
**Role of Learning Disabilities in Academic Performance among High School Students:
Significance of Demographic Variables**

Sadia Bano¹, Shazia Yusuf^{2*}**Abstract**

The progression of any country lies on the educational progress and potential of the students. It is evident that for improving learning and quality of education, uncountable efforts and resources are spent every year but the educational standards do not meet the expected level. The present study was conducted to find out the role of learning disabilities among high school students and it also aimed to find out the relationship between learning disabilities (LD) and academic performance (AP) of high school students. For which 525 students were taken from different public and private sector schools of Rawalpindi and Islamabad. For the assessment of learning disabilities, the Learning Disabilities Checklist (LDC) (Ashraf & Najam, 2014) was used and the percentage of the marks obtained by the students in their class was taken as a representative of his or her academic performance. It was hypothesized that there would be a significant negative relationship between learning disabilities and academic performance of high school students. Results of Pearson correlation indicated that academic achievement was significantly negatively correlated with learning disabilities among high school students. Results also indicated that male students significantly scored high on reading disability as compared to female students. There was a significant positive relationship of the age with mathematical disabilities among male students with learning disabilities whereas the age was significantly positively associated with reading disabilities among female high school students. Results have important implications in the educational sector and for parental counseling and education as well.

Keywords: Academic Performance, Learning Disabilities, Mathematical Disabilities, Reading Disabilities, Writing Disabilities

Received: 07 June 2023; Revised Received: 18 August 2023; Accepted: 09 September 2023

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Introduction

Learning disabilities comprise of range of conditions that cause considerable differences in learning (Prasadh & Burle,

2022). In an educational evolution, one of the most important elements is the academic performance (Abolmaal & Mahmudi, 2013). The key indicators for the academic performance are grades, marks or scores in certain subject on mostly annual results of student are of key importance (Adane, 2013). Normally, Low and high levels are further two standards of academic achievement (Dzulkifli & Alias, 2012).

Many studies have been conducted to explore the fact that why students have low educational ambition and what are major reasons which are creating obstacles on their way towards achieving their academic goals (National Center for Learning Disabilities, 2014). These researchers identified that there are three most important factors which have

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a direct effect on student's performance. These factors are subjective or individual, educational institutional, and family factors (Nisar et al., 2017). Educators, trainers, and researchers have long been interested in exploring nonintellectual factors; however, less attention is paid to intellectual factors that play an important role in the learning process (Grimm et al., 2010). Learning disability (LD) is one of these intellectual factors which is of significant importance (American Psychiatric Association, 2013). Samuel Kirk in 1962 was the first, who used the word of learning disabilities and according to him, it includes a continuous decline in academic performance (Vaughn & Fuchs, 2006). The Fifth Edition of Diagnostic and Statistical Manual of Mental Disorders, (DSM-5) changed the word "learning disability" with "specific learning disorder" and placed it under the domain of "neurodevelopmental disorders" (APA, 2013). Reading, writing and mathematical complications are major types of learning disabilities that are witnessed in school children (Barbarese et al., 2005). These difficulties are expressed in dyslexia, dysgraphia, and dyscalculia correspondingly (APA, 2013). It has been found that a large number of students have specific learning disorders (Chacko & Vidhukumar, 2020). According to American Psychological Association (2013), dyslexia defines problems in the fluency of words, making sense of sentences, phonetics and similar-looking letters, dysgraphia associated with multiple errors in a written expression such as grammatical and spelling mistakes, disorganization of subsections and exceptionally poor handwriting and dyscalculia related to the complications in understanding calculations, numbers, equalities, use of formulas, utilization, and organization of mathematical facts. The presence of learning disabilities can be described as a risk factor in the perspective of

physical and biological, cognitive, emotional, and social development (Caprino, 2016). Academic performance of students completely deteriorates because of learning disabilities (Heath et al., 2013) and they exhibited a variety of problems included social and adjustment issues (Minister of Education, 2011).

Normally in developing countries, children's learning problems are neither judged accurately nor treated well (Ashraf & Najam 2014). Studies found that teachers have little understanding and knowledge about student's difficulties in learning (Adebawale & Moye, 2013). In junior elementary schools, till the age of 9 teachers and parents may recognize that a student wants additional provision but these students are not identified as that they are suffering from LD (Vaughn et al., 2003). As a result, learners with LD exhibits low levels of inspiration for academic performance in school (Lichtinger & Kaplan, 2015).

Among school students, several types of research on LD explored scholastic performance and address differences on the bases of major and specific types of (Balkhande & Damle, 2012). Stein (2001) found that 5% of females and 10% of the male student population is experiencing dyslexia. Similar results were reported by Shaywitz (2003) in one study in which dyslexia was 3-4 times more common in boys than girls' students. Rutter et al. (2004) validated 4 to 8 percent occurrence of reading disability in general schools in which more boys suffered from this disability as compared to girls' students.

Frequently, students with serious learning issues are receiving special education services however in each regular classroom of public and private sector schools, there may be students experiencing learning difficulties and they are neglected to prevail in their schooling and inevitably quit school early (Gandhimathi & Eljo, 2010). Among

teachers, there is usually a major lack of awareness and therefore, LD is ignored in Pakistan (Lodhi et al., 2016). Learning disabilities in an academic setting is a frequently painful experience for a student (Dombrowski et al., 2004) and in their efforts to achieve goals in school and to cope with challenges (Mason & Hedin, 2011; National Association of Special Education Teachers, 2015).

However, the academic functioning of the children will be much improved by the early identification of LD and it will enable educators to deal with such students efficiently and to help them in their studies (Ashraf & Najam, 2014). In this situation, the goal of achieving basic educational universalization and balance of instructive opportunity will be remained unfulfilled if in a regular classroom these issues are not addressed, are not perceived, unnoticed, and also disregarded (Trute et al., 2008).

In Pakistan, most of the students do not get screened for any learning disability even they are present with obvious signs and symptoms. Mostly it is considered as a non-serious and careless attitude of the student that he or she is not performing well in the exams. So, the rationale of the present study was to study such students who are in normal schools but having special needs.

The objectives of the study were as follow.

1. To find out the level of learning disability of high school students.
2. To investigate the relationship between learning disability and academic performance among high school students.
3. To find out the role of demographic variables with reference to learning disability and academic performance among high school students.

Hypotheses are given below.

1. There is a negative relationship between learning disability and

academic performance among high school students.

2. There is a significant difference among male and female high school students on learning disability.

In the present study the high school students were screened out for LD. Students were taken from the general public and private sector high schools and then to find out the relationship between LD and academic performance of students and the effect of LD on academic performance. For the assessment of learning disabilities, the learning disabilities checklist (Ashraf & Najam, 2014) was used. This checklist was originally developed by the National Center for Learning Disabilities (2007). The role of demographic variables was assessed such as the role of gender on learning disabilities of students. It also gives importance to how early identification of these issues can prevent students from development of other emotional and behavioral problems and help students to manage their learning disabilities and become able to set goals according to their abilities.

Method

Research Design

A cross-sectional study was done at different public and private sectors high schools of Islamabad and Rawalpindi.

Sample

The sample of the study consisted of 525 participants. The sample size was determined by G-Power Analysis. High school students were taken from the 2 private sector and 2 government sector schools of Rawalpindi and Islamabad. Participants of the study were selected from regular classrooms enrolled in 6-10 classes with an age range from 11 to 16 years. Students who were physically handicapped and those who were orphans were part of exclusion criteria of the present study.

Measures

The demographic sheet included information related to age, gender, class, and percentage. For the assessment of learning disabilities, the learning disabilities checklist (Ashraf & Najam, 2014) was used. This checklist was originally developed by the National Center for Learning Disabilities (2007). The percentage of the marks obtained by the students in their class was taken as a representative of his or her academic

performance. The whole process of the study was completed on the ethical grounds and APA guidelines was strictly followed. For screening purposes, class teachers were requested to report about students' learning difficulties as checklist required. Each Performa was checked individually and rated accordingly to the scoring manual. After that, the data were analyzed by using statistical package for social sciences (SPSS-20).

Results

Table 1

Psychometric Properties of Study Variables (N=525)

Variables	k	M	SD	Range		α
				Minimum	Maximum	
Reading Disability	15	14.75	9.58	0	35	.88
Writing Disability	10	5.59	4.43	0	15	.80
Mathematical Disability	10	4.52	2.92	0	10	.82

Table 1 shows alpha statistics and the alpha reliability coefficient for variables of the study. Reliability of Learning Disability

Checklist scale range from .80 to .88. This showed that the scales have sound psychometric properties.

Table 2

Learning Disabilities among Male and Female Students (N=525)

Learning Disability Status	Gender	
	Male (N= 252)	Females (N= 273)
With learning disability	115	143
Without learning disability	137	130

Results in the Table 2 shows the number males and females having learning disabilities.

Table 3

Pearson Bivariate Correlation of Learning Disabilities Checklist (Learning, Reading, Writing & Mathematical) with Academic Achievement of Students with Learning Disabilities (N=258)

	M	SD	Academic Achievement
Learning disabilities	23.77	4..08	-.12**
Reading disabilities	9.62	2.41	-.07
Writing disabilities	7.02	1.79	-.06
Mathematical disability	7.13	1.82	-.11*

* $p < 0.05$, ** $p < 0.01$

Table 3 shows the correlations between learning disabilities and academic achievement. Pearson correlation indicates academic achievement is significantly

negatively correlated with learning disabilities and Mathematical disability among high school students.

Table 4

t-test Analysis of the Learning Disabilities Checklist among Students with Learning Disabilities for Gender Differences (N=258)

Variables	Male (N= 115)		Female (N=143)		<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Reading Disability	10.80	2.50	8.73	1.71	7.86	.00	.97
Writing Disability	7.11	2.06	6.95	1.53	.52	.47	.14
Mathematical Disability	7.03	2.17	7.22	1.49	1.09	.40	.13

Table 4 shows that there is a statistically significant difference in reading disability and among male and female students.

Reading disability was high among male students ($M=10.80$, $SD=2.50$) as compared to female students ($M=8.73$, $SD=1.71$).

Table 5

Pearson Bivariate Correlation of Learning Disabilities Checklist (including subscales) with Age of Male and Female Students (N=258)

	(Male = 115) <i>M (SD)</i>	(Female = 143) <i>M (SD)</i>	Age (Male students)	Age (Female students)
Learning disabilities	24.94 (4.98)	22.83 (2.86)	-.14	.08
Reading disabilities	10.80 (2.50)	8.66 (1.86)	-.03	.16*
Writing disabilities	7.11 (2.06)	6.95 (1.53)	-.14	.02
Mathematical disabilities	7.03 (2.17)	7.22 (1.49)	.16*	-.06

* $p<0.05$, ** $p<0.01$

Results in the Table 5 show that there is a significant positive relationship of the age with mathematical disabilities among male students with learning disabilities whereas

the age is significantly positively associated with reading disabilities among female high school students.

Discussion

In the start of the current study, the screening of children was done for LD and these all

were taken from the high school which are normal main stream schools. From a sample of 525 students, 258 students were identified

as having learning difficulties in reading, writing, and mathematics. For the assessment of learning disabilities, the learning disabilities checklist (Ashraf & Najam, 2014) was used. This checklist was originally developed by the National Center for Learning Disabilities (2007).

The topic is very sensitive and neglected in Pakistan and the reason behind this is the lack of knowledge about learning disabilities among school teachers (Lodhi, et al., 2016). Most of the time the very significant topic is being ignored by the nations which end up into serious consequences many students left their education incomplete.

The study aimed to find out the results in the light of some related exploration proof. This study revealed reading, writing, and mathematical disabilities are negatively correlated and negatively affect the academic performance of students. The findings are in lined with previous literature which also found a negative correlation and indicated that the scholastic performance of high school students is greatly affected by learning difficulties (Attah, 2010; Minister of Education, 2011). Similarly, it has been found that scholastically students with LD don't accomplish a similar level as their nondisabled fellows successfully attain (National Center for Learning Disabilities, 2014). The main and obvious reason behind is the lack of proper academic opportunities which can help them enhanced their learning and achieve in academia. Another problem is that they are not provided with suitable educational aids, students with LD face challenges in advance level of education (Frazier et al., 2007).

Among students with LD, the findings of the study found significant gender differences in reading disability and showed it is higher in boys as compared to girls. The results of the study are in line with prior research in which boys are at higher risk to have these difficulties (Balkhande & Damle, 2012).

LD (reading, writing, and mathematics) is negatively correlated and is negatively affected the performance of students. Among students with LD, reading disability was high in males as compared to female students. Because of the outcomes from the present study, the expenses of LD, and the advantages of social help warrant extra investigations. The discoveries can uncover data that will provide basic to the instructive direction and achievement rates of students with and without learning problems. To enhance the generalizability of findings, a large number of samples have been collected and statically analyzed. The data of the present study was collected from schools of Islamabad and Rawalpindi only that do not reflect heterogeneity about sample characteristics in the overall country.

Conclusion

The present study highlighted the significance of the need to assess the students while considering the measures to establish a standard education. The policies are mostly made for the students but unfortunately the students are not properly assessed with references to their learning difficulties. The present study highlighted that in case if the student is having learning difficulties (including the reading, writing and mathematical) it is going to negatively affect the academic performance of the student. The reading difficulties are high in males and mathematical difficulties are more in females. With the growing age the level of difficulty also gets aggravated. With the present study results the educational system can be improved and student can be coached as per according to his or her need.

Contribution of Authors

Sadia Bano: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft

Shazia Yusuf: Conceptualization, Methodology, Writing - Reviewing & Editing, Supervision

Conflict of Interest

There is no conflict of interest declared by the authors.

Source of Funding

The authors declared no source of funding.

Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [S.Y.] upon the reasonable request.

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