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An Investigative Study of Learning Disabilities in Students Studying Computer

Anjum Naz[*], Abida Nasreen[**] Sehrish Liaquat[***] and Humna Shoukat[****]

Abstract

Learning disability is the specific form of disorder which affects the cognitive abilities of the students. Mostly primary and secondary level students have multiple kinds of learning disabilities. This study was designed to find out the reading, writing and practical skills disabilities of students studying computer at secondary level. Another objective of the study was to compare the gender based disabilities among these students. The study was descriptive in nature. Questionnaire and observation inventory were used as tools to collect data. The sample was conveniently selected from a school. Statistical Package for Social Science (SPSS) was used for the purpose of data analysis. After the analysis, the learning disabilities of the students were classified and compared gender-wise. It was found that students at secondary level have learning disabilities and significant gender differences are also prominent as both genders had different nature of learning disabilities.

Keywords: Learning, Disability, Computer

[*] Assistant University of Sargodha, Sargodha, Pakistan. E-mail: dranjumnaz2012@gmail.com
[**] Associate Professor, Institute of Education and Research, University of the Punjab, Lahore, Pakistan
[***] PhD Scholar, Institute of Education and Research, University of the Punjab, Lahore, Pakistan
[****] SST, Allied School System, Lahore, Pakistan

Introduction

Ability maybe defined as the capability to perform different tasks with awareness and willingness by the use of wisdom and abilities (Mazzocco & Thompson, 2005). God has created every person with different abilities. When a person cannot use their abilities properly and cannot work like an average person then we can say that he/she has a disability (Fuchs & Fuchs, 1998). Learning disability or learning disorders affect the student's ability of learning. Learning is important as it is a long life process. A person who cannot understand and conceive the information like a normal or average person means he has some kind of disability. The learning disability or learning disorder is the number of problems in learning and acquisition of knowledge and information about various things. Learning disability is not a matter of student's intelligence or motivation. A person having learning disability can understand and learn the things but they undergo difficulty in understanding as compared to average students. So, learning disabled students suffer trouble in learning new ideas, understanding accurate concepts and in the performance of specific skills (Adams, 1990). The term learning disability or learning disorder has been used in 1960 even though there was no single organization then which had originated a universally accepted definition. World Health Organization in 2001 defined learning disability as a worldwide problem which affects the learning of an individual.

Learning disability is not a single sort of disorder but a group of disorders which may affect the learning of an individual such as achievement, reasoning, and acceptance of ideas and the use of oral or written information (National Research Council, 1998). Learning disability especially affect the learning of the below average students (Paul, 2001). In general term learning disability is a disorder that affects the psychological process of an individual while sometimes it could affect more than one abilities of an individual i.e. reading, writing and spoken abilities etc. On the other hand, disabilities could be caused by some brain injury or developmental deficiency including hearing impairment, visual disorders and motor skills coordination etc. We cannot use the term learning disability complementarily to a physically disabled person. Learning disability is the learning disorders of any person, which develops an obstruction in speaking, listening, solving a math problem, reading texts, and writing etc. Learning disability is one of the reasons of below average achievement of a student whilst

providing them with the same learning environment (Shaywitz, 2003). Learning disability could affect the learning of an individual and his ability to understand the concepts and procedures it can be a lifelong disability and exists in every age in all regions (Hallahan (2012).

Learning disability refers to personality disorder to understand the basic skills like language and writing. These disorders affect the person's ability of reading, planning, organizing, thinking and solving mathematics operations (Cantlon, Brannon, Carter & Pelphrey, 2006). Reading disability is a condition in which learner feels difficulty in reading fluently (Shaywitz, 2003). The students having a problem in expressing the letters and words in written form and have poor handwriting which is difficult to understand is considered as writing disabled student (Badian, 1983). The students who have writing disability are called dyscalculia. Dysgraphia is a problem with expressing thoughts in written form (Paul, 2001). These students have different problems of writing; some students cannot write the words, some have poor handwriting which cannot be comprehended by the teacher. Some students have a poor self-writing ability.

Practical skills are the most important in the learning of computer. Nowadays computer and practical skills are very necessary for students but it is observed that some students have a practical disorder (Glynis, 2005). They encounter difficulty in performing some actions on the computer i.e. typing, using the mouse, of locating letters on the keyboard (Rose, Meyer & Hitchcock, 2005). They cannot perform the simple action in the computer related to their syllabus and the other practical tasks included in their syllabus.

Learning disability can cause serious learning problems in schools which consequentially affect the activities which are related to understanding and comprehension. Learning disability is a result of a psychological handicap situation caused by a possible dysfunction, an emotional or behavioral disturbance (Shaywitz, 2003). Research has identified multiple reasons for learning disabilities ranging from minor stress to long term depression etc. Some possible reasons for learning disability lie in the social and home environment of students. If these are not conducive people can develop minor learning difficulties and also major learning disabilities and disorders.

If there is a significant difference between persons' intellectual potential and actual level of performance it is clear indication of some kind of learning disability which is related to basic disorders, that may not be accompanied by central nervous system malfunctioning (Pennington, 2009) and not even generalized as mental retardation, educational or cultural deprivation, severe emotional disturbance, or sensory loss etc (Reddy, 2004) but are learning disorders which can be corrected by simple tactics. This study is an investigation to find out the nature and extent of learning disabilities present in students studying computer at the secondary level.

Research Objectives

The primary aim of the study was to find out the reading, writing and practical skills related to disabilities of students studying computer at the secondary level and the minor one is to compare the learning abilities of girls and boys studying computer as a subject at the secondary level.

Research Methodology

This study was a descriptive inquiry. The sample was purposively selected from the district Mandi Bahaudin schools. The students' age ranged between 10-15years and who had been enrolled in computer subject at secondary level comprised the sample of the study. There were four sections of computer class at the secondary level in selected school while the total number of students enrolled was 160 in all four sections in 2017.

The researcher randomly selected 80 students from all four sections of computer classes at the secondary level. Multiple tools were used to measure the disabilities of students i.e. for measuring reading disability, paragraphs from the textbook were displayed on the screen and students were invited to read aloud, while to find out the writing capacity a paragraph was provided to students and they were asked to type it. Moreover, to explore computer skills related disabilities students were assigned practical tasks and were asked to complete within the allocated time as per preset specific standards. Marking sheets were developed and used to assign score and grade to oral abilities of students. Practical ability was tested via psychomotor tasks given to students; an inventory was used to score the practical ability of students.

Data Collection and Analysis

The individual cases were observed, recorded and discussed to investigate the abilities and disabilities of students participating in the study. A uniform pattern of activities was repeatedly used with all participants of the study i.e. firstly oral test was taken, secondly written test was administered and lastly practical test was conducted to investigate computer-related skills.

The analysis of quantitative data was done by using descriptive statistics SPSS software package. Frequency and percentages were calculated and presented into tabular form. One sample t-test was used to compare the learning abilities of male and female students.

Reading disability: The reading disability of students was determined via oral test by using computer-related content from the textbook of 7thclass. Grades (A, B, C, and D) were assigned to assess the performance of students in an oral test. The students who got D and C grade were classified as disabling and below average ability students simultaneously. The results of the test are presented in the following table:

Table 1
Reading disability of students

Level of disability	frequency	Percent
Disable	6	7.5
Below average	11	13.8
Average	38	47.5
High Achiever	25	31.3

The table clearly shows that almost 20% of students were having a reading disability which depicts that they can't read a computer-related content from the textbook. Further, it also depicts that almost 50 % of students were having an average ability to read a text correctly.

Writing disability: The writing disability of students was determined via a written test where students were asked to write a short essay on the computer. Test Grades (A, B, C, and D) were assigned to assess the performance of students in the written test. The students who got D and C grade were classified as disabling and below average ability students simultaneously. The results of the test are presented in the following table:

Table 2
Writing ability

Ability level	Frequency	Percentage
Disable	9	11.3
Below average	39	48.8
Average	30	37.5
Excellent writing ability	2	2.5

The overall percentage on the writing ability indicates that there were more than 50% of the students who were performing below average. They made many mistakes in spellings, writing wrong words and letters. Only 2 % of students had an exceptional writing skill.

Practical skills

The practical skills of students were assessed via multiple practical tasks which were graded at the end to classify students' practical abilities and disabilities. Grades (A, B, C, and D) were assigned to assess the performance of students. The students who got D and C grade were classified as disabling and below average ability students simultaneously. The results of the practical tasks are presented in the following table:

Table 3
Practical skill

Level of skills	Frequency	Percent
Skills disorder	18	22.5
Below average skills	47	58.8
Average skills	13	16.3
Excellent skills	2	2.5

As far as the practical abilities were concerned, 66% of students were showed below average performance. While only 13% were having average practical skill. Only 2% of students performed well.

An overall analysis of the performance of students on all three skills depicts that students were having fewer disabilities in reading skills while in writing and practical skills a reasonable number of students were disable. It was also interesting to note that a considerable number of students were also performing below average which was also alarming.

Statistical analysis was done; t-test was applied to find out the gender wise difference of disabilities.

Table 4

Gender wise analysis

Students' abilities	Gender	N	Mean value	SD	t- value	Sig. level
Practical ability	Male	40	2.02	.800	.475	.157
	Female	40	1.95	.597		
Writing ability	Male	40	2.35	.699	.474	.637
	Female	40	2.27	.715		
Reading ability	Male	40	3.15	.735	1.289	.636
	Female	40	2.90	.981		

The mean values were relatively higher on reading ability of male students than female students i.e. male =3.15 and female=2.90. This indicates that male students were having a relatively better reading ability as compared to female students. Interestingly, on all three types of abilities male students' score showed higher mean values in comparison to the scores of female students. Data revealed a fact that male students' performance and skills were better than the female students, though the difference was not statistically significant.

Findings and Discussions

The finding of the study shows that students studying computer at the secondary level are having all kinds of disabilities i.e. reading, writing and practical skill although the extent varies. As practical and writing disabilities is more than reading disability. Further, it was found that boys have less practical skill disabilities as compared to girls at the secondary level.

The finding of the study regarding reading disability of the secondary level students studying computer showed that 8% of students were having reading disabilities. These students cannot read even a single paragraph independently. They cannot pronounce the words correctly. Phonics is the major issue for these reading disabled students. This reading disability is called dyslexia.

The finding of the result shows that students at secondary level who are studying computer are having a writing disability. They cannot write a single paragraph even a single statement without the help of a supervisor. Their handwriting was also very poor. Structure of the sentence was poor and there were too many grammatical mistakes in their written material. The results of the study showed that 11% of students had dysgraphia.

The results of the study clearly depict alarming facts regarding practical skills disabilities. These practical skills disabled students also facing problem in using computer. A research study conducted by the National Research Council (1998) confirmed the fact that one-fourth of students in every class have computer skills disorder at the secondary level.

Conclusion and Recommendations

Learning disabled person cannot show his/her worth properly and feel difficulty in learning. If we estimate the number of students having a learning disability in the classroom is almost 6 or 8/80 students. These students have different problems in learning; some students feel difficulty in reading, writing, and some students have a problem in solving the mathematical problems. Learning disability is not a lifelong problem it can be addressed effectively. Learning disability will become a serious issue if it is ignored and not given attention to. In this study, researcher diagnoses the students who have learning disabilities i.e. reading, writing, and practical disorders. Further research is needed to find out the effective ways to improve the disabilities. These learning problems can be reduced by providing continuous help and practice to such students.

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