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Post Pandemic Literacy Scores among Learning Disabled Adolescents

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ABSTRACT

A study was conducted among Learning Disabled Adolescents (N=51) with age ranging from 11 to 16 years by administering Raven's Standard Progressive Matrices, Schonell's Reading Test and Schonell's Spelling Test. The study aimed to test whether IQ score is dependent on reading score and spelling score. The hypothesis of the study is that there is no significant difference between IQ score and reading and spelling score. A regression analysis was performed and the result proved that the IQ score is dependent on reading score and spelling score with a p value at 0.01 level ; thus hypothesis was rejected. Observations of the study concluded that reading score and spelling score act as a predictor to measure intelligence among Learning Disabled Adolescents. Though learning disabled adolescents are intellectually average, there is likelyhood that the pandemic has reduced their literacy level leading to poor intelligence quotient and hence, contributing to the Matthew effect that poor readers get poorer. Further studies are required to analyze the pattern of scores before covid and post covid situations.

Keywords: *Intelligence Test, Learning Disability, Schonell's Reading Test, Adolescents*

INTRODUCTION

Learning Disabilities Association of Canada, 2015 defines Learning Disabilities as a disorder resulting due to impairment in one or more processes related to perceiving, thinking, remembering or learning. These include, but are not limited to language processing; phonological processing; visual spatial processing; processing speed; memory and attention; and executive functions (e.g., planning and decision making).

With covid 19 outbreak, a massive increase in virtual online classes happened during the past 2 years from 2020 to 2022. As a part of the new norms, new behaviors have emerged like work from home, virtual classes among people in every part of the world.

In India, the entire education turned to online classes during pandemic (Mishra et al., 2020). Students with learning disabilities faced problems pertaining to attention, distractions, lack of physical development during the pandemic (Khanna & Kareem, 2021).

But, a question needs to be answered i.e. the effectiveness of virtual classes in improving the basic skills like reading (Spector, 2021) ? As we are treading towards an era under the influence of technology, the impact of the same in academics is an issue of concern. The question to be addressed is the influence of virtual classes on reading and spelling areas of academics especially among learning disabled adolescents. The concern is on the learning outcome of the curriculum due to pandemic and virtual classes (Navaneeth & Siddiqui, 2022).

Adolescents with learning disabilities have trouble in reading and spelling which contributes to poor performance in academics. With remote learning, the standard of education faced a reduced reach to cater to the needs of learning disabled adolescents. During the covid 19 pandemic, the education system has seen an increase in the number of learning disabled adolescents as well (Angode & Ressa, 2021). It can be related to the surge to remote learning for the significant increase in the troubled reading and spelling activities.

The core of academic success rely greatly on reading and spelling activities. Reading and spelling contributes to the overall literacy, academic writing and a good communication. Online learning has affected the areas of concentration especially among learning disabled secondary school students (Walters et al., 2022).

Poor reading and spelling scores could also affect the intellectual level of a child (Thomson, 2003). Though intellectual level is not dependent on the literacy level, the ability to communicate, solve a problem and make a decision might get hampered if literacy level is poor leading to poor socio-psychometrics (Stanovich, 1999).

OBJECTIVES

Aim of the current study was to find out whether reading and spelling could predict intelligence among learning disabled adolescents. Adolescents with learning disabilities are identified with normal intelligence but with a troubled academic background. Thus with the virtual classes and two years of study pattern at home, the ability to communicate, solve problems and make a decision have been challenged. This is a major concern to predict intelligence among both normal and learning disabled adolescents. Since learning disabled adolescents are poor in academics in general, the covid 19 situation has worsened their intellectual level as well. Hence their intellectual level could be predicted with reading and spelling scores.

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Theory and Need for the Study

In Sri Lanka, students with dyslexia are on the verge of becoming poor readers further, thus contributing to the Matthew Effect (Hettiarachchi, 2021). The Matthew effect was first coined by Walberg and Tsai in 1983 but it was first used by Stanovich in 1986. Stanovich said that those who read well will continue to do so and those who do not read well are unlikely to continue to become good readers (Hempenstall, 2022). Reading and literacy variances relate much to the cognitive differences especially verbal intelligence (Stanovich, 1993). The Matthew effect is strongly with learning disability (Tzouriadou & Tzivinikou, 2021).

With the pandemic and virtual classes, one can be apprehensive over the development of this Matthew effect affecting adolescents with learning disability in becoming poorer in reading and spelling which is affecting their intellectual level as well.

HYPOTHESIS

There is no significant relationship between reading and spelling scores and intelligence score.

Al-Qadri et al (2021) summed up the classification of learning difficulties such as reading difficulties, writing difficulties, expression difficulties, calculation difficulties, and general study difficulties among the school students at primary level in Sana'a City, Yemen accounting to be prevalence factors for various academic learning difficulties.

Peterson et al (2021) identified learning disabled faced difficulties in 5 academic domains such as basic reading, reading comprehension, basic math, math problem solving and written expression.

Capin et al (2021) analyzed the reading comprehension levels of fourth grade students who also experienced cognitive difficulties. The results showed that poor performance on reading factors could be a predictor for cognitive attributes.

Soriano-Ferrer et al (2021) examined the psychoeducational impact of Covid 19 quarantine in Spain among learning disabled children and it was identified that the children had less reading activity and less reading motivation during quarantine.

According to Stanovich (1986), the Matthew effect is the ability of a child, who reads well will read more and they obtain higher IQ scores whereas poor readers score low in reading and in IQ. Stanovich has also specified that IQ scores reduce overtime for reading disabled children. There are possibilities that children with learning disabilities score low in intelligence but perform well in reading tests (Siegel, 1999).

METHOD

The aim of this study was to identify whether reading and spelling scores predict intelligence among learning disabled adolescents.

TOOLS USED

The tools used for the study were Raven's Standard Progressive Matrices (Raven, 1936), Schonell Reading Test (Schonell, 1942) and Schonell Spelling Test (Schonell & Goodacre, 1971).

Study was conducted at Wisdomms Special School and Learning Centre, Chennai and Saraswathi Kendra Learning Centre for Children, Chennai. Students with Learning disability of these two schools were selected for the action research for the following reasons

1. Availability of the participants.
2. Permission and Cooperation provided by School's authorities.

Sample

Fifty-one Learning Disabled adolescents (34 from Saraswathi Kendra Learning Centre for Children, Chennai and 17 from Wisdomms Special School and Learning Centre, Chennai) were selected and screened for reading score, spelling score and intelligence score. The age range of the participants were 11 to 16 years. Purposive sampling method was used to select the sample.

PROCEDURE

Fifty-one adolescents with learning disability were assessed using Raven's Standard Progressive Matrices, Schonell Reading Test and Schonell Spelling Test to test their Intelligence Quotient, reading score and spelling score.

Student Ss were asked to sit comfortably in a classroom with individual chairs. Each student was given a questionnaire. Since the participants were students in the age group of 11 to 16 years, the items in the questionnaire were instructed in a student friendly manner. The students showed great interest in answering the questionnaire.

RESULTS AND DISCUSSION

Table I presents the descriptive and inferential statistics for assessing the reading score, spelling score and intelligence score using explanatory survey design.

Table 1: Mean and Standard Deviation for Age, Intelligence Score, Reading Score and Spelling Score

Variables	N	Mean	Standard Deviation
Age	51	13.35	1.60
Intelligence Score	51	28.94	8.47
Spelling Score	51	7.98	2.08
Reading Score	51	8.49	2.06

Table 1 shows that the mean IQ score is 28.94 which indicates that the participants were intellectually

impaired with the mean age of 13.35' the mean reading age is 8.49 and mean spelling age is 7.98 respectively. It implies that the participants were very poor in reading, spelling and intelligence.

Table 2: shows the regression analysis with intelligence score as the dependent variable and reading score, spelling score as independent variable

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.519[a]	.269	.239	7.39287

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	967.405	2	483.703	8.850	.001**
	Residual	2623.418	48	54.655		
	Total	3590.824	50			
**= Significant at .01 level						

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	READING SCORE	3.153	1.721	.765	1.831	.073
	SPELLING SCORE	-1.074	1.702	-.263	-.631	.531

Table II shows a simple regression that predicts the reading score and spelling score from intelligence score. Reading score and spelling score indicates a significant relation between intelligence score with F (2,48) 8.850, p 0.001, R^2 0.27, R^2_{adjusted} = 0.24. The regression coefficient (B -1.07) for spelling score indicates that for an increase in intelligence score, there is a decrease in spelling score. The regression coefficient (B 3.15) for reading score indicates that for an increase in reading score, there is an increase in intelligence score.

Thus, the hypothesis that there is no significant relationship between reading and spelling scores and intelligence score is rejected. The reading score and spelling score predicts intelligence score. The poor reading and spelling leading to intellectual impairment among learning disabled adolescents are displaying Matthew effect. The learning gap has widened between low achievers and high achievers during pandemic due to online classes (Grewenig et al., 2020). Thus, the participants with learning disability are affected due to pandemic although further studies are required to analyze the pattern of scores pre covid and post covid situation.

CONCLUSION

The results imply that the learning disabled adolescents had a mean age of 13 and indicates that they are intellectually inferior (mean IQ score 28.94), had poor reading score (mean 8.49) and poor spelling score (mean 7.98). The regression analysis demonstrated that there was a significant relationship between intelligence and reading and spelling score. Thus, for every increase in reading score, there was an increase in intelligence score (B 3.15) and for every decrease in spelling score, there was increase in intelligence score (B -1.074).

From the explanatory survey design with learning disabled adolescents, we can understand that post pandemic phase has influenced the intellectual level of adolescents

As per the criteria for learning disability, the adolescents with learning disability possess normal intelligence but poor literacy levels (Frye, 2016). Through the study, observed that adolescents with learning disabilities are having poor reading, spelling scores and intelligence scores. This can be due to the pandemic situation that has divided the gap between low achievers and high achievers and hence, priority to facilitate literacy among learning disabled adolescents is vital now, otherwise it might lead to Matthew effect by making poor readers poorer.

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