

E-learning implementation challenges and impact on education system of Pakistan

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ABSTRACT

The proposed study discusses the various parameters of the interest of the student towards e-learning by analyzing the primary data of the students' feedback from a questionnaire. It analyses the e-learning process among students who are using this tool in their school colleges. A stratified sampling method has been adopted for a sample size of 200 and the data has been collected from different grade students of the school, college, and universities of the Pakistan.

Further, the study provides a detailed discussion of the challenges of adopting eLearning and its impact on the ordinary education system during a Corona Virus disease outbreak around the world and especially in Pakistan. It explains how the educational institution faces the challenges of immediate and unplanned switching from ordinary learning methods to e-learning approaches in this dire situation. This article will help educational professionals, students, and policymakers for new age education.

Keywords: E-learning, Classroom teaching, Google Classroom, COVID-19 Pandemic, Students' Performance.

INTRODUCTION

Education is the prime necessity of the 21st century, it makes an individual perfect. Education helps in inculcating social responsibilities and the personal development of the people. The mainstay of education is learning; and it is a process of acquiring knowledge or skills through study, training, experience, or being taught. Any historic incident in the world always leaves an impact on education, be it a pandemic or war but every such event leaves a great impact on education (Hasan, N., & Bao, Y., 2020)

Recently, the worldwide outbreak of a dreaded virus of COVID-19 has forced the closure of educational institutions to control the spread of this virus. The unexpected plague of the deadly infection trembled the whole world. The World Health Organization has declared it an outbreak of the disease (Sohrabi et.al., 2020). This circumstance challenged the entire education system across the world and the situation forced the teaching professionals to think of alternative methods of teaching during this lockdown.

Thus, it paves the way for web-based learning, e-learning, or online learning. The classroom teaching immediately switched to an online mode (Bisht, et.al., 2020). Many educational organizations that were previously unwilling to change their traditional didactic practice had no choice but to move exclusively towards online

teaching-learning. Therefore e-learning has become quite popular among students and teachers around the world, especially due to COVID-19. Fig-1 shows the changing trend of eLearning from pre-pandemic to post-pandemic.

Except for a few elite institutions in the United States and Europe, the majority of educational institutions and colleges still use the traditional classroom teaching-learning technique (Wickman, P. O. 2014). All were following the conventional setting of face-to-face interaction/lectures in a classroom. But in today's era, education has stepped into the digital world. In which teaching professionals and students are virtually connected. E-learning is quite simple to understand and apply. Desktop, laptop, or smartphone and Internet access are the major components of this teaching method. E-learning provides rapid growth and has proved to be the best in all sectors especially education during this lockdown.

It's also worth noting that underdeveloped countries confront challenges such as poor internet connectivity, improper knowledge of ICT (Information and communications technology) usage, and weakness of content growth (Aung and Khaing 2015). Many professors, even at the university level, are still learning about content accessibility, creating animated presentations, and the use of live touchpad whiteboards. This new trend allows for technological improvements, and educators shift their culture in the organization. The

critical factor to be considered before applying e-learning is that either learner is ready and will achieve in an online platform (Guglielmino and Guglielmino 2003; Watkins et al. 2004). Although learners can show success in traditional methods and classrooms, that is not enough to accomplish that goal in an online learning circumstance (Watkins et al. 2004). Therefore, the impact of e-learning, students' attitude, and their performance in using e-learning resources, the E-learning tools, and their capabilities are also discussed in the article.

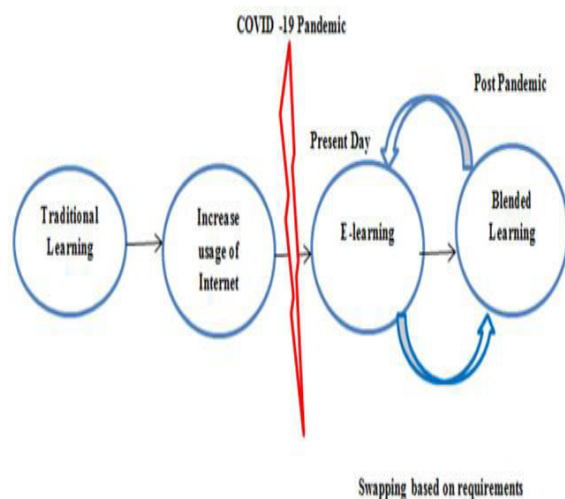


Figure 1 Necessity and changing trend of E-Learning

E-LEARNING

The technological developments and common use of computers and smartphones make distance learning easier (McBrien et al. 2009). The main names or terms given to this mode of learning are online learning, computer-mediated learning, open learning, web-based learning, blended learning, and m-learning. This utilizes smart devices like computers, tab or mobile phones associated with a network that allows it anytime and anywhere to connect with the students remotely (Cojocariu et al. 2014). The E-learning method makes the teaching-learning process more student-centered, interesting, effective, innovative, and flexible, it can be defined as the learning experiences in both synchronous and asynchronous platforms by different devices with internet access. This allows the students to study independently and interact with teachers and other students (Singh and Thurman 2019). The live lectures and real-time communication among the students and teachers make it a structured synchronous learning platform. The instant feedback and record of all the interactions make it very effective. This synchronous type learning method offers many opportunities for social

communication (McBrien et al. 2009). The main features and the requirements of the implementation of e-learning are highlighted in further sections.

Technical Features of an E-learning Platform

The following are the important desired technical features for an E-Learning platform-

- (1) video conferencing with an average strength of 40 to 50 students
- (2) Live attendance facility and the record of all the students who appeared, number of lectures delivered, etc
- (3) Screenshare and presentation feature
- (4) Lecture recording feature
- (5) Whiteboard, pen, and other related features
- (6) Exam and assignments section
- (7) Live booklet check
- (8) Artificial intelligence technique to point out the student if he doescheat during the exam
- (9) Grading system
- (10) Lecture notifications

Technical Requirements

Any e-learning tool needs some supporting devices and facilities for smooth conduction of lectures and other academic activities like exams, tutorials, assignments, attendance, etc. Followings are some important devices and facilities listed for the same-

- (1) Good internet connections
- (2) laptop/computer/mobile
- (3) touch panel for writing and solving problems

ANALYSIS OF THE EFFECT OF E-LEARNING ON EDUCATION

The study is being conducted for students in schools, colleges, and universities of Pakistan to discover more about the role of e-learning and to assess their attitudes toward the E-learning system. This can assist educators and serve as a learning paradigm for improving students' abilities and knowledge through the use of digital technologies. Several parameters were used in the analysis, which are addressed in more detail in the following sections.

Students' willingness

It is a critical aspect in determining which learning model to use based on the interests of learners. The questionnaire included 200 students from all across the world, whose responses are listed in table-1. The

data also shows that the majority of students are willing to use e-learning tools. Only 41 people out of 200 say they aren't interested for various reasons. The platform is undeniably vital and will be a future learning paradigm.

Table 1 Student's willingness towards E-learning

S.No.	Willingness level towards e learning	Respondents count	Percentage
1	Yes	143	71.5
2	No	41	20.5
3	Maybe	14	7.0

Learning level and improvements

Approximately 80% of the 200 students polled claimed that e-learning has greatly aided them in improving their self-learning abilities. They are learning through e-sources because they have no other option, according to 20.0 percent of them. In the Lockdown Period, 10.5 percent of students, or 21 out of 200, disagreed that eLearning improved skills.

Due to the impending closure of schools and educational facilities as a result of Corona, students have totally relied on e-learning for their education. Table-2 summarizes the findings gathered from the survey.

Table 2 Self skills improvements by E-learning

S.No.	Improvement in Self skills by E-learning	Respondents count	Percentage
1	Yes	160	80.0
2	No	21	10.5
3	Maybe	19	9.5

Satisfaction by online Evaluation process

Student assessment is one of the most important ways of evaluation in the educational system. To determine a student's learning ability, a variety of methods are utilised. Mock tests are a time-saving method of learning online. This is particularly true during the quarantine period. Furthermore, mock tests are a more effective and methodical technique of determining a student's abilities and knowledge. In this context, Table -3 illustrates the students' satisfaction levels with the online mock test.

Table 3 Satisfaction by online Evaluation process

S.No.	Satisfaction by online Evaluation process	Respondents count	Percentage
1	Yes	123	61.5
2	No	51	25.5
3	Maybe	26	13.0

Practical subjects teaching effectiveness by E-learning Platform

In e-learning pedagogy, theoretical principles are carried forward through a variety of application tools that make things easier for the student. It is, however, lacking from the teaching of practical courses. In a survey of 200 people, 65% reported they favour traditional teaching methods over practical sessions. Only 27.5% of them are opposed to using face-to-face teaching for practical sessions. Table 4 reveals that the majority of respondents prefer traditional teaching methods for practical teaching.

Table 4 Practical subjects teaching effectiveness by E-learning Platform

S.No.	Better method for Practical subjects teaching	Respondents count	Percentage
1	E-learning	55	27.5
2	Face to face teaching	130	65.0
3	Don't know	15	7.5

Technical Issues in e-learning

E-learning necessitates a constant high-bandwidth internet connection. This technique is very likely to fail due to a lack of connectivity, the unavailability of smart devices, and an interrupted power supply. Due to a lack of infrastructure that requires online teaching-learning, rural areas have a worse e-learning scenario than metropolitan areas, and as a result, students do not attend classes. Therefore Table 5 summarises the findings of the survey on e-learning technology challenges.

Table 5 Technological challenges in e-learning.

S.No.	Technical issues in E-learning	Respondents count	Percentage
1	Yes	105	52.5
2	No	80	40.0
3	maybe	15	7.5

Device or gadgets use in E learning

The table-6 has a list of the devices that students prefer. In a study of 200 students, 45 percent choose mobile phones for e-learning, followed by 20 percent who prefer laptops, and the remainder who chose laptop and mobile (15 percent), laptop, smartphone, and desktop (15 percent) respectively.

Table 6 Device or gadgets use in E learning

S.No.	Device used	Respondents count	Percentage
1	Laptop	40	20.0
2	Mobile	90	45.0
3	Desktop	5	2.5
4	Laptop & Mobile	30	15.0
5	Laptop & Desktop	5	2.5
6	Laptop, Mobile & Desktop	30	15.0

DISCUSSION

Various parts of the world got immediate and unplanned lockdown from first week of the March 2019 due to the high spread of COVID-19. This fatal situation has turned the process of offline learning upside down and closure of educational institutions for long time forced the educators to find a new way of teaching learning. In this situation, E-learning immersed as a revolutionary tool and became very essential for all educational institutions like schools, colleges and universities across the world. It provides an effective teaching method using various platforms.

Several android and window applications for e-learning support have been developed recently. Some are open access, while others are available paid. Table -7 lists the most common E-learning packages along with their technical specifications. Many institutes developed their own customised tools for academic use. As seen in the table, each tool has its unique set of capabilities. Technical advancement is a continual process, and IT companies are always trying to enhance it. Technical advancement is a continual process, and IT companies are working on it to make it more powerful.

The study conducted a survey on several key criteria to determine the influence of E-learning on the educational system especially in Pakistan, and the results are provided in the preceding sections. COVID-19 has been noted to present a number of problems as well as possibilities in a variety of fields. To be ready for COVID-19 scenarios, educational institutions must strengthen their knowledge and information technology infrastructure. In such a contagious situation, the notion of "work from home" becomes more important in reducing COVID-19 transmission. World should adopt inventive measures to ensure that all children must have sustainable access to learning throughout pandemic COVID-19. Students benefit much from e-learning, and it should be continued after the lockdown. The findings clearly show that this e-learning module has made e-learning inevitable options in higher education, and those students have a generally good attitude toward e-learning. These e-learning programmes are also attracting a lot of attention and are being used more frequently in academic settings.

Table 7 Applications for E-learning

S. No.	Tool/Application	Availability (Free/paid)	Features				
			Video Conferencing	Mobile Support	Feedback Comments	Content Sharing	Support for Assessment
1	Blackboard	Paid	Yes	Yes	Yes	Yes	Assignment, Survey, and Quizzes
2	ClassDojo	Free	Yes	Yes	Yes	Yes	No
3	Canvas	Free	Yes	Yes	Yes	Yes	Assignment, and Quizzes
4	Desire2Learn	Free	Yes	Yes	Yes	Yes	Assignment, and Quizzes
5	Microsoft teams	Free	Yes	Yes	Yes	Yes	No
6	Zoom	Both	Yes	Yes	Yes	Yes	No
7	Google Classroom	Free	Yes	Yes	Yes	Yes	Assignment, Survey, and Quizzes
8	Moodle	Free	Yes	Yes	Yes	Yes	Assignment, and Quizzes
9	Nearpod	Paid	Yes	Yes	Yes	Yes	Assignment, and Polls
10	Schoology	Both	Yes	Yes	Yes	Yes	Assignment, and Quizzes
11	Skooler	Paid	Yes	Yes	Yes	Yes	Assignment, and Polls
12	Team viewer	Both	Yes	Yes	Yes	Yes	No

CONCLUSION

Given the increasing usage of e around the world, it's easy to conclude that it's a new educational trend. Online learning is the best alternative for anyone who have the necessary resources. People can learn whenever they choose, depending on their availability and comfort level at home. It allows the learner to obtain the most up-to-date information at any time. It has become an essential tool for 21st century education despite these important benefits. The study's findings show the impact of e-learning, as well as students' enthusiasm in using e-learning resources and their academic performance in Pakistan. Finally, this study discovered that e-learning has grown extremely popular among students all across the world, particularly during the COVID-19 pandemic's lockdown phase, and that it will entirely replace traditional classroom or face-to-face teaching techniques.

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