Migration Letters

Volume: 21, No: S4 (2024), pp. 2008-2014

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Perceptions Of Students Regarding Effect Of Digital Education On Students' Academic Performance And Engagement At University Level

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Abstract

This study aimed to explore students' perceptions of how digital education affects their academic performance and engagement at the university level. The participants included 375 male and female MPhil/PhD scholars from various public universities in southern Punjab. Data was collected using a questionnaire, and the analysis was carried out through regression. The results showed that digital education has a significant positive impact on students' academic performance and engagement. Based on these findings, the researcher recommends the adoption of digital education at the university level to enhance learning outcomes.

Keywords *Digital education, academic achievement, engagement, University level, MPhil/PhD Scholars*

Introduction

Background of the Study

[1]Education is constantly evolving, which means that teachers must continuously develop new skills to thrive in the classroom, especially in the context of 21st-century learning that emphasizes digital methods. These modern teaching approaches focus on creating student-centered environments (Husin et al., 2016). Research has shown that many teachers in Pakistan, particularly at the university level, are struggling to adopt the updated, modern teaching strategies that are called for by the country's educational policies (Memon et al., 2023). Teachers can no longer simply be seen as "dispensers of knowledge" (Riley & Ward, 2017). Instead, they must create opportunities that help students to create, communicate, collaborate, think critically, solve problems, make decisions, and effectively use technology and information in the classroom (Smith & Gibson, 2016). To do this, teachers need the skills and resources that truly support students. This shift requires teachers to move from being knowledge transmitters to facilitators who guide students, enabling them to take control of their own learning (Canuto, 2015).

Digital Education refers to the use of technology and digital tools to enhance and support learning. This includes a range of technology-driven learning methods, such as online courses, virtual classrooms, digital resources, and interactive platforms (Haleem et al., 2022).

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Teachers' perceptions play a crucial role in how different teaching methods are implemented, as it is ultimately the teacher who decides what and how to teach (Khalaf & Zin, 2018). As a result, variations in teachers' perceptions lead to different implementations of teaching approaches, which in turn affect learning outcomes. Understanding what shapes a teacher's perspective on a teaching method is equally important (An et al., 2021). This study focuses on teachers' perceptions, motivation, and experiences with project-based learning (PBL) as a modern instructional approach.

Studies suggest that teachers in private schools are more likely to adopt modern teaching methods to continue their professional development (Muir et al., 2021). Their motivation is often extrinsic, driven by school management's emphasis on updating teaching strategies to meet current educational needs. Failure to comply with these expectations can lead to consequences, such as losing their jobs (Moats, 2014). Therefore, teachers often feel a strong obligation to transition from traditional to more modern teaching approaches (Hollweck & Doucet, 2020).

This study focuses on the perceptions of private school teachers toward adopting and implementing project-based learning. Secondary school teachers were chosen for the study because project-based learning is a more advanced approach, better suited for older students (Almulla, 2020). Data was collected from teachers across various disciplines to offer a broader perspective on the topic.

Globally, the educational landscape is undergoing significant change, with digital technologies playing a central role. In Punjab, Pakistan, universities are embracing digital learning strategies to transform traditional teaching methods. This shift aims to increase student engagement, improve accessibility, and provide more flexible learning options, reshaping the higher education experience in the region (Ali, 2018).

Despite the promising benefits of digital education, its effectiveness at the university level in Punjab is still being researched and debated. The advantages, such as personalized learning, access to global resources, and enhanced collaboration, are balanced by challenges like digital inequalities, infrastructure issues, and the potential for social isolation (Qureshi, 2011). This research aims to explore these issues and contribute to the ongoing discussion about integrating digital technologies into higher education in Punjab, Pakistan. By providing insights into the positive and negative aspects of digital learning, the study aims to inform policy decisions and help institutions develop effective strategies to improve educational quality in the region (Anwar & Khan, 2023).

The global educational system is undergoing a profound shift, with digital technologies playing a pivotal role in transforming traditional teaching methods. In Punjab, universities are actively adopting digital learning strategies to revolutionize education. These strategies are designed to increase student engagement, enhance accessibility, and offer flexible learning opportunities, ultimately reshaping the region's higher education landscape. Digital tools provide a unique opportunity to personalize learning, remove geographical barriers, and connect students to a global learning community (Naseer, 2021).

However, the effectiveness of digital education in Punjab's universities remains a topic of ongoing research and debate. The benefits, such as personalized learning, access to global resources, and improved collaboration, are offset by significant challenges like digital inequalities, infrastructure limitations, and potential social isolation. This study will delve into these complexities, examining the impact of digital education on student outcomes, engagement, motivation, and overall satisfaction. By analyzing both the positive and negative aspects, the research aims to provide valuable insights for educational institutions and policymakers in Punjab, guiding them to make informed decisions and develop strategies to navigate the evolving higher education landscape (Naveed, A. 2013).

Wong and Wylie (2008) argue that using smart boards in the classroom can create a richer, more engaging learning experience and help build students' reading skills. Similarly, Monica Campbell and Linda Mechling (2008) found that smart board technology significantly improved the reading progress of students with disabilities. Karen Swan et al. (2008) concluded that technology enables students to overcome academic challenges and perform confidently in various exams, including math and science.

Brown Wyatt and Valencia (2011) highlight that technology helps reduce illiteracy by enhancing students' educational skills, especially in primary school classrooms. Riska Patricia (2010) suggests that top-performing students should have access to innovative and varied technology-based educational resources. Wong and Wylie (2008) also discuss the concept of an "intelligent classroom," where smart boards integrate various tools like PowerPoint, videos, and web pages to create a more compelling and interactive learning environment.

Statement of the Problem

This study addresses an important gap in existing research by exploring the effectiveness of digital education at the university level. While digital learning is gaining increasing attention worldwide, there is limited research focusing specifically on its impact on students' academic performance, retention rates, engagement, satisfaction, and problem-solving skills in the context of higher education. This presents an opportunity to fill that gap and provide valuable insights for educators, policymakers, and other stakeholders who are shaping the future of digital education in universities. The researcher will investigate students' perceptions of how digital education affects their academic performance and engagement at the university level.

Objectives of the study

1. To assess the impact of digital education on students' academic performance at the university level.

2. To evaluate the effect of digital education on students' engagement at the university level.

Research Questions

Research questions of the study were:

1. Does digital education have an impact on students' academic performance at the university level?
2. Does digital education influence students' engagement at the university level?

Hypotheses

Hypotheses of the study were:

H01: Digital education does not have a significant effect on students' academic performance at the university level.

H02: Digital education does not have a significant effect on students' engagement at the university level.

Significance of the Study

This study is highly significant as it aims to explore the impact and effectiveness of digital education at the university level. In a time of rapid technological advancement, understanding how digital tools affect students' academic performance, retention, engagement, satisfaction, and problem-solving is crucial for educators, administrators, and policymakers. The findings of this research could play a key role in informing strategic decisions, guiding the development of effective digital education policies, and supporting the implementation of targeted strategies to improve the quality of higher education. By filling this knowledge gap, the study will contribute to academic discussions and empower educational stakeholders to create a more responsive, inclusive, and technology-driven university environment.

Delimitations

1. This research was limited to public sector universities in the southern areas of Punjab.
2. This study focused exclusively on the university level and did not explore digital education in other educational settings.
3. The study was conducted within a specific timeframe, which may not fully reflect the long-term effects of digital education.

RESEARCH METHODOLOGY

Research Design

For this study on the impact of digital education at the university level, a descriptive research design was used to systematically collect, analyze, and interpret relevant data. This approach is ideal for gaining a detailed understanding of the current state of digital education practices within university settings, specifically within the universities selected for this research. The study will provide a thorough examination of several factors, such as student learning outcomes, engagement levels, motivation, and overall satisfaction with digital education.

Population of the Study

The study focussed on M.Phil. and Ph.D. scholars of 2023-25 and 2023-26 sessions at the following universities: Islamia University, Bahawalpur; The Ghazi University, Dera Ghazi Khan; Bahauddin Zakariya University, Multan; and Khawaja Fareed University of Engineering and Information Technology, Rahim Yar Khan.

Population of the research study

Category	PhD Scholars	MPhil Scholars	Total
Male	2480	4332	6812
Female	2040	4210	6250
Total	4520	6342	13062

Source: https://hed.punjab.gov.pk/public_universities

Sample and Sampling Technique

The sample was determined using the Krejcie and Morgan (1970) formula, and the sampling technique was stratified, considering male and female students from various public universities in the southern region of Punjab.

Sample of the study can best be illustrated in table below:

Category	PhD Scholars	MPhil Scholars	Total
Male	80	125	205
Female	60	110	170
Total	130	245	375

Research Instrument

To thoroughly evaluate the effectiveness of digital education at the university level, a structured questionnaire with a five-point Likert scale was used. The questionnaire was designed to gather insights from key stakeholders, specifically M.Phil/Ph.D. students from selected universities in the southern region of Punjab.

Data analysis

The data was analyzed using descriptive statistics, including percentage, mean, and standard deviation. For inferential statistics, correlation and regression analysis were applied.

Results

H01: There is no significant effect of digital education on students' academic performance at university level

Table 1

Model	R	R Square	Adjusted R Square	B	Beta
					p
1	.412[a]	.169	.167	0.398	0.412
				0.000	

a. Predictors: (Constant), AP

Table 1 was created to examine the potential impact of digital education on students' academic performance. The analysis showed an R^2 value of 0.169, indicating that digital education explained 16% of the variance in academic performance. Additionally, the coefficient (B) of 0.398 suggests that for every 1-unit increase in digital education, academic performance could increase by 0.398 units. Based on these results, H01 is rejected.

Table 2

H02: There is no significant effect of digital education on students' engagement at university level

Model Summary

Model	R	R Square	Adjusted R	B	Bata	p
1	.809	.654	.653	0.667	0.809	0.000

a. Predictors: (Constant), SE

Table 2 was created to assess the potential impact of digital education on students' engagement. The analysis revealed an R^2 value of 0.654, meaning that digital education accounted for 65% of the variance in student engagement. Furthermore, the coefficient (B) of 0.667 indicates that for every 1-unit increase in digital education, student engagement could increase by 0.667 units. As a result, H02 is rejected.

Conclusion

This study explored students' perceptions of how digital education impacts their academic performance and engagement at the university level. The participants included 375 male and female MPhil/PhD scholars from various public universities in the southern region of Punjab. Data was collected using a questionnaire, and the analysis was conducted through regression. The results showed that digital education has a significant effect on both students' academic performance and engagement at the university level.

Recommendation

The results revealed a significant impact of digital education on students' academic performance and engagement at the university level. Based on these findings, the researcher recommends the use of digital education at the university level to achieve improved outcomes.

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