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Rashid Minas Wattoo * Muhammad Latif† Namra Munir‡

Information Communication Technologies Hauling Out University Students' Effective Learning during COVID-19: A Qualitative Study

Abstract *The COVID-19 pandemic has brought significant improvements in the world's educational practices and has become a realization of the ideal of online education, whereas COVID-19 is a global problem that affects institutions of higher education (HEIs). The present study is based on the research question: what are the challenges and benefits of ICTs for hauling out university students' effective learning in the context of the COVID-19 pandemic? The study employed a qualitative research design, and a cross-sectional analysis approach was adopted to resolve the key research question. The research sample included 20 BS and MA level students, and during a session, an interview was conducted in the form of open-ended questions. The research concluded university students need internet access 24/7 within the premises and outside the university; in fact, they require free internet access. The study may suggest that the university may provide needy students with university data bundles and laptops.*

Key Words: ICTs, Effective Learning, COVID-19

Introduction

The COVID-19 pandemic has brought significant improvements in the world's educational practices and has become a realization of the ideal of online education, whereas COVID-19 is a global problem that affects institutions of higher education (HEIs). Various changes have taken place in people's cultural, political, economic, and technological lives due to the COVID-19 pandemic; while to stop the outbreak of the pandemic, policymakers worldwide have implemented policies like the closing of schools and educational centers and the transformation into online schooling, which entail a sufficient degree of computer literacy for students and teachers.

Since the emergency steps were introduced, online learning has been an essential technique for ensuring adequate education during this pandemic era. ICT is actively seeking new information and wisdom while it extended its scope to all other branches of knowledge. It transforms the educational landscape from traditional to distance education. Distance education in today's world is gaining popularity. It is used to help individuals to get an education with the most significant output in the shortest possible time. Wright, Dhanarajan, and Reju (2009) concluded, the subject of internet importance seems stupid. The internet encourages students to connect with educated people and cultures globally in order to share ideas.

The government proposed a series of reforms, including closing all schools and the transition to online education. It was consistent with other countries' moves (Espino-Daz, Fernandez-Caminero, Hernandez-Lloret, Gonzalez-Gonzalez, & Alvarez-Castillo, 2020) as the Coronavirus spreads easier and more rapidly among the younger population. According to the UNESCO website, programs such as home-based online education have a developmental effect on childhood because of social isolation, diet difficulties and other basic nutrients, essential shortage of physical activity. According to UNESCO, a higher incidence of dropout and a slew of other effects are at risk from the transition to class and adjusting network modality without time for authentically preparing and amending the curriculum. Such a prevailing situation could lead to a crisis in the overall system of institutional

* Assistant Professor, Department of Education, University of Sialkot, Sialkot, Punjab, Pakistan.
Email: rashid_minas@yahoo.com
† Assistant Professor, Department of Education, Government College Women University Sialkot, Sialkot, Punjab, Pakistan.
‡ Assistant Professor, Department of Education, University of Education, Vehari Campus, Punjab, Pakistan.

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administration, where every educational institution relies not just on its staff but also on students' talents and abilities. Academic application of ICT has a broader influence on curriculum and curriculum. Educators and teachers are developing new practices and methods in the classroom (Salamat, Ahmad, Bakht, & Saifi, 2018). Consistent and steady advances in the use of ICT gadgets have been found that comply with market requirements. It also improves the access and expertise of teachers and learners in the learning process of the educational institution (Lwoga & Komba, 2015).

Students of internships were even to avoid teaching in schools. Instead of educating students, it was recommended that student teachers watch early childhood classroom tapes and present lessons online. Researchers observed the opportunities for student teachers to teach students online as a tutor and practical supervisor. Teaching and working directly with children would provide student teachers with more learning experiences. In order to meet practice requirements, researchers feel the need to upgrade and prepare an online training program in a short period to allow students to meet their teachers/supervisor and even teach students online. Eurydice (2011) discussed in detail how ICT helped educators to overcome barriers to pedagogical practices. The most common challenges faced in educational institutions include a lack of physical and infrastructural facilities, a minimal or non-specified new technology budget and the failure of educational guidelines needed for curricula implementation. These impediments occur because the government or another party cannot build the physical classrooms required to provide education effectively by e-learning. The value of e-learning in science and technology grows every day, from primary education to higher education.

Though we recognize that ICT adoption in higher education is unavoidable, due to Pakistan's limited budget for higher education (Abbas, Ahmed, Khalid, & Yasmeen, 2017), there is no dedicated support for cutting-edge technology and ICT initiatives in the education sector (Kayani, 2005). Following the closure of educational institutions, all approved higher education institutions were instructed to implement e-learning and management systems for online courses (Kumari, Hemalatha, Ali, & Naresh, 2020). The majority of educational institutions have been forced to temporarily suspend their online classes due to a lack of available learning and management services. Just a few of the country's largest colleges were able to begin offering online courses quickly. Much of Pakistan's based research on e-learning issues and opportunities was conducted in a traditional situation in which e-learning is optional for enhancing learning and education loops, and a few national academic institutions use emerging technology (Yousuf, 2007). Any previous study conducted in Pakistan has also published promising outcomes for distance learning. Ali and Ahmad (2011) concluded that, as with conventional learning, distance education requires good interaction between teachers and students, well-designed and current curricula, and instructors who are committed, trained, and possess the necessary skill and expertise. However, the current scenario is opposed to conventional distance learning systems, in which all higher education institutions in Pakistan are forced to follow distance learning approaches, regardless of their limited means and funds.

The most often considered and recommended means of learning is to use the internet or e-learning tools for a community of individuals. The strategies and models of e-learning systems were tested at the end of the course. According to different scholars, E-learning and its adaptation to materials and services will offer a medium and method of learning more effective than traditional classroom education (Debevc, Povalej, Verlic, & Stjepanovic, 2007). Institutions are using modern ICT gadgets to produce specific results. When we talk about emerging technologies, we mean deployment by computer programming and placement as the mechanism of designing a technological instrument, software function, or another computer-supported unit. We shall address online browsers used for all web search standards using the World Wide Web (Völter, Stahl, Bettin, Haase & Helsen, 2013).

The discovery of 3rd spike of Coronavirus following the COVID-19 pandemic has resulted in the numbers of schools and universities facing how teaching and learning consistency can be maintained when prolonged closures are faced. Afterwards, the current research will examine the use of information communication technologies for students' effective learning experiences in such exceptional times that is still persisting. The research question then led to the study: what are the challenges and benefits of ICTs for hauling out university students' effective learning in the context of the COVID-19 pandemic?

Huge masses in Pakistan depend for their convenience on ICT equipment. An analysis of the related literature provides us with insights into how ordinary people and professionals effectively use

ICT. It has been discovered that most people who use ICT instruments invest their time in entertainment. Individuals in academic circles profit greatly from ICT. In specific, individuals who pursue training via distance mode must be competent and knowledgeable through ICT use. The current study will also discuss ICT use in distance education in Pakistan. This analysis is intended to study the ICT training sessions and facilities for students at Pakistan's Virtual University.

For many reasons, the results of this study are considered very important by different actors. Firstly, the lack of prior research into how higher education institutions are trying to involve students in the COVID-19 pandemic and the closure of many universities worldwide. This study helps identify critical areas and add local literature on the subject, which will then be used by the appropriate authority to improve its educational initiatives. Lecturers can realize how important it is to improve their learning skills by practising IT and online modes. The study results would help universities develop their programs and prepare their teachers to meet the different demands of the COVID 19 pandemic with valuable insights into ICT-integrated education.

In addition, the study findings contribute significantly to the gaps in ICT education and learning between different groups and their attitudes. The results are beneficial to the faculty as they communicate with students daily, understand their attitudes, and address online management issues. It will also provide educators with critical information on the benefits of ICT-integrated educational activities and encourage them to bring them pedagogically into the classroom. They need to review the curriculum, particularly at the primary and secondary level, to incorporate ICT information in their content. This move would help train ICT-integrated pedagogy students in higher education. After that, HE institutions can create an immersive and enjoyable learning environment for all students because of the lock-ins national introduced under the COVID-19 pandemic if the recommendation for the study is implemented. Learning events are various venues, including Zoom and Google Meetings, where people interact and develop new skills. According to Stadler-Altmann (2015) affirms that it is a safer and more accurate alternative to conventional classrooms because students will learn in different contexts.

Research Methodology

A qualitative research method used for the current study; in this method, researchers further used a cross-sectional analysis approach. Participants are expected to participate in qualitative research, and the data derived from interview transcripts for this analysis was processed and coded. The exploratory aspect of the analysis resulted in a qualitative themed assessment of both the transcripts and the results. The research question was: what are the challenges and benefits of ICTs for hauling out university students' effective learning in the context of the COVID-19 pandemic? Researchers thus employed a qualitative method to examine the relevance of the sample. The sample population was composed of BS and MA students from the University of Education Vehari Campus, Punjab. A convenient sampling procedure was used to select a sample from the population. Researchers developed a list of 10 questions for the interview based on a literature review. Subsequently, the ten open-ended questions were discussed with a panel of experts, and they raised questions on the pragmatic, syntactical and grammatical aspects related to the said questions; after a detailed discussion and resolving the ambiguities, they finalized the list with six questions. After that researchers, conducted a session with the respondents and interviewed 20 (BS = 10; MA = 10) students. The detailed interview open-ended questions are as under;

1. What is students' perceptions about the use of ICT in their studies?
2. What kind of training did you receive from your institution regarding the use of ICT for your online classes?
3. Do you think that it is easy to work without proper training about the use of ICT?
4. What kind of training is necessary for your study program?
5. Which kind of facilities must be provided by the institution to facilitate learners?
6. What kind of suggestions do you have?

The data were coded according to the specified theme derived from the interview data taken from

the respondents, whereas the rectified data was placed on the word cloud, and the images were taken and interpreted in line with the need of the key research question of the study.

Data Analysis

Thematic Analysis – Word Cloud

Figure 1: Word Cloud Thematic Analysis

The figure mentioned above of word cloud analysis of themes related to challenges and benefits of ICT for hauling out students' effective learning. It allows us to understand the more usability of themes related to the research question. So, it could be observed that most trendy words are; university students, training, use of ICT, internet facility, google meet, zoom application etc. The interviews of the university students, further be elaborated in the light of the above-mentioned trendy words, university students make the use of ICT for learning purposes, i.e. learning of MS Excel, MS Word, MS PowerPoint etc. and through these programs students prepare their assignments and presentation for enhancing the effectiveness of their learning. They also focus on the dire need for training related to the use of ICT and specifically the use of software frequently used in the online teaching-learning process during COVID-19. They are also using the two software, e.g. Google Meet and Zoom application; some of the students also suggest some training sessions for the training of google meet and zoom app for attending online classes and for the online classes they essentially need internet facility at home and university premises, moreover, they have the perceptions that they need access internet facility at their doorsteps. They suggest university authorities sign MoUs with PTCL so that students can enjoy the accessible internet facility at their homes. In this digital and technological world, the accessible internet facilities will able them to interact with teachers and peers to make their study easy and practical learning.

Table 1. Responses Relevance with Themes

S. No.	Theme	Relevance
1	Use of ICT	0.999
2	Need of training	0.633
3	Google Meet	0.577
4	Internet Facilities	0.488
5	Zoom App	0.422
6	Free internet facilities	0.366
7	Lack of computer	0.333

8	MS excel	0.300
9	MS word	0.300
10	Help ICT	0.300
11	Training of LMS	2.333
12	ICT	2.333
13	Facilities of internet	0.200
14	Professional training	0.178
15	Zoom app	0.178
16	Training	0.175
17	Inclusion of ICT	0.166
18	Provision of internet	0.166
19	ICT use	0.133
20	PTCL authorities	0.133

Table 1 presents the categorical relevance of responses with themes. The number of relevance starts from 0.133 and to goes 0.999, which shows responses with low relevance to high relevance with the themes. Students' responses informed that they are eager and enthusiastic toward the use of ICT (0.999) for the fulfilment of their educational goals and objectives; they also express that they need appropriate and conducive training (0.633) for the use of ICT; further, respondents use Google Meet (0.577) and Zoom app (0.422) for the fulfilment of their online classes, but they required accessible internet facilities (0.488) and training for their proper use. Word cloud generated 50 themes for the data retrieved from the respondents' interviews, and the analysis of the data gives us the most frequently used responses from the respondents and suggests effective learning through information communication technologies.

Conclusion and Discussion

The study investigates the role of information technology platforms in promoting productive learning and the use of ICTs by university students to achieve academic goals; the researchers focused on the following primary question: In the light of the COVID-19 pandemic, what are the dangers and benefits of using ICTs to help university students study more effectively? Following the qualitative analysis of the survey, it was discovered that the respondents had much experience with and application of information communication technologies in their academic circles, but that this mechanism was changing as the COVID-19 scenario spread around the world. In comparison to the strength of their pupils, respondents found that their institution lacked computer and internet facilities. Accordingly, the study as mentioned earlier concludes that university students need internet access 24 hours a day, seven days a week, both within and outside of the university; in fact, they require free internet access, and they say that universities have signed numerous MoUs with PTCL to achieve this goal because, in pandemic conditions, they have no other choices.

It is also concluded that the university has some training sessions related to the use of Google Meet, Zoom App or LMS. Furthermore, they suggested that there need more pieces of training and orientation workshops in this regard. The respondents responded that using ICTs is more difficult for those who are analphabets in terms of technological devices and software. They also responded that they need some physical session to proceed with the procedures in the study so that they can discuss their ICTs and online issues with their teachers and authorities. Respondents also suggested that they must have the facility of the internet at their doorstep to enhance academic activities and world-class education to their students in such critical situations as the COVID-19 is prevailing all over the world. At the same time, the study of Ali, Riaz, and Wattoo (2018) explored the role of ICT in creating academic intimacy amongst secondary students. The respondents also responded that Microsoft word, Microsoft excel and Microsoft PowerPoint are using in their routine academic activities for the preparation of their assignments and class presentations.

Some students also responded that the university provides accessible internet facilities and physical resources in PCs and other related gadgets for students' convenience in their midterm and

final term examinations for students who belong to far furlong areas under the comprehensive observation of COVID-19 SOPs. On the part of the university, it is a good gesture in such a critical situation when the world is entirely shut down for physical activities. It is also concluded that students are satisfied with the technical unit of the university that facilitates the students in their technical issues and provide them urgent services in resolving the problems related to Google Meet, Zoom app and LMS. They also responded that the principal of the campus and departmental teaching staff take a keen interest in resolving their academic and technical issues during COVID-19 on an urgent basis to facilitate their academic activities. It is also concluded that ICTs should be introduced at all levels in universities because, in this scientific, technological and full of pandemics situations, we cannot go ahead in this advanced world. The globe is full of challenges and threats of bio-chemic germs or other related pandemics, so there is a dire need to train the students for future need and smooth working of academic activities. Iqbal, Ali, Hassan, and Aalamgeer (2014) pointed out in their study that the implementation and practice of ICTs in Pakistan are being improved and used from elementary and secondary schools. Equitable ICT instruction should be given at all times so that the traditional setup can be modified ahead of time. It is essential to apply practical ICT implementations that are based on theoretical knowledge. Ali, Nargis, Yasmeen, and Iqbal (2015) concluded that ICTs are needed for teaching and learning in schools and that governments would have to play a significant role in implementing ICTs in the teaching and learning process.

Recommendations

The futile use of ICTs is increasing in our culture desperately, so, in education institutions, the role of ICTs is connected to the educational goals in the context of internet connectivity, production, distribution, storage, and management needs to be broadened. The university may arrange training workshops to use modern technology educational devices and software on a fortnightly basis on a turn. Learners should be taught how technology is to be used. Statistical research for research is essential. It also may suggest that the university may provide needy students with university data bundles and laptops.

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