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TECHNOLOGY AND LEARNING READINESS: HOW DIGITAL INSTRUCTION ENHANCES UNIVERSITY STUDENT'S ACADEMIC PREPAREDNESS

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ABSTRACT

The current study purpose is to investigate the technology and learning readiness: How digital instruction enhances university student's academic preparedness. A quantitative research method was used to examine the impact of technology on student outcomes. The main objective of the study was to identify the current use of technology-enhanced instructional tools and resources among university students. A survey research design was used, with a sample size of 346 students from virtual universities and the University of Lahore (Sargodha Campus). A self-developed questionnaire was distributed among respondents during classes. Descriptive statistics were used to analyze the status of technology integrated instructions and the learning readiness of students. The results suggested that technology should be enhanced for learning process and ensure high-quality training at higher education level. For instance, specific types of educational technology used for teaching learning process that include cell phones, laptops, social media, TV/LCD, emails, wikis, blogs, internet, one-way video conferencing, and web-based discussion forums.

Keywords: Effectiveness, Technology-enhanced, Instructions, Readiness, academic preparedness

Introduction

In term of learning and instructional situations, the changes of technology have also empowered student-directed learning. Today's students have ultimate control over their learning experiences; they can determine both the pace and the place at which learning occurs. With the opening of online courses and other distance learning programs, it is now not necessary to show up at a specific place and time to be a part of an educational experience. This would not be possible without technology (Lowerison et al. 2006). The wealth of resources available to students is astounding; the availability of online libraries, special resource projects, and databases provided by today's technology is unparalleled. And the act of learning has transcended from an individual or group activity to a community experience.

Technology has connected learners with information in a way that past generations could not imagine (Tarhini et al. 2015). Although instruction remains the same in higher education, today's teaching is practiced in a new learning environment. This environment, through electronic methods, fosters an information storage and retrieval environment that is far different from the past. In a nutshell, technology and the

internet have changed the face of education and created a new means by which students can learn and acquire knowledge (McCoy 2010). A plethora of learning tools available and an environment in which learning is not only efficient but also enjoyable embody the greatest advantages that technology has made to the field of education (Kao and Tsai 2009).

The rise of technology offers valuable learning tools and challenges. The evolving nature of technology has fostered social change and has created a global shift in the way individuals experience the world and interact with it. The widespread availability and use of technological tools and the internet has cultivated a renaissance in the field of education and has changed the methodology by which teachers transfer knowledge to students (Hashim and Tasir 2014). Information and communication technology has introduced new instructional methods, new learning tools, and new learning environments. Using the internet, for instance, students can learn and exchange knowledge at a level and rate that is unprecedented in the history of higher education. Information technology is a gateway connecting to the globe that establishes the multiplier effect of learning amid the waves of the Internet and the general pattern of the period. Students are able to enjoy the vibrant life thanks to their frequent interactions with computers, networks, and pertinent information (Freeze et al. 2010).

LITERATURE REVIEW

Role of Technology in Instructions

According to Pushkar Dubey (2020) Learning is the lifelong procedure of education new things. It is the single most important component in the advancement of anthropological development. Human values are raised by teaching, which also directors everyone in the direction of affluence and growth. An improved individual with the capacity to acquire and use new abilities will result from higher eminence. Which promotes advancement and expansion by aiding in transformations? The prospectus and methods used in the educational procedure are both variable. It is capable of meeting and adjusting the needs and interests of students; the period is not set; rather, it depends on the students' work pace. It differs from structural learning in that it may be more appropriate for what is known as non-structure teaching. Instructive technology supports students' work speed in achieving the goals.

According to Mukhula et al., (2021) the methodical procedure used to create, produce, and distribute educational resources is matched by the instructional strategy system. Instructional system design instructional technology and instructional design are commonly used interchangeably in the phrases curriculum design. The requirements of education and their methodical expansion are analyzed by an instructional scheme. When determining and defining the approaches, instructional designers frequently turn to instructional technology, especially if it is believed to facilitate the transmission of information, assistances, and assertiveness to the learner. The systematic expansion of education methodologies and teaching ideas to ensure high-quality training is known as tutoring enterprise. The complete study of students' requirements and goals for effectively enhancing course teaching schemes is known as strategy of instruction. The development of educational constituents and accomplishments, as well as the trial,

testing, and evaluation of educational and learning undertakings, are all included in teaching strategy.

Technology and Learner Readiness

According to Elsaadani and Alzahrani (2018) an undertaking's concentration and aptitude are gauged by one's willingness. When it comes to implementing technology, readiness is the ability of a company, organization, or group of people (with themselves) to embrace the advantages that come with using ICT to solve issues that they encounter. To guarantee a smooth conversion, it comprises supplying all the conditions necessary for the efficient implementation of technology in each particular scheme. When educational organizations have the appropriate technology resources at their disposal and their teachers possess the necessary assistances to make use of these resources, they are considered e-ready. Education is made more engaging and flexible for both teachers and students when equipment is used in educational organizations.

In the opinion of Kabir (2020), teachers and learners need to be three fold ready in order for e-readiness to be operative: physically (having entrance to processors, cellphones, and internet connectivity, for example), technologically (having the necessary services to use the existing amenities), and psychologically (changing one's perspective and accepting the advantages that equipment can provide).

According to Kiula et al., (2017), suggested that equipping the accessible human possessions inside the reputable procedure (organization) with the appropriate technology will enable them to work efficiently and accomplish the stated objectives. This is the component of equipment eagerness. The writers went on to say that improving the three elements entails cultivating positive human relationships, putting finest applies (procedural assistance) in place, and offering permitting technology that would enable operator responsive and can be improved in the current structure.

Therefore, in addition to providing mechanical sustenance that would inspire teachers to accept technology, it is necessary to teach individuals in the use of the accessible equipment. Attaining this triple preparedness in an emerging nation like Nigeria, however, is not without its difficulties. This is due to the fact that maximum institutes lack the funding to build new services, and those that have may not have the necessary procedural sustenance systems in abode to make it easier to integrate equipment into the curriculum. Additionally, in order for ICT to be effectively adopted by higher learning organizations, instructors must receive the necessary training and resources to enable them to use ICT in the schoolroom. It is evident that the majority of educators working in postsecondary education organizations lack the procedural know-how required to use ICT to support education.

According to Kabir et al., (2020) stated that the majority of university education professors lack the training necessary to effectively use modern ICT in the classroom. As lecturers gain experience on the work, their ability to clarify might also increase with period. Additionally, it was proposed that an organization's preparedness for adopting technology depends on the caliber of its human possessions, the accessibility of its amenities, and the level of practical provision it receives. The absence of practical

assistance for teachers, poor technology amenities, educators' perceptions of ICT utility, and educators' lack of technological services are the main reasons why tertiary organizations are unable to fully utilize equipment.

Technological Aspects of E-Learning Readiness

According to Kabir et al., (2020) explained that the most significant features that indicate organized eagerness of ICT implementation are equipment, students, gratified, and possessions. The slightest significant aspects are economic, safety, rules, and principles, according to a research conducted on the technological aspects of e-learning readiness in university learning. It was initiated that individuals, procedure and ICT have a great effect on the level of e-readiness of an organization. An organization is deemed equipped for the implementation of ICT improved knowledge when its human possessions are adequately trained in ICT, the proper procedures are implemented, and alphanumeric accommodations are available.

Another study by Kabir et al., (2020) found between other things, that the most important aspect influencing the implementation of ICT improved education in postsecondary organizations is teacher preparation. University education institutions will therefore be expressively prepared to embrace ICT if they give their employees the necessary tools, resources, and provision network.

According to Dubey (2020) stated that the accessibility of digital possessions, independent standards, organized imprinting, and attentiveness in the issue substance are all features that positively affect learners' comparative improvement of expending ICT improved education in university learning, according to research on the matter.

Statement of the Problem

The use of technology is the need of time and instructions by teacher should be integrated during teaching. Firstly readiness to learn should be checked required needs of learners'. Hence, learning readiness status must be known initially. There is a magnificent impact of instructions with the use of technology on the learner's readiness to learn and that needs to be investigated. The main purpose of the study is to evaluate the impact of technology-integrated instruction on learning readiness at the university level. Explore how personalized learning experiences influence students' readiness to engage in learning activities. Determine the extent to which technology-integrated instruction prepares students for future careers that require proficiency in technology.

Significance of the Study

The use of technology in instructions during content delivery holds importance. This study will be helpful for teachers in identifying the current practices at university level. Readiness to learn holds a prime place among several factors responsible for affecting learning. This study will find readiness level to learn with and without the use of technology during instructions while lesson delivery.

This study will be significant for all stake holders including students as well as teachers in lesson delivery and most significantly for curriculum developers and it will guide them through the process of curriculum development and adding on innovation for

attainment of objectives as they will come to know the impact of technology integrated instructions on learning readiness of learners.

Research Objectives

Following were the objectives of this research study:

To identify the current use of technology-enhanced instructional tools and resources among university students.

To assess the level of learning readiness among students in technology-enhanced educational settings.

Research Method

Polit et al (2013) Survey methodology as indicated was used. In order to get information from respondents, a survey study design will also be applied. One useful approach for looking at the traits of a big sample of people is the survey technique. A reliable technique for gathering data from a big sample is the survey method. Measures that can be quantified and represent quantitative approaches, such statistical and mathematical analysis procedures, are used to determine general rules or probabilities related to the phenomenon being studied.

Population/ sampling/ sampling technique

The population of the study will comprise all students enrolled in various programs at the University of Lahore (Sargodha campus) and Virtual University of Pakistan; this would equate to about 3000 individuals. According to the Silverman, (2010) population refers to those people who fall within the scope of the study and to whom the researcher intends to apply the study's conclusions. The sampling method will be a simple random sample of all students enrolled in all programs currently offered by the University of Lahore (Sargodha Campus) and the Virtual University

Instrument

Self-developed questionnaire will be used in this study and pilot study will be conducted. Manion and Marrison (2011) state that a questionnaire is the best option for quickly learning about respondents' ideas or views. Expert comments were used to ensure the instruments' (a self-made questionnaire) content validity.

Validity and Reliability of the Study

The pilot study was taken through an online survey. The internal consistency and reliability of the questionnaire were measured using the Cronbach coefficient (α) in the analysis of the gathered data. The questionnaire was deemed credible and suitable for data collection for the primary study, as evidenced by the high Cronbach's coefficient of 0.726 seen in the results. Twenty school instructors participated in a pilot research and answered questionnaires.

According to Polit, Beck, and Hungler (2001), a pilot study is like a "smaller version of a trial run in advance of a main study." The Cronbach's coefficient of 0.926 was determined to be sufficient for gathering all significant data. The following is a detailed discussion of factor reliability:

Cronbach's Alpha	No. of Items
0.73	38

Data analysis

Demographic information of the participants

1 Age of the participants

Table 1 showed the distribution of age in which frequency and percentage of the age of the participants were display and it is ranged from 15-20 years, 21-25 years and 26-30 years.

Age	Frequency	Percentage
15 to 20 years	104	30.1
21 to 25 years	140	40.5
26 to 30 years	102	29.5
Total	346	100.0

Table 1 shows the results that from 15-20 years 104(30.1%) of the participants were included while the range from 21-25 140(40.5%) of the participants and the 26-30 years 102(29.5%) were involved during the study.

.2 Gender of the participants

Table 2 showed the distribution of gender in which frequency and percentage of the age of the participants were display and it is ranged from male to female.

Gender	Frequency	Percentage
Male	200	57.8
Female	146	42.2
Total	346	100.0

Table 2 shows the results of gender of the participants that 200(57.8%) of the participants were male and 146(42.2%) of the participants were female.

3 Qualification of the participants

Table 3 showed the distribution of qualification of the participants in which frequency and percentage of the qualification of the participants were display and it is ranged from

Qualification	Frequency	Percentage
B:A /B;Sc /BS	160	46.2
M:A/MSC	130	37.6
MPHIL/MS	56	16.2
Total	346	100.0

Table 3 shows the results that from B:A /BSc /BS 160(46.2%) of the participants were included while the range from M:A/MSC 130(37.6%) of the participants and the MPHIL/MS 56(16.2%) were involved during the study.

4 distribution of the Universities

Table 4 showed the distribution of university in which frequency and percentage of the University of the Participants were display and it is ranged from male to female.

University	Frequency	Percentage
Public	199	57.5
Private	146	42.2
Total	346	100.0

Table 4 shows the results of university of the participants that 199(57.5%) of the participants were from public university and 146(42.2%) of the participants were from private university.

5 Semester of the participants

Table 5 showed the distribution of semester in which frequency and percentage of the semester of the participants were display and it is ranged from 1 to 4 semester.

University	Frequency	Percentage
1st Semester	81	23.4
2nd Semester	100	28.9
3rd Semester	86	24.9
4th Semester	79	22.8
Total	346	100.0

Table 5 shows the results of semester of the participants that 81(23.4%) of the participants were from 1st semester, 2nd semester 100(28.9), 3rd semester 86(24.9) and 79(22.8%) of the participants were from 4th semester.

Part 2

Table 6 Access to Resources

In order to show frequency, percentage, mean and standard deviation of the responses, participation were asked to check all the agreement level of the participants to access to resources.

Statements	M	S.D
Technology in the classroom provides me with access to a wide range of educational materials.	3.97	1.22
I feel that technology helps me find information more quickly than traditional methods.	3.84	1.16
I believe that technology allows me to explore topics in more depth.	3.79	1.13
Technology makes it easier for me to access supplementary learning materials.	3.67	1.18
I feel confident in my ability to navigate and utilize educational technology.	3.78	1.24
Technology has improved my access to resources that cater to my individual learning needs.	3.63	1.28
I prefer using technology to access educational materials over traditional methods.	3.46	1.11
I believe that technology helps me stay more organized with my learning materials.	3.69	1.31

The table 6 shows that 6.5% of the respondents were strongly disagree, 8.38 of the respondents were disagree while the 37.67% were neutral, 26.36 were agree and the 21.09% were strongly agree with the statements.

Table 7 Impact on Readiness Levels

In order to show frequency, percentage, mean and standard deviation of the responses, participation were asked to check all the agreement level of the participants to Impact on Readiness Levels.

Statements	Mean	S.D
Technology-enhanced instruction has positively impacted my cognitive development.	3.72	1.30
I believe that integrating technology into education has enhanced my cognitive skills.	3.83	1.27
The incorporation of technology in learning environments has positively contributed to my emotional readiness.	3.80	1.29
I feel more emotionally prepared to engage in learning activities.	3.75	1.28
Blended learning activities, which combine online and face-to-face instruction, enhance my understanding of course materials.	3.70	1.22
I appreciate the opportunity to access additional resources and materials online to supplement my learning in a blended learning setting.	3.76	1.23
Engaging in discussions and group activities during class time in a flipped classroom setting deepens my understanding of the subject matter.	3.78	1.26
Flipping the classroom allows me to clarify any questions or concepts I find challenging during in-person sessions.	3.71	1.26

The table 7 shows that 8.38% of the respondents were strongly disagree, 8.67% of the respondents were disagree while the 17.05% were neutral, 27.74% were agree and the 38.16%% were strongly agree with the statements.

Findings

The findings of this study were drawn after the analysis of the collected data from the sample of the study.

1. Table 1 shows the results that from 15-20 years 104(30.1%) of the participants were included while the range from 21-25 140(40.5%) of the participants and the 26-30 years 102(29.5%) were involved during the study.
2. Table 2 shows the results of gender of the participants that 200(57.8%) of the participants were male and 146(42.2%) of the participants were female.
3. Table 3 shows the results that from B:A /BSc /BS 160(46.2%) of the participants were included while the range from M:A/MSC 130(37.6%) of the participants and the MPHIL/MS 56(16.2%) were involved during the study.
4. Table 4 shows the results of university of the participants that 199(57.5%) of the participants were from public university and 146(42.2%) of the participants were from private university.

5. Table 5 shows the results of semester of the participants that 81(23.4%) of the participants were from 1st semester, 2nd semester 100(28.9), 3rd semester 86(24.9) and 79(22.8%) of the participants were from 4th semester.
6. The table 6 shows that 6.5% of the respondents were strongly disagree, 8.38 of the respondents were disagree while the 37.67% were neutral, 26.36 were agree and the 21.09% were strongly agree with the statements.
7. The table 7 shows that 8.38% of the respondents were strongly disagree, 8.67% of the respondents were disagree while the 17.05% were neutral, 27.74% were agree and the 38.16%% were strongly agree with the statements.

Discussion

The study aimed to evaluate the Effectiveness of Technology-Enhanced Instructions on the Learning Readiness of University Students.

The results of the study was similar with the study of Pushkar Dubey (2020) Learning is the lifelong procedure of education new things. It is the single most important component in the advancement of anthropological development. Human values are raised by teaching, which also directors everyone in the direction of affluence and growth. An improved individual with the capacity to acquire and use new abilities will result from higher eminence. Which promotes advancement and expansion by aiding in transformations? The prospectus and methods used in the educational procedure are both variable. It is capable of meeting and adjusting the needs and interests of students; the period is not set; rather, it depends on the students' work pace. It differs from structural learning in that it may be more appropriate for what is known as non-structure teaching. Instructive technology supports students' work speed in achieving the goals.

Another study result was similar to recent study Elsaadani and Alzahrani (2018) an undertaking's concentration and aptitude are gauged by one's willingness. When it comes to implementing technology, readiness is the ability of a company, organization, or group of people (with themselves) to embrace the advantages that come with using ICT to solve issues that they encounter. To guarantee a smooth conversion, it comprises supplying all the conditions necessary for the efficient implementation of technology in each particular scheme. When educational organizations have the appropriate technology resources at their disposal and their teachers possess the necessary assistances to make use of these resources, they are considered e-ready. Education is made more engaging and flexible for both teachers and students when equipment is used in educational organizations.

It was found that Kiula et al., (2017), suggested that equipping the accessible human possessions inside the reputable procedure (organization) with the appropriate technology will enable them to work efficiently and accomplish the stated objectives. This is the component of equipment eagerness. The writers went on to say that improving the three elements entails cultivating positive human relationships, putting finest applies (procedural assistance) in place, and offering permitting technology that would enable operator responsive and can be improved in the current structure.

Another study found that Kabir et al., (2020) stated that the majority of university education professors lack the training necessary to effectively use modern ICT in the classroom. As lecturers gain experience on the work, their ability to clarify might also increase with period. Additionally, it was proposed that an organization's preparedness for adopting technology depends on the caliber of its human possessions, the accessibility of its amenities, and the level of practical provision it receives. The absence of practical assistance for teachers, poor technology amenities, educators' perceptions of ICT utility, and educators' lack of technological services are the main reasons why tertiary organizations are unable to fully utilize equipment.

Another study found that Mukhula et al., (2021) revealed that teaching is a deliberate procedure that is closely tied to the students' academic progress. A successful learning procedure incorporates the students, a range of educational resources, relevant broadcasting, and teaching methodologies. In order to improve considerate, this results in qualitative directions where the student engages with the accomplishments and, consequently, with the instructor and peers. In order to create greatly experienced and professional educators and improve the excellence of education and teaching provided to them, it is vital to emphasize the requirement for and application of instructional ICT in faculty expansion. Instructional technology was assistance the scientists to resolve the complications to comprehend nature of problem. It also supports to advance the system of education. It adapts the prospectus and highlights on the policy concerned with coaching to teaching approach that supports in matter resolving. Teaching of technology aids in endorsing and construction training education procedure operative. It supports to accomplish the education gaps and outlines the comportment of the beginners in an eloquent. Therefore instructional technology is required to be hired for superiority learning.

Conclusions

We have included a variety of digital learning tools into our own instructional practice over the course of the previous two years in order to broaden and improve the educational opportunities available to our pupils. After doing a retrospective analysis of our activities in order to make sense out of it (Moon 2001), we came to the conclusion that the conventional method of providing instruction and education was not flexible enough to accommodate the various student populations that we had. We were able to determine, with the use of feedback from previous modules, that students needed to be more engaged and interact with the material in their courses, and more significantly, they needed to become engaged students (see Messineo et al. 2007). As a result of engaging in this process of self-reflection, we got to see that including more creative elements into the learning environments (by using technology that pupils would be comfortable with) may provide a solution for certain of the challenges that we had faced.

Students have a tendency to disconnect with traditional forms of delivery, which is especially true in big courses. It is evident that digital learning tools play a significant role in fostering engagement, particularly in these types of classes. However, digital technology may aid in enabling students to find their voices in circumstances that

might leave them feeling isolated. We are aware that some students may have a sense of being "lost in the crowd" when they are in vast lecture theatres. This, in turn, stimulates increased engagement, which ultimately results in an improved learning experience, as is obvious from the comments that we have received. One additional advantage that can be attributed to the use of electronic resources is the formation of communities of practice. These communities are comprised of students who have utilised these technologies to improve their ability to interact with one another, both within and outside of the classroom environment. In particular, synchronous technology and social media platforms make it possible for students to engage in conversation with one another, provide assistance to one another, and share the experience of learning.

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