMS	Refusal	5	50.00	0	0.00	0.031*
	Inferior	2	20.00	2	16.70	
	Average	2	20.00	5	41.70	
	Superior	1	10.00	5	41.70	

Caption: WN: writing name, CS: copy shapes, WD: word dictation, NWD: nonword dictation, ND: figure dictation, RAS: recognition of the alphabet in sequence, RARO: recognition of the alphabet in random order, RW: repeating words, VMS: visual memory for shapes.

5. Discussion

The beginning of literacy, a phase in which the schoolchildren in this study found themselves, is an important period for the acquisition of cognitive-linguistic skills, considered predictors for the learning of reading and writing (Cunha and Capellini, 2010; Silva and Capellini, 2019; Santos and Capellini, 2020). Furthermore, any delays resulting from an inadequacy in the teaching of alphabetic and orthographic principle, that is, in teaching the letter-sound conversion mechanism, can trigger difficulties in the reading and writing of words.

In this study, we found that among the schoolchildren in the GI group there was a refusal response for the tasks of dictation and repetition of words and visual sequential memory of shapes and poor performance for alphabet recognition in random order. On the other hand, the schoolchildren from GII presented lower performance in the dictation tasks, showing that knowledge of the sequence of the letters of the alphabet for the two groups was not a guarantee of acquisition for the application of the alphabetic and orthographic principle at the time of writing.

Based on the data found in this study, we conclude this article by highlighting the need for the clinical and/or educational speech therapist to act as overseers of the acquisition and development of school learning, helping to plan specific actions to promote normal development and detection of deviant processes from the teaching-learning process. Thereby gaining an important space with teachers and educational staff regarding relevant discussions; not only about the importance of cognitive-linguistic skills for the development of academic learning, but also regarding the milestones of child development and predictors of literacy. The latter are so important to ensure the success of reading and writing for these schoolchildren in the early stage of literacy and yet so disregarded or not prioritized in the remote teaching-learning process during the COVID-19 pandemic.

6. Conclusion

Schoolchildren in the early literacy in the first and second-year, showed lower performance in cognitive-linguistic skills that are important for the development and learning of reading and writing. In that, schoolchildren from the 1st year still presented a refusal response to several of these skills since they did not know how to perform the tasks requested. This was probably due to the fact that they were not sufficiently literate and therefore unable to use the cognitive-linguistic skills necessary to trigger the analysis and synthesis processes necessary during the formation of words for both reading and writing.

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