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Origjinal scientific paper

CONFRONTATION OF CHILDREN WITH DYSCALCULIA DURING ONLINE LEARNING

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Abstract

Introduction: The period of the COVID-19 virus, in addition to health, affected to a great extent and also global education of all the children of the world, moving to a lesson through the screen. This way of learning had many difficulties and little effect, particularly for children with learning disabilities, for whom learning and commitment must always be continuous and active for their difficulty to fade further.

Purpose: The research aims to investigate the specific challenges pupils who struggled with math faced when learning online. Research questions: What was the impact of online learning on students with math difficulties? What difficulties did children with dyscalculia have when participating in distance learning during COVID-19?

Methodology: The research methodology is quantitative and qualitative. The questionnaire was used as an instrument and focus group. The study population was 60 students in fourth grade and 8 parents, Municipality of Pristina. The data were analyzed through (SPSS).

Results: The study's findings demonstrated that online learning had no impact on dyscalculic children because the pandemic had a significant negative impact on these kids and prevented them from the regular treatment of their math difficulties. They also encountered numerous challenges while learning online, which had an impact on their emotional and psychological condition. =

Keywords: challenges, dyscalculia, math, online learning, parent, student.

Introduction

"The term dyscalculia is used to describe specific difficulties with mathematics." (Hannell, 2013). Hannell (2013) argues that dyscalculia is not a lack of intelligence, but rather a difficulty in "Mastering the essential concepts that underpin the skills in performing mathematical procedures."

The role and dedication of the teachers in mathematics are very important for the children because based on the fact that they see every day their development that is not the same as other classmates, with many unusual symptoms for their age is one among the main factors for the teacher to be careful in identifying or taking the necessary measures to help children who have difficulties in mathematics. This integrates the cooperation with the parents of these children and the information about all of this so that the pedagogical triangle is as functional as possible and helps the children with difficulty in learning mathematics.

Educating a child with Special Education Needs and Disabilities at home represents a different challenge than educating a neurotypical child. The impact of homeschooling is likely to be felt particularly keenly by the parents of children with SENDs who were suddenly required to meet their child's needs all day and every day,

without the usual support. Families of children with SENDs are known to face more stressors, on average, than those with neurotypical children, even in normal times (McConnell & Savage, 2015; McStay, Trembath, & Dissanayake, 2014, according to Toseeb, 2020).

In mid-March, 2020, as cases of COVID-19 began rising, schools around the world closed their doors and rapidly pivoted to remote learning. While the pandemic affected the education of virtually all schoolchildren, it became clear early on that pandemic-related school closures did not affect all children in equal ways. Among those who were disproportionately affected were children with disabilities, many of whom found themselves without access to the services and accommodations they normally receive in school (Houtrow et al., 2020; Kim & Fienup, 2021, according to Averett, 2021).

In particular, the treatment of children with learning difficulties has been a major concern and a great challenge for the families of these children, who have been neglected by institutions during a global crisis in 2020 when the whole world learned only through screens, so, the lesson was conducted online. Isolation between the four walls and the lack of activity is a negative factor that affects the psycho-emotional state of children because play, activity, and attractive activities are those that develop the child's brain the most, and the moment the child's brain rests, the development intellectual 'fade'. This 'fading' of intellectual development was more evident in children with difficulties in mathematics or dyscalculic children, in whom there is always a need for intervention and continuous teaching for them to overcome the mathematical anxiety they have already developed.

One initial study during COVID-19 found that many parents of children with SENDs reported that the changes they experienced when schools were closed had a negative effect on their mental health as well as that of their child (Toseeb., et al, 2020)

The shift to remote learning for students with disabilities has introduced novel sources of stress for both students and parents, and the "unmet need for educational assistance has been staggering and challenging for families to navigate" (Houtrow et al., 2020).

Methodology

The methodology of this research is mixed (quantitative and qualitative). The collected data were analyzed through the Statistical Program for the Social Sciences (SPSS). The purpose of this was to find out what challenges pupils who struggled with math faced during online learning.

Research questions:

- ✓ What was the impact of online learning on pupils who struggled with math?
- ✓ What difficulties did children with dyscalculia have when participating in distance learning during COVID-19?

Research hypotheses:

- ✓ Distance learning was a double challenge for dyscalculic children and their parents.
- ✓ The COVID-19 pandemic affected the psycho-emotional condition of dyscalculic children.

Participants

The sample was selected with the participation of 60 students in fourth grade from primary schools in Pristina and 8 parents of children who were identified as dyscalculic were interviewed through the focus group. Respondents are a total of 60 students, 37 boys (61.6%) and 23 girls (38.3%) and 8 parents, 5 women (62.5%) and 3 men (37.5%).

Material

The survey was used as a technique for students. The research was conducted through standardized questionnaires, through which we aimed to see the impact of distance learning on students with dyscalculia. The level of compliance pre-determined in the questionnaire was as follows:
5 = A lot, 4 = Somewhat, 3 = Moderate, 2 = A little, 1 = Not at all

Procedure

Questionnaires were distributed to students who have been selected to be fourth-grade Municipality of Pristina. Parents gave answers through the focus group on how the COVID-19 pandemic affected the emotional, mental, and intellectual state of children during that time and showed the children's behavior and engagement in online learning.

Results

Of the respondents, we have a table with students' responses about situations encountered during the COVID-19 pandemic and their challenges in their tasks and math during distance learning.

		1	2	3	4	5
		Not at all	A little	Moderate	Somewhat	A lot
		%	%	%	%	%
1.	***I reduced sleep because I was worried all the time***	10	14	8	28	40
2.	***I became more hyperactive during the pandemic***	8	20	22	40	10
3.	***I became more demotivated during the pandemic***	4	26	4	26	40
4.	***I felt sadder when we were in distance learning***	10	12	32	24	22
5.	***I was able to complete my tasks***	56	10	4	18	12
6.	***I became more anxious and stressed about math***	6	14	18	22	40
7.	***I complained to my teacher about my tasks***	9	23	29	16	23
8.	***I had arguments with my family about my homework***	18	14	46	12	10
9.	***I attended distance learning regularly with my classmate***	66	12	6	16	/
10.	***My family and I had a better relationship during this time***	8	18	30	12	32

The table is modified from Forteza, D. et al (2021)

The truth of the hypotheses and the credibility of the study are given by the answers given by the students, where in the following we will describe the most relevant ones for fulfilling the purpose of the study.

See at:

- *Question 1: I reduced sleep because I was worried all the time*

The data from the students' answers show us that the biggest percentage in the reduction of sleep during the pandemic was 'A lot' with 14 students (24%), so we notice that most of them have been worried all the time during the pandemic. Then, 17 of them (28%) answered with 'Somewhat', while 6 students (10%) answered with 'Not at all', so it is a very small percentage, we then have 8 students (14%) with the answer ' A little and we have the largest percentage of answers 'Moderate'
with only 5 students (8%).

- *Question 3: I became more demotivated during the pandemic*

In this very important question for the study, we have the largest percentage of
'A lot' with 24 students (40%), 16 students (26%) with 'Somewhat', we have a small percentage with the answer 'Moderate' with 2 students (4%). Then, the answer 'a little' was given by 16 of them (26%) and 'Not at all' by only 2 students (4%).

- *Question 5: I was able to complete my tasks*

The students gave answers with the highest percentages of 'Not at all' regarding that they were able to complete their tasks, with a total of 28 students (56%), and the smallest percentage is also affirmative with only 2 students (4%). From this, we can see that the dyscalculic children had difficulty completing the tasks they had in online learning.

- *Question 8: I fight with my family about my homework*

The results show us that the largest percentage of students have a fight with their families for homework, where 28 students (46%) answered with 'Moderate' and the smallest percentage answered 'A lot' with answers out of 6 students (10 %).

- *Question 9: I was regular at distance learning with my classmate*

The table shows real results regarding regular online learning by dyscalculic children. From a total of 60 students surveyed, 39 of them (66%) answered with 'Not at all', so they have not been regular, 7 students (12%) with 'A little', 4 of them (6%) with 'Moderate' and only 10 students (16%) answered with 'Somewhat'. In this question, we do not have any answers from students with level 5 (A lot).

- *Question 10: I and my family had a better relationship together*

The purpose of this question was to see this as a positive impact of the COVID-19 pandemic and to get the students' opinions on whether they had established good relationships with each other during that time. The results confirm this, where we see that 19 (32%) of the students answered with 'A lot', so they have created better family ties, and 7 of them (12 %) have created 'Somewhat' ties between themselves. We also have a large percentage answering 'Moderate' with 18 (30%), then 11 students (18%) with 'A little', and with the smallest percentage we have only 5 students (8%) with 'Not at all'.

In the following, we have some of the answers of the parents participating in the research
Question 1 for parents: How did your child experience when he had to connect to online learning?

***Parent 1**: The moment when the teacher set the time, he didn't know what time he had to get up and he panicked if he would manage to be there.*

***Parent 2:** In Math, he never wanted to stay because he got nervous when they did the tasks on the whiteboard that appeared on Zoom. As soon as the online lesson was over, he would skip all the assignments out of boredom.*

Question 2 for parents: How did your child do his tasks during the COVID-19 panaemic and with whom did he do them?

***Parent 1**: The teacher connects to Zoom only with him and they had fractions in the syllabus. We learned them with pizza by dividing it into equal parts, with apples and plastic plates and it was a lot of fun. But, he remembered for a short time and when he had to present them with pictures or numbers, he got irritated.*

***Parent 2:** He did his homework with his father, who is a teacher. With increased care and games, they did the tasks, it had a very positive effect and they worked willingly.*

Question 3 for parents: How did the COVID-19 pandemic and distance learning affect your child's learning difficulties?

***Parent 1, 3, 5, 6, 8**: It had a negative impact because the isolation was hard for him because he couldn't even listen to us when we asked him to bring us the measure of something or to put something in order because he knew he wouldn't succeed.*

-It was a difficult period for all of us because there was no attention to anything and there was not enough commitment or support from the school for children like this.

-It has further worsened the difficulty he has in math.

Parent 2, 4, 7:

To some extent, it had a positive impact because we had enough time to deal with it and treat it with the recommended forms, always in consultation with the school's teacher and pedagogue.

Conclusions and recommendations

Children with dyscalculia face accompanying problems every day during their lives as a result of dyscalculia and they encounter a misunderstanding or lack of support from parents, teachers, and the social circle in general, where they are often approached inappropriately.
Meanwhile, from the result of the study, it was noticed that students with learning difficulties do not participate equally during virtual meetings between teachers and students, due to teachers not inviting them to do so although they have not been regular in their lessons.
The lack of implementation of the PIA, the dysfunction of the pedagogical triangle, the lack of knowledge of the use of technology, the lack of children's concentration, the parents' lack of information about the treatment of this difficulty, and the lack of helpful methods for the treatment of dyscalculia were some factors that stressed and demotivated dyscalculic children even more in overcoming their difficulties.
The results showed that distance learning was unsuccessful for these children because there was a lack of understanding on the part of the teachers and the negligence of the relevant institutions to engage the appropriate people to deal specifically with children with learning difficulties. The study brought an insight into the challenges that dyscalculic children had during the pandemic, especially during distance learning, and the hypotheses are confirmed that the period was challenging for these children and affected their emotional and psychological state, as well as the non-development of treatment theirs for dyscalculia.
On the other hand, from the answers of the parents and the students, it was found that the COVID-19 pandemic had a positive impact on distance learning for some children, as the parents engaged in games, activities, and different forms of the treatment of their children and had the time and opportunity to help him because they were closed. From this, we understand that the cooperation of parents, teachers, pedagogues, psychologists, and all the actors who deal with these categories, brings a satisfactory result to the children regardless of the circumstances.
Also, the study concluded that the quarantine period of dyscalculic children also challenged their mental state where most of them had sleep problems as a result of their concern for failure or lack of commitment in maintaining distance learning together with the teacher and classmates. Another challenge faced by these children was the lack of motivation and the fight with their family members for their assignments because they have not been able to complete their assignments and most of them have not found proper support or treatment from their family members for the difficulty they have in mathematics.
Therefore, it is very important to cooperate with the parents of these children and properly inform the parents and teachers, as well as what are forms of support and activities necessary for the easy overcoming of their children when they have dyscalculia because dyscalculia is not the inability to learn of mathematics but it is to learn mathematics differently, and as such it is recommended that the various centers and the appropriate persons in this field do awareness campaigns for the people in general about dyscalculia since unfortunately very little is mentioned and known about it.

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