



RESEARCH PAPER**Effects of Digital Literacy on Students' Academic Performance at Secondary Level**

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ABSTRACT

This research study explored the Effects of Digital Literacy on Students' Academic Performance at the Secondary Level in Public Schools of Lahore. The search adopted a quantitative approach to investigate the phenomenon. Variables were measured through a cross-sectional survey which provided a numerical description of the variables. This study was delimited to the only public sector secondary schools in the Lahore district. The population consisted of students from Public secondary schools in the Lahore district. A simple random sample technique was applied to decide which sample to collect data. The instruments were self-administered on a five-point Likert scale. The data were collected personally by the researcher by visiting schools. The collected data were analyzed and interpreted using the Statistical Package for Social Science (SPSS). Data were analyzed through percentage and frequency statistics. The findings of this present study show that there is a positive effect of digital literacy on student academic performance at the school level. School administrations should provide a variety of seminars, symposiums, and conference opportunities for students to increase their digital literacy in the areas of information communication and leadership.

KEYWORDS Academic Performance, Digitized Literacy, Disciplines of Digital Literacy

Introduction

The 20th century represented a time of tremendous development and expansion. The media and communications sector has been one of the most dynamic in terms of development. In most popular cultures digital technologies have become imbedded. Cell phones are broadly in practice by junior and adults. Many people are using different websites for getting information about their selected area of interest. Most of the TV programs, movies, and music are saved at many websites and easily accessible on computers, MP3 devices as well as online. People communicate instantly through electronic mail (E-mail) in the whole world. Online banking and shopping have become more common. Governments too are progressively transferring their services online or internet-based. Many social networking websites such as Web 2.0 technologies empower people to cooperate with each other through sharing and editing online content (Abbas, Hussain, & Rasool, 2019).

According to Udeogalanya (2022), the word "Digital Literacy" was originally defined by Shopova in his similarly titled book (2014). Shopova stresses the point that being digital literacy is about more than simply basic computing skills. To find out how various conceptions of digital learning are enabled and supported in different groups, Vrana (2014) place equal emphasis on the value of technology literacy. According to

Jacobson and Mackey (2013), "digital literacy is connected to thinking," and according to the Solove's et al., (2019) "digital literacy is the ability to use information and communication technologies (ICTs) to locate, evaluate, create, and disseminate knowledge."

Students who were born after 1980 are often considered to have the most exposure to digital technology as they were born within a digital environment; often known as the "Internet Generation". Hence, students in such a setting would have extensive knowledge of how to use such devices (Yildiz Durak & Seferoğlu 2020; Udeogalanya, 2022). Students nowadays are "digitally literate," according to Sari, (2022) they are always connected, have a strong sense of community, are quick to learn, and prioritize their relationships with others. Furthermore, he argued that today's pupils cannot learn effectively under the current educational system. Naz et al., (2022) discovered that digital literacy skill and students' abilities for using the Internet as a resource differs vividly, considering the gender, cultural characteristics and socio-economic circumstances of the students. The evolution of technological tools, especially digital technologies has provoked immediate and revolutionary changes in the world we understand. Due to these changes students of existing time think and process information tremendously different from their antecedents.

Educational institutions are often seen as the driving forces behind positive social change. Schools exist to aid in national development by producing the educated and skilled workforce the country needs to thrive. Education, research, and community support programs may help attain these aims Yildiz Durak & Seferoğlu, (2020). Due to its design for facilitating the acquisition of information and the creation of new discoveries, schools have risen to the peak of the educational structure (Udeogalanya, 2022).

Various research gaps have been identified. This study strengthens the existing body of knowledge by assessing the effect of digital literacy on students' academic performance at secondary level. As compared to prior studies, current study was selected for investigation in Pakistan since there is a lack of study on this topic in developing countries like Pakistan. This research helped to close a lack of research by assessing students' perceptions of their own digital literacy and how it relates to their performance. The implications of these research gaps are discovered and suggestions for future research are raised.

Literature Review

The term digital literacy was based upon various former literacies like visual literacy, technological literacy, computer literacy, ICT literacy and information literacy when these literacies become ineffective. Many struggles were adopted to explore new and unique term more applicable with digital communications and internet age. The idea of digital literacy was taken from the book of Hussaini et al; (2020) on Digital Literacy. His attempts at enlightening the idea about digital literacy is "the ability to access networked computer resources and use them" to it being "partly about understanding of other persons and our extended skills to contact them to argue issues and get help". Although, they did not present the idea of digital literacy but the favorable title of his book was criticized for interpreting various definitions of digital literacy with Hussaini et al; writing style as a cause why it did not have a direct effect. However, publication of Gilster did begin to have effect in the beginning of 21st century with other referencing his common expression of idea as strength (Yildiz Durak & Seferoğlu 2020). Meanwhile, the initiation of digital literacy it collected popularity, criticism and also gone through many stages of development by many authors who tried to explain digital literacy within their perceptions.

The study of Shopova (2014) concluded that 76% of the students had good skills and ability to work with computer for assessing information. Another study investigated by Rafi, JianMing, & Ahmad, (2019) concluded positive effects of digital literacy on the students' academic performance. Likewise, the study explored by Naz et al., (2022) about examining the relationship between digital literacy and students' achievement concluded a positive relationship between digital literacy and students' achievement.

The investigation of Udeogalanya, (2022) discovered strong positive effects about school graduation and other outcomes relevant to education field. It was also discovered that computer literacy influences the results of the students as well as the performance in other academic assignments. Similarly, the study made by Yildiz Durak & Seferoğlu, (2020) on deprived group of high school learner also discovered strong relationship among digital literacy and academic performance of the learners in an online learning program designed by the school. The research concluded that improved environment and easy access towards DL and (ICT) has positive effects on performance of the students. Sari, (2022) completed a study about examining digital literacy competency of open and distance learners of university using a survey method in Turkey and revealed that learners have only primary capabilities of digital literacy regarding usage of ICTs. Many researchers indicated that changes in the level of digital literacy hinge mainly on age and education level, whereas the effect of gender is decreasing. Digital literacy levels in young people are high in its operational dimension because young people speedily move through hypertext and have a familiarity with various types of online resources. However, the skills to critically evaluate content found online show a shortfall (Vrana, 2014).

Material and Methods

In this study, a quantitative research approach was used. A cross-sectional survey was supported in order to gather data via questionnaires. A simple random sample technique was applied to decide a sample which to collect data. Data were gathered from 214 students from public sector secondary schools in Lahore. As this research was quantitative in method and survey in nature thus questionnaire for students was used to collect information. 1st part of the list of questions assesses the study's independent variable (Digital Literacy). 2nd part of the questionnaire is consisted of three sections. This portion of the survey included of 12 items under three scales like communication related skills, Research related skills and Confidence skills. The collected data were analyzed and interpreted by using the Statistical Package for Social Science (SPSS). Firstly, data were entered in SPSSs. Then all the data were cleaned for checking the outliers and missing data. Data were analyzing in percentage and frequency statistics. Linear Regression analyses were integrated to find the effect of independent variables on dependent variables.

Results and Discussion

Table 1
Gender Information of Respondents

Gender	N	Percentage
Male	99	46%
Female	115	54%
Total	214	100%

In the table 1, designates the gender wise explanation of the sample. The table shows the number of participants, percentage of gender wise of the respondents. According to this table, female respondent N= 115 (55%) are higher than the male respondents N= 99 (46%).

Table 2
Effect of digital literacy on student academic performance

Respondents	N	R	Sig (2-Tailed)
Overall	216	.677	0.005

Predictor: (Constant) = Digital Literacy, Dependent: Variable= Student academic performance

This table 2 exhibited that of the regression analysis with digital literacy value as predictor of student performance value. This table indicated that there is a positive effect ($r = .677$; $p > 0.005$) digital literacy and student performance.

- Results showed that the female respondents $N = 115$ (55%) are higher than the male respondents $N = 99$ (46%).
- The results showed that the regression analysis with digital literacy value as predictor of student performance value. This result indicated that there is a positive effect ($r = .677$; $p > .005$) among digital literacy and student performance (greater than 3.00), which indicated that the majority of the respondents were in support of the statement.

Discussion

The goal of this research was to investigate the effect of digital literacy on students' academic performance at secondary level.

Research by Shopova (2014) evaluated that there were 800 students that filled out the survey. Students were found to have very highest levels of digitalized literacy, according to the report. Our results corroborate those of a) titled "Digital literacy of learners and its progress at School level," which found that the vast majority of students (76%) exhibited high levels of competence in using computers to retrieve information.

The results of this investigation revealed a weak negative association among digitalized literacy and students' cumulative grade point averages (CGPAs), but a high positive effect of digital literacy and students' abilities in the areas of communication, research, and confidence. The decisions from this study were corroborated by the results of Muilenberg and Berge (2005), who found that the use of digital technology caused a rise in students' self-confidence when they participated in an online educational setting. These results are consistent with those of Amiri (2009), who found that digitalized literacy had a beneficial impact on students' academics. Fairlie et al., (2010) evaluated, which found substantial favorable impacts regarding school graduation as well as other results important to the education area, lent more credence to the results of this research. Learners' digital literacy had an influence on their discoveries and their success on some other academic pursuits, as well, his research showed. These findings are consistent with those of Brown (2009), who found a favorable correlation between digital literacy and student performance.

Conclusion

On the basis of the findings in addition to the statistical analysis, a conclusion was made. The study focused on how digital literacy affected students' performance. To achieve the study's objective, the research questions were addressed using percentages, frequencies, descriptive analysis, inferential analysis, linear regression analysis. This study found that female participants tended to score higher than their compared to men. This study concluded that the majority of the students had a higher level of perceptions towards digital literacy in understanding about digital literacy, finding information through the use

of digital tools, usage of digital literacy in critically evaluating information, online interaction and online tools, managing and communicating information & collaboration and share of digital contents. The study also concluded that digital literacy had significant effects on communication skills, research skills and confidence of the students.

Recommendations

- School administrations should provide a variety of seminar, symposium, and conference opportunities for students to increase their digital literacy in the areas of information communication and leadership.
- Based on the findings of this research, authorities should organize a wide range of classes and training sessions to help learners enhance their digitalized literacy in the areas of cooperation and sharing of digital material.
- Taking into account the comments of the respondents, it is suggested that overall schools implement a complete course about digitalized literacy to better the digital level of literacies of their learners.
- This survey was conducted at overall public secondary schools in the Pakistani Punjab province. It has been suggested that similar research be conducted at institutions in Pakistan's other divisions.
- This was a cross-sectional investigation that focused on a particular instant in time. A longitudinal study could provide useful information on the factors involved.

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