



RESEARCH PAPER

Application of ICT Resources by Prospective Teachers: A Qualitative Perspective

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ABSTRACT

Research indicates that utilization of computer technology was under discussion across a prolonged timeframe, but there was very little information. The objective of the study was to explore the utilization of digital resources by prospective educators, investigate the role of ICT by prospective teachers, and identify the integration of ICT by prospective teachers. The study was designed using a qualitative research methodology. For the study, purposive sampling technique was used. Prospective Teachers were the population of the study. Data was collected from 15 respondents using semi-structured interviews, and the data were analyzed through thematic analysis. The research identified that, the utilization of ICT in schools varied. A considerable number of formal institutions used it, while another significant group used it to a limited extent. A smaller number of schools were reported to be fully embracing the technology in all aspects of their operations. With the help of ICTs, students became more involved in classroom activities and their participation in various class works had increased. Therefore, the school administration should provide guidance on the pedagogical utilization of digital tools for effective instructions.

KEYWORDS Information Communication Technology, Prospective Teachers

Introduction

The way that teaching and learning are traditionally conducted has changed because of the large scale utilization of computer technology (ICTs) in learning. ICTs are used by numerous educational institutions in the contemporary time to give learner competency and understanding. The utilization of computer technology as didactic aid has several advantages. ICTs make it easier for students to locate trustworthy information and assist them in visualizing conceptual ideas (Qing, 2007). ICT is defined by Ion and Andreea (2008) as computers, laptops, mobile devices, networks, software, and other devices for data processing and transmission. ICTs are seen as a means of bringing about changes in teaching methods, learner access, and learning techniques (Watson, 2005). Instructors can quickly create reciprocal actions for students over the internet, according to Holcomb and Beal (2010). According to Mercier and Higgins (2013), using ICTs increases students' academic performance. According to Voogt (2010), educators who integrate technology into their lessons usually emphasize a learner-centered approach and possess a strong sense of confidence in their pedagogical skills. Compared to educators who do not use technology, they are more actively involved in professional actions and collaboration with peers. The usage of ICTs has altered traditional learning methods; reorganizing education to better fit the current environment is advised (White, 2005). According to Olakulehin (2007), ICTs quickly take on the role of fundamental building blocks in modern society. ICTs have an impact on the educational area, and this impact on teaching and learning is undeniable (Yusuf, 2005). According to Sanchez and Aleman (2011), learners become more receptive to the implications of using ICTs. When they access, select, arrange, and

interpret data, they create new information. Students are more capable of evaluating the online course materials using ICTs. ICTs help students develop fresh ideas in various subject areas. With ICTs, students can collaborate, share knowledge, and communicate at any time or place (M. 2005). M. and Zhang (2012) carried out research to find out how future educators felt pertaining to the presence and use of ICT. It was discovered that prospective instructors only partially utilized ICTs in classrooms and that pre-service teachers lacked adequate confidence with their use. Peeraer and Van Petegem (2011) discovered that teachers primarily replaced traditional teaching methods with little usage of ICTs during instruction. According to Alazam (2013), the majority of instructors were brisk users of ICTs, and their ICT abilities were at a moderate level. In spite of their lacklustre integration of ICTs into their lessons, teachers exhibited positive views regarding their use, according to Ndibalema (2014). When utilizing ICTs as a teaching tool, the majority of teachers encountered difficulties. ICT integration for lifelong learning was highlighted in both the 2009 Pakistan Policy framework and the 2009 National Criteria for Teachers Professionalism. In light of this, the researchers designed a study to ascertain how ICTs are used in Sialkot, Pakistani schools.

Research indicates that in Pakistan, there are numerous issues with utilizing digital technologies in the educational settings, including inadequate power, human resources, infrastructural development, and excessive costs (R. K., 2012). In Pakistan, school-level education was plagued by a number of issues, including a shortage of competent teachers, hardware, software, electricity, and effective project execution techniques. Three technology-related difficulties are affordance, usage of technology, and the six technological skills (P. B., 2017). Teachers can use ICT services to create an easily navigable learning environment and to support their teaching and learning activities (Shabbir, Ijaz, & Akbar, 2025). Consequently, technology could be a useful tool to help instructors and students deal with these kinds of issues. Study regarding current state of digital tools use in the instructional practice should be done in order to address these problems. What is the status of the utilization of digital tools by analysis of prospective educators in district Sialkot? This research sought to analyse the status of digital tool utilization by prospective teachers in Sialkot. This research was chiefly concerned with prospective teacher's perspective regarding the utilization of digital Technologies.

Therefore, this research adds to existed knowledge of how suitable, helpful, and sufficient teachers and student are for the method of instruction and study. So, perspective of prospective educators regarding the utilization of digital technologies was subject matter of research. Research indicates that utilization of computer technology was under discussion across a prolonged timeframe, but there was very little information. This research aims to investigate how computer technologies were used and to contribute to areas that are under explored in the literature.

Literature Review

This study was performed in secondary schools, the use of technology for teaching and learning processes. This research has been conducted in Kenya. In this research, the investigator tried to identify the use of Technology and competence, among tutors and students. The intention of research was evaluate the utilization of Technology in instructing and schooling. The period of research is from the year 2018. The data was gathered from 354 respondents, of which 322 students, 22 teachers, and 10 were principal. The nature of the research is based on a hypothesis gathering survey design. The researcher used simple random sampling. The results show that the biggest obstacle identified by 96% of respondents was inappropriate training for teaching (Odhiambo, 2018).

The factors influencing teachers' adoption and integration of ICT in the learning process have been examined in this study. This research has been conducted in Nigeria.

The aim of the study is to identify factors that may affect teachers' decision on adopting and integrating ICT into their teaching and learning processes. The period of research is from the year 2018. Qualitative case studies form the basis of this research. The results of the study show that teachers lack Technology knowledge are not in a position to make decisions on adopting and integrating technology into teaching and learning processes due to time constraints, don't have enough time for changing or inhibiting infrastructure (Lawrence, 2018).

This study was conducted on the utilization of technology for educators in various educational domains. This study has been conducted in Croatia. The plan of this research was to examine the educators' sentiments regarding using Technology in their classes, on self-efficacy and perceptions of school level barriers with regard to information and communication technologies used by teachers. The period of research is from the year 2022. The researcher uses the online survey. Data were collected from 530 respondents, of whom 530 were teachers. The results of the study have shown that, regardless of domain, perception of self-efficacy as regards use of Technology has proven to be the most effective predictor of using such information and communication technology-based activities (Zubković, 2022).

This research was conducted on the utilization of technology in classroom learning between secondary institutions. This research has been conducted in Nepal. The period of research is from the year 2021. The nature of research based on cross sectional survey. Students selected for this study. The researcher used the multi-stage cluster sampling in research. The findings show that there are high barriers to computer use; most schools lack computers based on the number of students, a large majority don't have good hardware in their laboratories and more than 70 % didn't have any IT software (Bhusal, 2021).

This study was conducted on the amalgamation and Use of technology at the Secondary School. This study has been conducted in Southwest of England. The researcher uses the case study research design. The nature of study based on primary and secondary data. Student's teachers and documents selected for this study. The findings of the research revealed the importance of the Technology and their practice (Farmery, 2019).

The research was conducted in the Gilgit Baltistan teacher training institutes; prospective teachers have views on Technology and its use for teaching purposes. Data were collected from 236 respondents, of whom 236 were prospective tutors. The researcher used the Test of e-Learning Linked Perception measure to assess attitudes towards ICT. The study found that over 90% of prospective instructors had a good attitude towards ICT. The findings revealed a considerable disparity in prospective instructor's attitudes towards Technology by institution. Although, no major differences were detected amongst universities in terms of technology utilization. The research discovered fragile positive connections between ICT use, sentiments regarding utilization of technology, course of study, and gender. Sentiments towards ICT were shown to be negatively correlated with gender. Likewise, there was a reversed link in the middle of ICT usage and gender, as well as between ICT use and study program. This study contributes to the existing literature on Gilgit Baltistan (Hussain, 2021).

This research was conducted on sought to identify opportunities and difficulties utilising technology, as well as to explore relationships and obstacles in the utilization of Technology. This research has been conducted in Sahiwal division and Pakpattan. In this research, the researcher tried to identify the possible benefits and barriers to using ICT and look at the opportunities and obstacles in using ICT. The period of research is from the year 2021. Data was collected from 250 respondents of whom 250 were teachers. The nature of the research is based on a Descriptive survey design.

This study found that teachers face substantial challenges in their professional and self-development due to a lack of technical expertise, insufficient ICT-related courses, and inadequate teacher training. (Rafeeq, 2021).

This research was conducted on practice of Technology at secondary school. The study aims at exploring the use and acceptance of ICT in secondary schools throughout Punjab province. This research has been conducted in different regions of Punjab province. The period of research is from the year 2021. Data was collected through interview and Questionnaire from instructors and students. The nature of the research is based on mixed method. The study's conclusions looked into the limitations and weaknesses in the execution of the technological initiative. It also demonstrates how additional problems, such as power shortages, might prevent students from completing their educational goals (Malik, 2021)

This research was conducted on the use of technology in the classroom and occasion and confrontation for university teachers. This research has been conducted in Lahore division. The study aimed to identify the role of possibilities and obstacles in utilizing technology in the classroom. The period of research is from the year 2021. Data was collected from 250 respondents of whom 250 were teachers. The nature of the research is based on a Descriptive research method. This study found that teachers face substantial challenges in their professional and self-development due to shortage of technical expertise, deficient ICT-related courses, and inadequate teacher training (Zaheer, 2021)

This research was conducted on utilizing of technology in teaching and learning process. The study objective to compare the use of technology between faculty in Government and private universities, assess consciousness of ICT in teaching, and investigate the impact of demographics on ICT usage. This research has been conducted in Rawalpindi/Islamabad. The period of research is from the year 2015. The respondents included academic members from educational institutions in Capital of Pakistan. Data was collected from 100 respondents of whom 100 were teachers. The nature of the research is based on a Descriptive research method. The study indicated a substantial difference in understanding between Government and private education institution about the using of Technology in teaching and studying processes (Kurshid, 2019).

Material and Methods

After reviewing literature, it was determined that the best method for accomplishing the aims and objectives of this study would be qualitative data gathering. Because of the nature of the study and its intended goals, the researcher used a qualitative research strategy. The population of the study was the prospective teacher's. Those teachers who are enrolled in the teaching education program. Prospective teachers of secondary schools in the district of Sialkot are considered a targeted population. The Sialkot region was selected as the geographical universe due to the researcher's comfort and accessibility. Data was collected from fifteen respondents employing interview guided by a flexible question framework, and the data were analyzed through thematic analysis. The researcher conducted the study while adhering to ethical principles and approved research standards and procedures. Each of them was given a consent form before to the interview, which served as proof that they had granted their permission to be interviewed by the researchers.

Results and Discussion

Largest portion of schools do not use ICT, while the same percentage uses it sparingly. However, small portion of schools have fully embraced the technology. Therefore, most schools have integrated ICT into their operations. Only one respondent

reported using multiple tools, while six stated that they only use mobile phones and PCs in schools. Digital labs in education institution were not being utilized by the administration.

Some prospective teachers use ICT tools such as projectors and mobile phones in the classroom. Two respondents use them every day, three use them once a week, and two use them after two weeks. The prospective teachers discussed the utilization of technology in the learning space. They expressed their preference for more user-friendly tools like laptops, touchscreen systems, and mobile phones. Unfortunately, the school lacks the necessary tools and resources to facilitate this. Furthermore, students are not allowed to access the computer labs. At the secondary level, many believe that incorporating technology is essential because it enhances the pedagogical process, cultivates 21st-century skills, and impacts students' learning by boosting their logical reasoning abilities.

The research was conducted on the topic entitled "Application of ICT resources by prospective teachers, a qualitative perspective". The objective of the study was to explore the utilization of digital resources by prospective educators, investigate the role of ICT by prospective teachers, and identify the integration of ICT by prospective teachers.

The findings revealed that while most schools use ICT to some extent, almost half of them use it minimally or not at all. Prior research has discovered a marginally beneficial association between gender, study program, ICT usage, and ICT attitudes. (Ikhlaiq Hussain, 2021). A recent study found that most teachers only use mobile phones and computers in the classroom, while only one respondent reported using a variety of ICT tools such as projectors, LEDs, and interactive whiteboards. Additionally, some schools have computer labs available, but they are not being utilized by the school administration. According to a prior study, there were several obstacles to computer use in schools. For example, the majority of schools did not have enough computers for the number of students enrolled, nor did they have laboratories equipped with high-quality computers. Moreover, most schools did not provide their pupils with computer software. (Bhusal, 2021). A recent study on prospective teachers showed that some of utilization digital (ICT) tools such as projectors and mobile phones in the classroom daily, while others use them once a week or every two weeks.

A recent study has identified the challenges teachers face when using digital tools in education space. These difficulties comprise an unmet of resources, not enough familiarity with ICT technologies, and utilizing ICT to manage a class. In a prior study, the results showed that teachers' decisions to embrace and incorporate digital tools into the routine of education and instruction were impacted by obstacles including such a dearth of digital tools knowledge, not enough time, resistance to change, and infrastructure restrictions. (Japhet E. Lawrence, 2018).

As a solution, respondents recommended providing training for teachers and equipping them and students with necessary ICT resources to improve the integration of technology in classrooms. This study is conducted only by prospective teachers in District Sialkot. This study focuses on qualitative aspects. Due to limited time and resources, covering a large area in this kind of small research is undoable.

Conclusion

The researchers have drawn conclusions in the light of the information acquired from the respondents. The study was designed to be qualitative, with a focus on interviews. A study explored the utilization of Information Communication among individuals who aspire to become teachers. This study's main emphasis was on prospective teachers. The study also aimed to identify the difficulties encountered by these prospective teachers when incorporating ICT tools into their classroom practices. The study investigated the role of ICT by prospective teachers.

Different sources can provide teachers with knowledge, but the most effective way for them to access teaching and learning materials and expand their pedagogical knowledge is by using ICTs. They expected that the utilization of digital tools in instruction and education would be more frequent and suitable. ICTs have significantly transformed the methods of teaching and learning.

These technologies are causing significant changes in the strategies used for teaching and how students acquire creating a conducive learning environment that can facilitate active, collaborative, creative, integrative, and evaluative learning among students. Teachers were able to make their classes more interactive and engaging by utilizing ICTs. With the help of ICTs, students became more involved in classroom activities and their participation in various classwork has increased. New approaches to teaching should be explored, but the use of ICT alone cannot enhance classroom learning. Therefore, the government and school administration should provide training on how to incorporate ICT in teaching effectively.

Recommendation

Appropriate recommendations are made for policy, and further research levels regarding pedagogy implications based on findings.

The policy merely pertains to how prospective instructors are expected to use digital technology in secondary schools. So, we would like to suggest the following recommendations after conducting this research. The government should invest in establishing ICT labs in all schools. The school should have an adequate supply of materials, including ICT tools and resources. The government should provide sufficient equipment to the schools. The school should have inexpensive and convenient Internet connectivity. The government should provide proper training to teachers on academic use of digital technology.

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