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EFFECT OF DIGITAL LITERACY ON STUDENTS' PERFORMANCE AT BS LEVEL IN MULTAN

Tahira shabbir¹, Nadia Parveen², Dr Marriam Bashir³

¹MPhil linguistics, ISP Multan

²MPhil English Literature National College of Business Administration and Economics,
Multan Campus Lahore

³Associate professor of English, School of English, Minhaj University Lahore

E.mail: [1tahirashabir111@gmail.com](mailto:tahirashabir111@gmail.com), [2nadiamalik.sse@gmail.com](mailto:nadiamalik.sse@gmail.com)

[3marriambashir1@gmail.com](mailto:marriambashir1@gmail.com)

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ABSTRACT

The world is quickly transitioning towards a digital environment, and digital technologies have been embedded in most popular cultures in an irreversible manner. Every company is doing all it can to maintain its position in the online race. These technologies provide everyone the ability to succeed at their highest possible level in their respective fields, particularly education. As a result, the purpose of this research was to evaluate the influence that being literate in digital technologies has on the academic performance of students who are enrolled in higher education in Pakistan. The goals of this study were to determine the students' perceived level of digital literacy; determine the relationship between digital literacy and academic performance; determine students' levels of communication and research skills; determine students' levels of confidence; determine barriers to learning and practices of digital literacy; and determine whether or not there is a significant difference between the perceptions of students regarding digital literacy based on gender and university sector. The findings of the correlation showed that digital literacy had a substantial influence on the students' communication skills ($r = 0.305$), research skills ($r = 0.624$), and confidence ($r = 0.238$), but it had no effect on the students' cumulative grade point average ($r = 0.15$). In addition, when gender and university sector were considered separately, it was found that there was no discernible variation in the students' opinions of the importance of digital literacy aspects. The future researchers can use this method for their researches as well.

INTRODUCTION

In this age of technology, the average person's day-to-day existence is becoming steadily more difficult as new technologies are introduced. The world is quickly transitioning towards a digital environment, and digital technologies have been embedded in most popular cultures in an irreversible manner. Every company and organization is now in line to be the first one to get online. A large number of individuals are now looking for information on a variety of websites and then sharing what they find with others who share their interests. These technologies provide everyone the ability to accomplish at their highest potential in their respective fields, notably in the area of education. Because of the prevalence of digital technology in this environment, it has been widely accepted as a principle that residents of this environment, and students in particular, are unable to compete successfully in the digital world without first acquiring the necessary abilities of digital literacy. Education-related software and computer programs, such as Microsoft Word, spreadsheets, powerpoint presentations, and numerous other statistical software packages, may be more effectively used by those who have a high level of digital literacy. This can facilitate the successful completion of academic work. Literacy in digital media is also predicted to play a crucial role in the use of the information that is available on websites, leading to a reduction in

the likelihood of referring to sources that cannot be trusted. At the academic level, it is generally understood that digital literacy may improve students' abilities to make effective use of computers and online resources in the area of education.

In the context of our nation, Pakistan, the majority of institutions concerned with education are still in the process of incorporating digital technology into their operations. Consequently, in this age of technology, students are required to make use of a wide variety of technical tools and resources for the purpose of education while they are pursuing their higher education. Students in today's contemporary world need to have a high level of digital literacy in order to realize their educational potential and accomplish their educational objectives. Because Pakistan lags behind other countries in terms of its level of digital literacy, there is an urgent need for the country to investigate the situation and make the most of the opportunities presented by digital literacy. This is because, in this day and age of rapid technological growth, digital literacy is widely acknowledged as the new standard for education. Teachers and students both have no option but to improve their level of digital literacy in order to keep up with the rapidly evolving digital world. Higher education institutions (HEIs) and national governments are both making significant efforts to create settings conducive to online learning, with the goal of increasing the degree of digital literacy possessed by the general public and by students enrolled in university programs. The majority of established nations as well as emerging countries are putting forth their best efforts to devise a vital program concerning digital literacy for the purpose of preparing both instructors and students. Furthermore, the perceptions of globalization, the global village, information or knowledge culture, e-pedagogy, e-students, and e-courses are all forming and increasing the stresses on governments, higher education institutions (HEIs), and academicians to take strong initiatives aimed at digital literacy of the masses for

the production of personnel for electronic government, electronic commerce, and electronic learning.

In addition, digital literacy refers to a set of abilities that allow students to successfully manipulate the infrastructures of electronic environments using a variety of devices, which in turn equips them to compete effectively with the problems of the 21st century. As a result of a number of trends, digital literacy has emerged as a preeminent and important aspect in the empowerment landscape of the educational sector. The most crucial factor that experts have discovered is that the world is being more permeated by digital technology. The use of electronic tools and infrastructure is now integral to the operation of the vast majority of societal domains and human pursuits. It does not imply that these technologies are transforming the societies; electronic facilities may just boost current practice by making it faster and simpler to do so. Should we also be concerned about the growing impact of these?

Will the nature of society be altered as a result of the changes? People who are able to grasp and know how to utilize e-facilities become much more successful, in terms of educational accomplishment, job forecasts, and new aspects of life. This is because the world is becoming more invaded by electronic technology. The educational system, along with those of other sectors, is moving quickly to embrace electronic methods.

On the other hand, the development of electronic devices for educational purposes has ran concurrently with, and to some degree been fueled by, a paradigm changes in approaches to teaching as well as learning. Moreover, both developments have occurred simultaneously. Electronic devices are regarded as crucial critical factors in the realization of studying environments of online communication and confident research as a result of the change toward a student-centered model of education and the models of constructivist learning. If the student is going to be successful in their studies, then it is essential that they have a strong grasp of the many technological tools that they will be using. In light of the situation described above, it is unavoidable to implement strategies for digital literacy in order to provide students in higher education levels with the tools necessary for improved performance. As a result, the emphasis of this research was on the effect that students' level of digital literacy has on their academic achievement. The second objective of the study was to analyze students' digital behaviors and levels of digital literacy, as well as the correlation between these factors and the students' academic performance, communication skills, research abilities, and levels of confidence, as well as the obstacles that students face while trying to improve their digital literacy.

LITERATURE REVIEW

According to Asadullah et al. (2023), the phrase "blended learning" was first employed in the business environment in connection to corporate training. Subsequently, it was applied in higher education, and finally, it came to be used in the teaching and learning of foreign languages. In addition, he claims that with the release of Sharma and Barrett's book *Blended Learning* in 2007, this word became widespread in the English language teaching industry. There is a divergence of opinion about the question of whether blended learning is just a

word that was invented in the corporate sector or if it can be regarded a genuine approach to the process of instructing or learning. According to the findings of the research, blended learning, which is defined as the integration of many distinct instructional approaches, has been an essential component of the training, learning, and teaching process from the very beginning. In the field of English Language Teaching, on the other hand, "blended learning" refers to any combination in which in-person lessons are complemented by the use of computer technology, which may include both online and offline activities and resources (Awdziej et al., 2023). Instruction in Multiple Languages at Once According to Cabero-Almenara et al. (2023), while BLL is a relatively recent technique in the field of language teaching approaches, it may be very intimidating and difficult for language teachers to use. When taking into consideration the definition of blended learning that was presented earlier, it is possible to infer that BLL is the thoughtful consolidation of online teaching, face-to-face teaching, and second language acquisition SLA processes to create a meaningful teaching and learning experience. However, it is still unclear how language teachers design instruction plans to achieve this goal (Chohan & Hu, 2022). In this part, a broad array of investigations relevant to the design and implementation of a blended learning course will be explored in various settings. Laghari et al. (2023) developed a paradigm for mixed forms of online education. This methodology combined traditional in-person teaching with an adaptive hypermedia courseware (AHyCo) learning management system (LMS). At the University of Rijeka in Croatia, which offers a major in Mathematics and Information Science, a survey was carried out to determine the degree of contentment felt by undergraduate students in the program.

When compared to students who completed the same coursework in the more conventional classroom setting, those who participated in the hybrid learning experience reported significantly better levels of both happiness and accomplishment in their academic endeavors. In addition to this, there was a substantial decline in the student retention rate. In order to enhance students' ability to write academic papers in English at Arab Open University, a blended course that emphasizes integrated reading and writing abilities has been developed and implemented. In this study, Web Quests (WQs) served as an important online instrument. The research used an experimental design, and it included both pre- and post-testing of the participants. Reading Research Skills Inventory (RRSI) and Writing Research Skills Inventory (WRSI), also known as the reading and writing sub-skills that need to be improved in the students who were the focus of the study, were the primary areas of concentration for the research. The findings indicated that there were statistically significant differences between the outcomes of the pre-tests and the post-tests that were administered. In addition, the reading and writing skills were integrated, which resulted in a considerable improvement in the academic writing abilities. The pupils were able to tackle the writing skills in a more methodical manner thanks to the blended course. Laghari et al. (2023) carried out a research in which in-person training was combined with the Rosetta stone software in order to improve the students' writing ability within the setting of Russia. The sample includes forty-eight students in their first year of technical study who are currently enrolled in a mixed language class. Out of them, 24 students were assigned to the control group, and the same number were assigned to the

experimental group. The individuals who volunteered to be a part of the experimental group were given the assignment to read the content that was made available on the Rosetta Stone platform and were required to do additional homework on several occasions each week. The results showed that the participants in the experimental group did better than the participants in the control group. This was due to the fact that students in the experimental group had access to the material and the ability to study whatever they wanted, whenever they wanted. According to the findings of this research, blended learning offers advantages in terms of the accessibility and flexibility of its components (TI, s2023). It is carried out by putting a lesson plan into action doing a qualitative case study. Despite the fact that the research was conducted only via an online learning management system (LMS), it nonetheless provides insightful information about mixed learning environments. They said that educators need understand how to successfully use technology into lesson planning in order to be effective. According to Shahbaz and Khushi (2023), the data showed that there are good benefits of technology integration when it is linked with beliefs of second language acquisition.

DATA ANALYSIS

The findings of an analysis of the data relating to the subject "Effect of digital literacy on the academic performance of the students at higher education level in Pakistan" are presented in this chapter. The data analysis is broken down into two distinct stages. In the first phase, the analysis of quantitative data that is based on descriptive and inferential statistics is represented. In the second step, an analysis of the qualitative data that is based on the theme analysis is offered. Next comes the examination of the qualitative data, after the study of the quantitative data. These, mutual analyses, give complete statistics regarding the students' degree of digital literacy as well as the consequences of this level on the students' academic performance. The findings are provided in tables, each with a concise explanation.

Demographic variable

| Characteristics | Groups | Frequency | Percentage |
|-------------------|---------|-----------|------------|
| Gender | Male | 300 | 50% |
| | Female | 300 | 50% |
| | Total | 600 | 100% |
| Area | Urban | 300 | 50% |
| | Rural | 300 | 50% |
| | Total | 600 | 100% |
| University Status | Public | 300 | 50% |
| | Private | 300 | 50% |
| | Total | 600 | 100% |
| Program | BS | 200 | 25% |
| | MA | 400 | 75% |
| | Total | 600 | 100% |

| | | | |
|-------------------------------|---------------|-----|------|
| Age group in years | 20-25 | 300 | 53% |
| | 26-30 | 150 | 25% |
| | 31-35 | 150 | 25% |
| | Above 35 | 0 | 0% |
| | Total | 600 | 100% |
| Digital Device used | Desktop comp: | 60 | 7.5% |
| for searching online | Laptop: | 376 | 72% |
| Material | Smart Phone: | 152 | 19% |
| | Tablet: | 12 | 1.5% |
| | Others: | - | - |
| | Total: | 600 | 100% |
| Internet Access At University | Yes: | 300 | 81% |
| | No: | 300 | 19% |
| | Total: | 800 | 100% |

Descriptive analysis of quantitative data (SQ)

Descriptive analysis is followed by Mean and Standard Deviations (SDs) for discovering how highly the students perceive digital literacy. In this regard the below criteria is adopted to judge the students' perceptions of digital literacy, communication skills, research skills, confidence level and barriers towards learning and practices of Digital Literacy.

Mean: Perceiving Degree:

Less than 1.8 -Very low

1.8 to 2.6 -Low

2.6 to 3.4 -Moderate

3.4 to 4.2 -High

4.2 and above -Very High

Table 1: Means and SDs of students' perceptions about their Level of Digital Literacy towards understanding factor

| Sr. | Statements | Mean | SD | Perceiving degree | Rank |
|-----|---|------|------|-------------------|------|
| 1 | I am aware of the kinds of people I could encounter when I go online. | 3.39 | 0.99 | Moderate | 6 |
| 2 | I am able to offer a favorable image of my digital identity when necessary. | 3.56 | 0.99 | High | 4 |

| | | | | | |
|----|--|------|------|----------|---|
| 3 | I am able to choose the appropriate instrument in order to locate, make use of, or produce information. | 3.72 | 0.90 | High | 1 |
| 4 | I am able to offer a favorable image of my digital identity when necessary. | 3.59 | 0.97 | High | 2 |
| 5 | I am familiar with the process of locating a person online, such as a specialist in the field that I have selected. | 3.38 | 0.99 | Moderate | 7 |
| 6 | I am able to validate the internet contact information provided by a person, business, or organization. | 3.26 | 1.01 | Moderate | 9 |
| 7 | I am able to determine the rightful owners of information and ideas. I discovered it online. | 3.33 | 1.05 | Moderate | 8 |
| 8 | I am able to determine whether or not the information I discover online is used by me in a lawful manner. | 3.40 | 1.03 | High | 5 |
| 9 | I am familiar with methods for protecting the privacy and integrity of digital information, such as generating and keeping strong passwords and online accounts. | 3.58 | 1.04 | High | 3 |
| | Total | 3.47 | 0.99 | High | - |
| 10 | I know about all kinds of information can be found on the | 3.91 | 0.88 | High | 1 |
| | Web | 3.79 | 0.90 | High | 2 |
| 11 | I know what kind of information can be found in an | | | | |
| | online library | | | | |
| 12 | I can search for information systematically, using | 3.70 | 0.93 | High | 5 |
| | advanced search options to limit and refine a search | 3.74 | 0.97 | High | 4 |
| 13 | I can identify and use key words commonly used in | | | | |
| | my discipline to search for information online | | | | |

| | | | | |
|--|--------------|--------------|--------------|--------|
| 14 I know when I need to change my search strategy if it is not working effectively, and know when my search is complete | 3.67 3.45 | 0.99 0.99 | High High | 6 8 |
| 15 I can use scanning/skimming techniques to quickly access the key relevant information on a web page | | | | |
| 16 I keep up-to-date with information from authoritative people or organizations by subscribing to email alerts | 3.45 | 1.03 | High | 7 |
| 17 I can use and engage with social networks, e.g. Facebook, Twitter etc | 3.74 | 1.04 | High | 3 |
| Total | 3.68 | 0.96 | High | - |

With a total mean of 3.47 and a standard deviation of 0.99, the data that is shown in table (4.2) demonstrates that the overall students' perception regarding the degree of comprehension of digital literacy was high. Statement number three, which read, "I can choose the right tool to find, use, or create information," had the highest mean score (3.72; standard deviation = 0.90), indicating a high degree of recognizing it. The discovery demonstrated that the vast majority of the pupils have an advanced degree of comprehension about digital literacy.

The statistics presented in table (4.3) demonstrate the overall students' perception about the level of digital literacy in finding information was high with a total mean of 3.68 (SD=0.96). The highest statement was number 10, "I know what kind of information can be found on the web" with a mean of 3.91 (SD=0.88) and a high perceiving degree. The finding exposed that the majority of the students had a high level of digital literacy skills regarding finding information.

CONCLUSION

Because of the advancements in technology, everyone now has the opportunity to achieve the greatest degree of success in their various disciplines, notably education. As a consequence of this, the objective of this study was to assess the impact that digital technology literacy has on the academic performance of students who are currently enrolled in higher education in Pakistan. The goals of this study were to determine the students' perceived level of digital literacy; determine the relationship between digital literacy and academic performance; determine the students' levels of communication and research skills; determine the students' levels of confidence; determine the barriers to learning and practices of digital literacy; and determine whether or not there is a significant difference between the perceptions of students regarding digital literacy based on demographic factors. The results of the correlation indicated that digital literacy had a significant impact on the students' capacity for communication ($r = 0.305$), research ($r = 0.624$), and confidence ($r = 0.238$), but that it did not have any bearing on the students' overall grade point average ($r = 0-.15$). In

addition, there was found to be no obvious variance in the students' judgments of the relevance of digital literacy features when gender and university sector were studied independently from one another. This was one of the findings of the study. This methodology is available for use by any future researchers who want to conduct their own studies.

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