Impact of Digital Technology on Teaching and Learning Process at University Level

DR. Rizwana Muneer[a*], Munaza Mahmood[b], Salma Bano[c]

[a,b,c]*Department of Education, University of Karachi*

[a]*Email: rizwana.faseel@yahoo.com,* [b]*Email: munaza.mahmood04@gmail.com*

[c]*Email: salmaaman10@gmail.com*

Abstract

This paper is expected to introduce the effect of advanced innovation in instructing and learning measure. The review has been directed to investigate positive and adverse consequences of using innovation inside the training area at college level. The examination technique proposed in this review is quantitative exploration through the overview. The 25 educators and 25 understudies have partaken in this review. The chi-square technique is utilized to investigate the outcomes. Through poll, the review has been investigating the impacts that understudies and instructor experience while using advanced innovation in educating and concentrating and how the two of them react to it. Subsequently the outcomes show that the exploration amplified that advanced innovation influence the nature of schooling and overburden, yet improve simplicity of social occasion data, which upgrade scholarly accomplishment. In any case, the verification isn't approving since they lean toward up close and personal learning and educating as a result of customary concerns. Out of 50 reactions 33% are utilizing google internet searcher for accumulate data and rest of others favored library for credible data. 41% understudies are less propelled towards learning. They become lethargic due to computerized innovation. Be that as it may, the advanced framework emphatically impacts the understudy's presentation in scholastics in light of simplicity of information and assets accessibility. With those arrangement, the examination featured that advanced innovation straightforwardly impacts the learning and showing measure at college level.

Keywords: digital technology; University; Teaching; Learning process.

1. Introduction

1.1. Background

The contemporary era is mostly regarded as the technological era. In present time, technology is playing a vital role in every aspect of human life. Technology is being considered in many fields like education [8]. The reason is that technology has become a highway which transfers the knowledge in most countries.

----

* Corresponding author.

The integration of technology these days experience innovations and changed our societies that has completely changed the manner in which individuals function [9]. The educational system integrated the digital technology within educational institutions in order to make students an active part of this knowledge society [11]. The digital technology, for instance, laptops, computer, Tablets and Smartphones etc. are playing an important role in the field of education. It has the ability to enhance relationship between teachers and students. Technology enables the student to adjust to their own pace of learning. Students who need extra time for understanding of any topic can get full advantage of digital technology. It is providing access to countless online resources, encouraging them to carry out research and make them more confident in learning. It also simplifies learning by making concept more digestible. Students can find useful images, instructional videos, Tables and Graph etc. It becomes beneficial for both student and teachers. Students being able to check deadlines, they can access to their account in which they found useful resources, lectures of any subject. Many universities are providing distance learning education for students who are unable to go to their campuses. They can gain their qualification through online mode of education. Teachers are facilitating these students by providing useful recorded lectures, assignment task, online quizzes and many more. It has transformed education and the way that people learn and retain information. Therefore, digital technology impacts the teaching and learning process and in academic achievement is fundamental part in maintaining the growth and progression of any country [12].

1.2.   Problem statement

This study is aimed to study the impact of digital technology on teaching and learning at University level.

1.3.   Research question

- How digital technology has transformed the teaching and learning process at University level?
- How it has improved the results for learners and educators?
- How digital technology has been impacting the system of education?

1.4.   Research objectives

- To identify the transformation of learning and teaching due to implementation of digital technology in education
- To explain the outcomes of learner and teacher that are contributed by the use of technology.
- To explain the support that technology offers to the educational priorities which include; enhancing the ability of the education system, academic achievement, promoting distance education

2. Literature review

Literature shows the clear evidence that if digital technology is effectively used in education then it can increase the speed and profundity of learning by students at school level. Digital technologies appear to be a proper means to enhance the basic skills of primary students like numeracy and literacy skills. The impact sizes are by and large like other instructive mediations that are successful in increasing accomplishment; however, the

utilization of advanced learning has different advantages [12]. Likewise, the degree of the impact might be hosted by the degree of capacity of educators to utilize advanced learning instruments and assets adequately to accomplish learning results. More successful utilization of advanced educating to raise accomplishment incorporates the capacity of educators to recognize how computerized apparatuses and assets can be utilized to accomplish learning results and adjusting their methodology, just as having information and comprehension of the innovation. This applies in all schools [13]. Where students utilize advanced learning at home just as school for formal and non-formal learning exercises these offers positive impact upon their accomplishment, since they have broadened their learning time. This is especially significant for auxiliary age students. Researches provide a promising proof that the efficiency of the teacher can be expanded through utilizing digital instruments in preparation for the teaching. Moreover, digital tools also empower the teachers to perform their job in better way with regard to teaching, evaluation and their own learning and growth [2].

As per the most recent insights with regards to the utilization of technology by the contemporary students and its impact on their learning, it has been observed that the utilization of innovative technology and instruments has increased the learning and intelligence of students. Moreover, students find studies progressively interactive and interesting when technology is used in it. Information communication proves to be extremely simple and beneficial, as well as feasible. This suggests that our brains will now work faster in general when assisted by modern innovation, regardless of what part of life we are discussing here. Even at schools, colleges, and universities, the dependence and reliance on such a development, which simply makes life a simple, smooth trip, is unavoidable these days. Today's students can make use of technology in the following ways

3. Internet connections

Over the decades, the importance of internet has grown by numerous folds. In the field of education, its significance cannot be underestimated. In spite of the possibility of frauds and downsides, the utilization of the internet resembles a gift for students and teachers. Presently, it is something that is for sure available everything human utilize. From TV to smartphones and gaming, in short, it is everywhere. It offers the students to discover astonishing comfort; they can discover any sort of assistance, instructional exercises and different sorts of helping material that can be utilized to improve the academic achievement by enhancing their learning skills [15].

- **Utilization of visual and projectors**

When compared to words, visual images continually have a strong attractiveness. Another fantastic mechanical use is the use of projectors and graphics to aid learning. Top companies all around the world now rely on visually beautiful PowerPoint presentations and projections to keep the learning clever and engaging [6]. Mechanical use, such as projectors in schools and institutions, can significantly increase teamwork and engagement, as well as promote inspiration. Instead of simply understanding words, students desire to see intriguing pictures and something that entices them to ponder. In terms of innovation, the adapting section also proves to be extremely capable.

- **Online degrees through digital technology**

The phenomenon of online degrees has become very common. Students desire to study through online courses for learning and getting certified for it. Well-known institutions provide astounding online programs for the students through utilization of internet and different application [3]. The concept of online course have become a continuous idea that will surely keep rising with the awareness and support by students. Mostly online programs are famous among the students who require getting education at flexible studying courses. These students mostly are working or live in other city or country.

4. Research methodology

Research Methodology

Considering the quantitative method, the strategy opted for this research is survey which is conducted through questionnaire. This strategy will be utilized to suggest potential explanations supporting particular link between the variables. Adoption of survey strategy provides the researcher with many advantages in quantitative study [18].

Population, sample and sampling technique

This research aims to study the impact of digital technology on teaching and learning, hence, the population for this study includes the students and teachers. The research population is the teachers and students of Faculty of Arts, University of Karachi, as the research is being conducted there. It is not possible to analyze the entire students and teachers of university that is why a sample will be taken from the entire population which will represent the whole population. The sample will comprise of students and teachers of University of Karachi. The selection of sample requires a sampling technique, so the sampling technique aimed to use in this research is convenience sampling. It is the type of non-probability sampling method. Through convenience sampling 25 students and 25 teachers of the university will be selected [17].

Data collection

The data collection will be done through survey. The survey will be conducted through questionnaire. The questions of the survey will be made close-ended. Close-ended questionnaire offers the participants with confined frame of pre-portrayed answers, for instance, multiple choices answer and yes/no etc. The questionnaire will comprise of 10 questions regarding the research questions for the respondents.

Data analysis

There are many techniques for data analysis in quantitative research and the technique this research will use to analyze data is the chi-square method.

## 5. Research analysis and discussion

The separate segment assesses the information gathered from the University of Karachi to decide advanced innovation's impact on the college level's instructing and learning measure. The comparing part further examines the discoveries by exploring the reactions of the 25 understudies and 25 educators in the overview. Consequently, the information examined dependent on the three characterized destinations, including the change of learning and instructing with computerized innovation, results accomplished for students and instructors, and backing from the trend setting innovation in the training framework, scholastic accomplishment, and advancing distance schooling. Following is the understanding of results and the conversation to propose the discoveries.

Analysis and Interpretation

The exploration led the quantitative investigation and assessed the information with the chi-square strategy to decide understudies and educators' responsiveness towards advanced learning dependent on the ten unique elements, including the instruction change, further developed educating and learning cycle, and overburden among instructors and understudies [10]. Different factors incorporate quality with distance schooling, lethargy, less roused understudies, upgraded scholastic accomplishments, method of instruction, genuine data, verification in research. That load of variables is examined with the nearby finished polls from the example of 50 individuals' dependent on the numerous decision questions and yes/no. Following is the translation and conversation on the assessed research.

Education Transformation

By looking into the decisions of the understudies and instructors, 84% members acknowledged that computerized innovation unnecessarily changed the schooling framework at college level. Hence, it recognized that best in class instruments change the elements of schooling in the cutting edge period as referenced in the accompanying figure, simply 22% would not acknowledge that advanced framework.
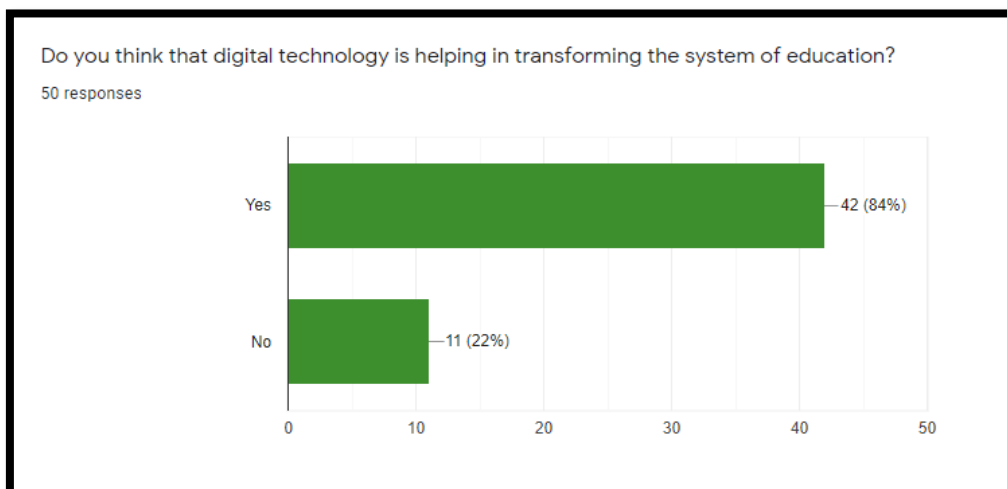
Figure 1: Transformed Education System

Improved Teaching and Learning Process

For breaking down the effect of computerized innovation on current learning strategies, the accompanying figure featured that computerized apparatuses propels the learning and showing measures at the college level and 68% understudies and educators concurred with the assertion, yet 32% would not acknowledge the progression of instruction measures. By contrasting the customary training framework and the contemporary ones, the instruction framework in colleges has developed and worked on the learning and showing measures with further developed adequacy and proficiency.
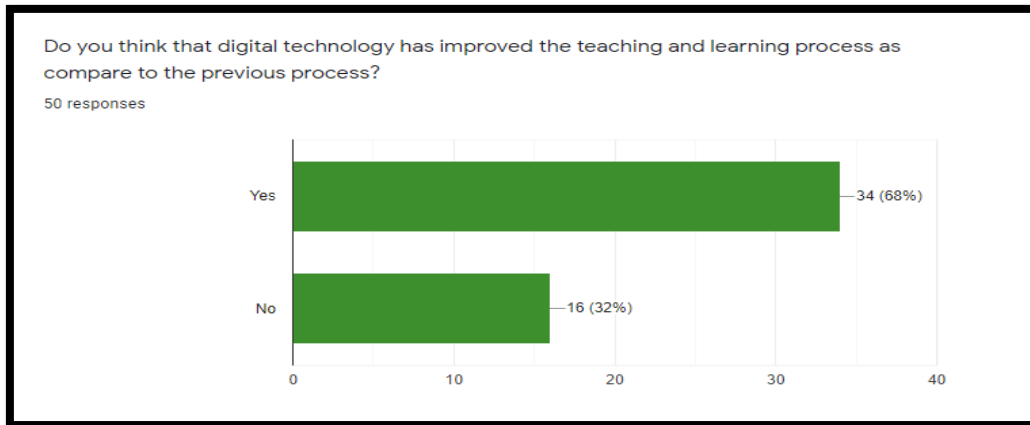
Figure 2: Improved Teaching and Learning Process

Over Burden

The examination further researched that computerized innovation overburden understudies or instructors in the took on schooling framework or not. The examination suggested that 72% individuals concurred that the cutting edge framework overburden them with headways in perusing, educating, and realizing, which is on the grounds that they need abilities to use it precisely. Be that as it may, just 32% think that it is valuable to utilize the advanced innovation as referenced beneath.
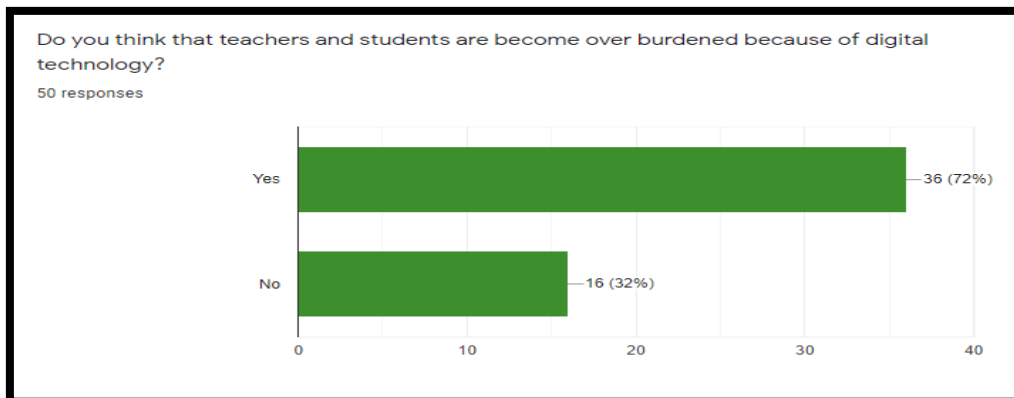

Figure 3: Over Burden

Affect quality with distance Education

Computerized innovation advances far off learning and training, which is additionally concentrated on assessing the nature of instruction. As such, respondents suggested that the nature of training is profoundly compromised with computerized devices, where 24% couldn't help contradicting the assertion and favor the advanced development in instruction framework as related to the figure underneath.
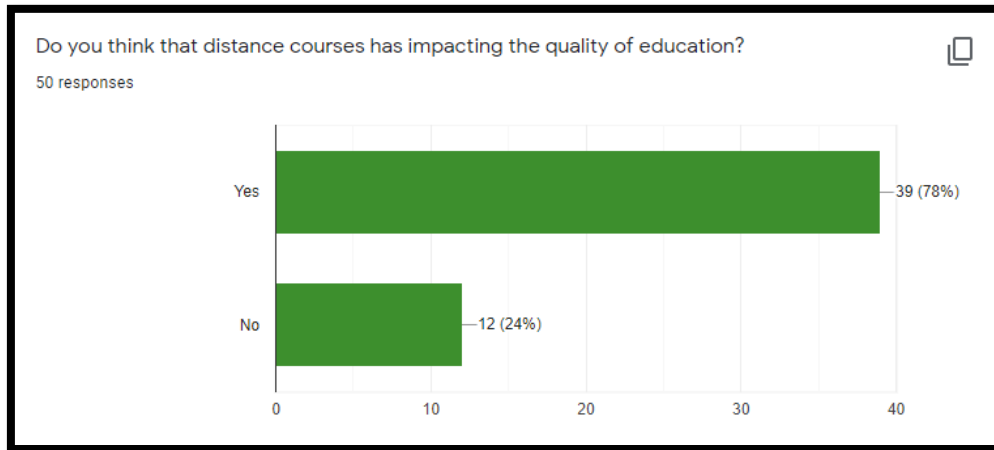
Figure 4: Affect quality with distance Education

Laziness

For deciding the impact of advanced innovation on present day learning strategies, the creator tried the understudies and instructors by reacting towards sluggishness since everything is accessible on single touch and it makes them languid to perform day by day relegated task successfully. Subsequently, the accompanying figure referenced that 86% individuals referenced that they confronted sluggishness with computerized innovations and just 14% don't feel something similar.
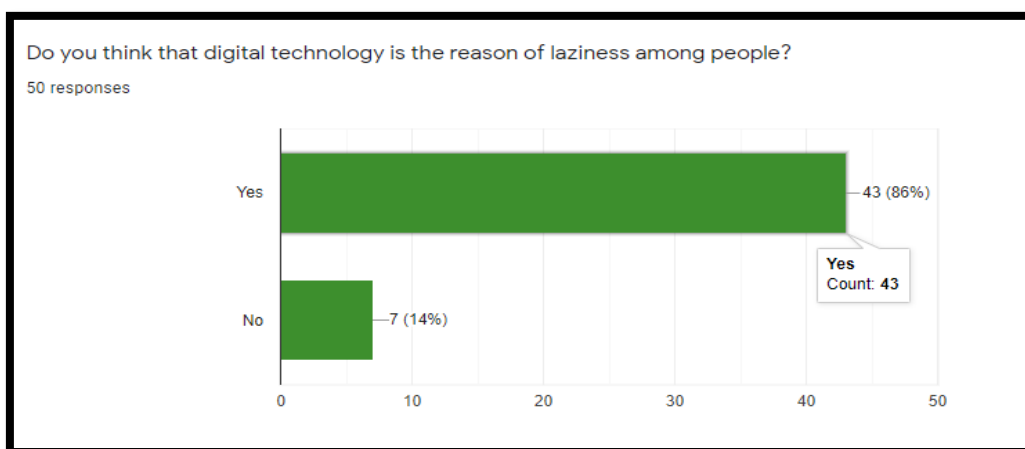
Figure 5: Laziness among people

Less Motivated Students

By inspecting the outcomes, 82% respondents concurred that understudies and instructors are less spurred with the web based learning and educating in view of the restricted assets and failure to work the advancement precisely and leads towards the productive outcomes that help them in understanding the ideas unmistakably. Further, the breaks in internet learning influence their exhibition towards instruction decreases that straightforwardly influence their inspiration.
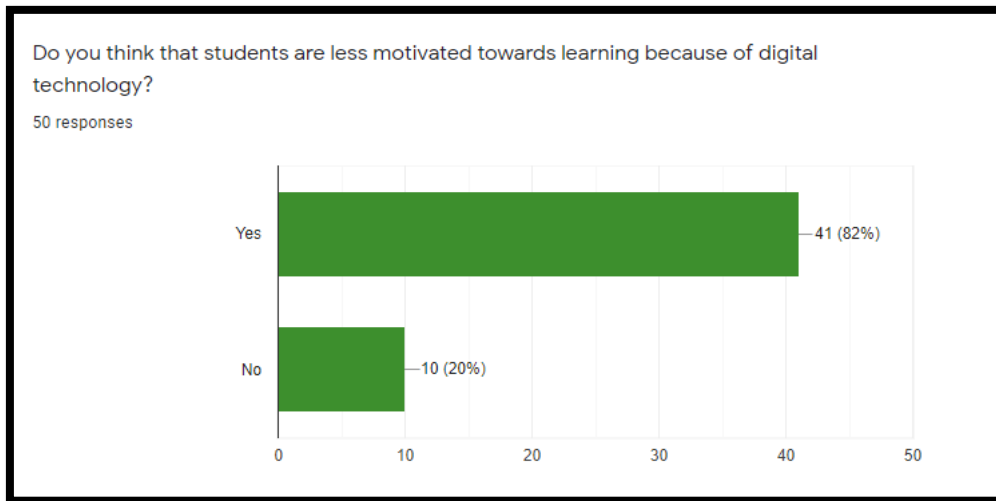

Figure 6: Less motivation among people

Enhanced Academic Achievements

From cross-checking the effect on web-based instruction on the understudies learning and educators showing measure, the review assesses the impact of computerized innovation on the scholarly accomplishments of understudies, for which the understudies and instructors reacted that the advanced framework emphatically impact the understudy's exhibition in scholastics in light of simplicity of information and assets accessibility. As featured in the accompanying figure, that larger part favors the outcomes.
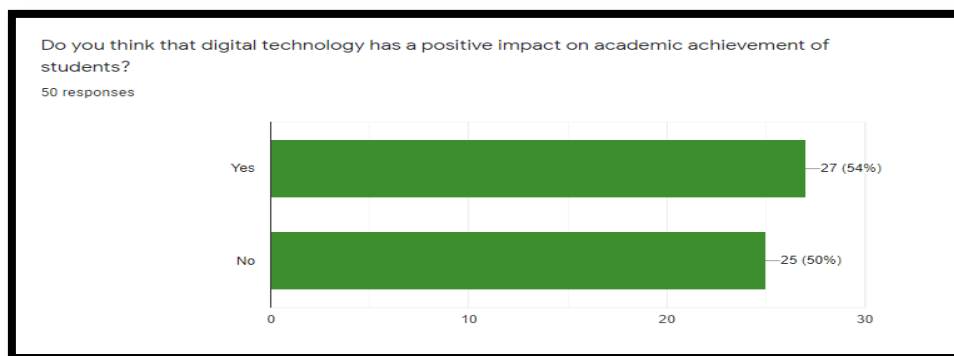

Figure 7: Student's Academic Achievements

8

Mode of Education

The exploration further exhibits the inclinations of understudies for the method of schooling at the college level, where larger part of understudies favors the vis-à-vis learning approach, though just 14% blessings the web based instructing and learning since they discovered eye to eye learning as ingenious and helpful to make direct understanding connection with educators. It additionally restricts disarray in regards to instruction ideas.
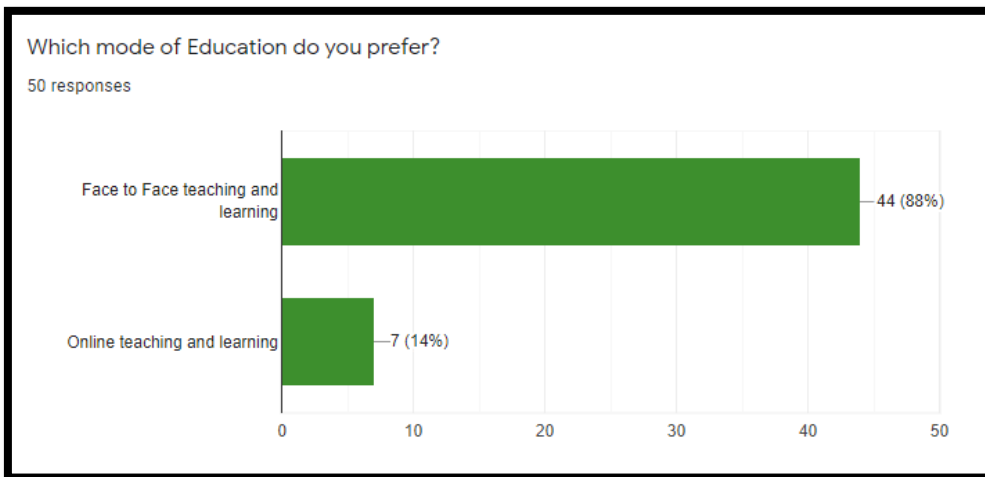

Figure 8: Mode of Education

Authentic Information

The assessment on deciding the valid data among educators and understudies, greater part of them incline toward Google web crawler as legitimate when contrasted with the libraries. As such, Google internet searcher is the most probable source to assemble information for any data and training question when contrasted with the books and libraries in view of simplicity, accommodation and over the top access on their versatile, laptop and PC. The accompanying figure fundamentally depicts the inclinations among understudies and educators at the college level.
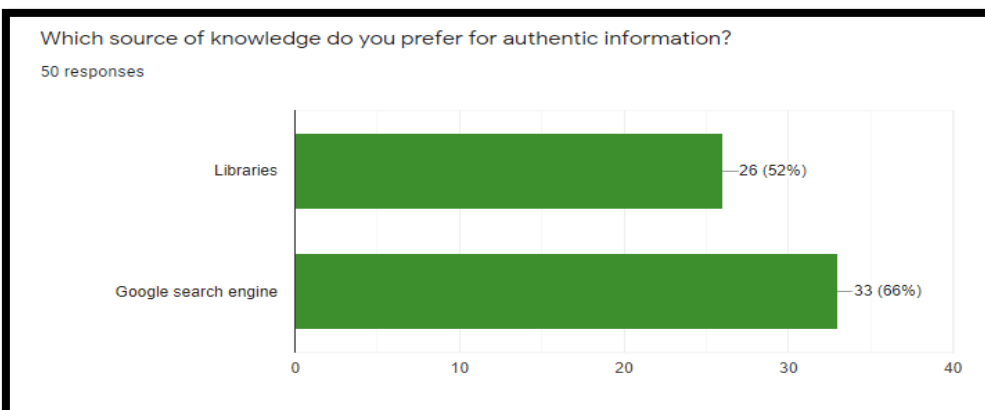

Figure 9: Authentic Information

Authentication in Research

Authentication in the research is the most significant component to upgrade the work believability, nonetheless, most if the understudies and instructors casted a ballot that they need information about the verification of sources and utilize the data in research. Accordingly, understudies and educators featured that they utilize computerized advances and internet learning instruments to accumulate realities without approving the unwavering quality and validation of the accessible assets.
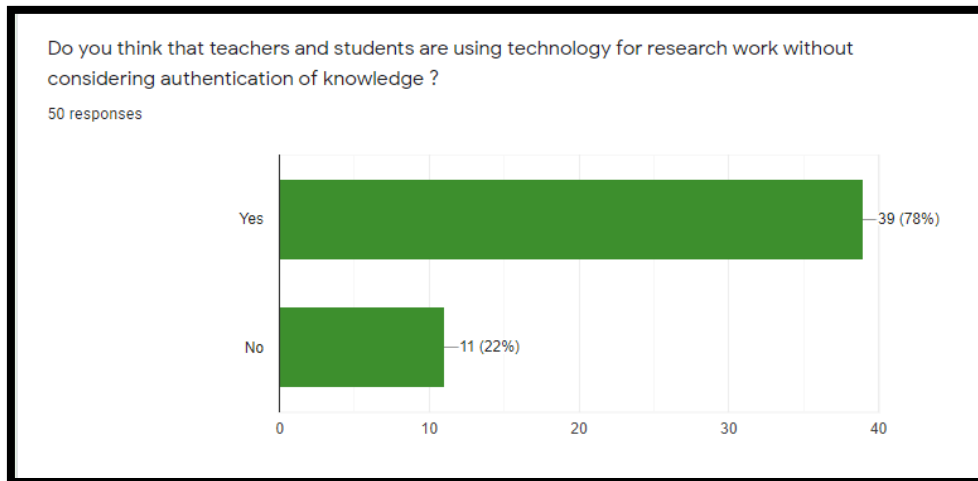

Do you think that teachers and students are using technology for research work without considering authentication of knowledge ?

50 responses

Figure 10: Authentication in Research

Research Findings

By noticing gathered information and the connected frequencies of the reacted poll, the examination amplified that computerized innovation influence the nature of instruction, overburden and demotivate individuals, however improve simplicity of social affair data, which upgrade scholarly accomplishment. Be that as it may, the verification isn't approving since they lean toward vis-à-vis learning and educating in light of customary concerns.

6. Conclusions and Limitations

By concluding the research and findings, the exploration intends to decide the effect of computerized innovation on the learning and showing measure in the college level. For directing the exploration, the creator gathered information with close-finished poll, which offers the members with bound edge of numerous decisions reply and yes/no to decide the impact between the proposed factors. Hence, the exploration zeroed in on the example of 50 individuals from University of Karachi, among which 25 understudies and 25 instructors to comprehend the connection between computerized innovation and training. The quantitative review assessed the respondent's frequencies and suggested that computerized training have changed the instruction framework and the learning and showing measure, which are not liked among the understudies and educators due to expanding apathy, demotivation and decrease in the nature of schooling. On the opposite side, respondents featured that

10

computerized instruction produces positive scholarly accomplishment however understudies lean toward eye to eye method of schooling because of overburden and less confirmation of examination. With those arrangement, the exploration featured that advanced innovation straightforwardly impacts the learning and showing measure in the college level. In any case, the exploration has certain limits as far as test size, factors, populace, and distinguishing proof of the critical components to decide the impact of advanced innovation on the schooling framework.

References

[1] O. Apuke, "Quantitative Research Methods : A Synopsis Approach", Kuwait Chapter of Arabian Journal of Business and Management Review, vol. 6, no. 11, pp. 40-47, 2017. Available: 10.12816/0040336.

[2] K. Archer, R. Savage, S. Sanghera-Sidhu, E. Wood, A. Gottardo and V. Chen, "Examining the effectiveness of technology use in classrooms: A tertiary meta-analysis", Computers & Education, vol. 78, pp. 140-149, 2014. Available: 10.1016/j.compedu.2014.06.001

[3] J. Bassili and S. Joordens, "Media Player Tool Use, Satisfaction with Online Lectures andExamination Performance", JOURNAL OF DISTANCE EDUCATIONREVUE DE L'ÉDUCATION À DISTANCE, vol. 22, no. 2, pp. 93-108, 2018. Available: https://www.researchgate.net/publication/228684226_Media_player_tool_use_satisfaction_with_online _lectures_and_examination_performance.

[4] J. Brill and C. Galloway, "Perils and promises: University instructors' integration of technology in classroom-based practices", British Journal of Educational Technology, vol. 38, no. 1, pp. 95-105, 2007. Available: 10.1111/j.1467-8535.2006.00601.x

[5] F. Biagi and M. Loi, "Measuring ICT Use and Learning Outcomes: evidence from recent econometric studies", European Journal of Education, vol. 48, no. 1, pp. 28-42, 2013. Available: 10.1111/ejed.12016

[6] C. Blackwell, "TEACHER PRACTICES WITH MOBILE TECHNOLOGY INTEGRATING TABLET COMPUTERS INTO THE EARLY CHILDHOOD CLASSROOM", Journal of Education Research, vol. 7, no. 4, 2013.

[7] P. Dillenbourg, "Integrating technologies into educational ecosystems", Distance Education, 29(2), 127-140, 2008.

[8] P. Garrison, and T. Anderson, "Transforming and enhancing university teaching: stronger and weaker technological influences in T. Evans & D. Nation (eds.), Changing university teaching: Reflections of creating educational technologies", Kogan Page, London.2000

[9] M., Grabe, and C. Grabe, "Integrating technology for meaningful learning" (5th ed.). Boston, MA: Houghton Mifflin, 2007.

[10] P.,Greasley, "Quantitative Data Analysis Using Spss: An Introduction For Health AndSocial Science. [ebook] UK": McGraw-Hill Education. Available at: https://books.google.com.pk/books/about/Quantitative_Data_Analysis_Using_Spss_An.html?id=B3Vx 5XwJv64C&redir_esc=y 2007

[11] S., Ghavifekr, M., Afshari, and S. Amla. "Management strategies for E-Learning system as the core component of systemic change: A qualitative analysis" Life Science Journal, 9(3), 2190-2196., 2012

[12] S., Higgins, Z., Xiao, M., Katsipataki, "The Impact of Digital Technology on Learning: A Summary for the Education Endowment Foundation". 2012.

[13] S., Hess, "Digital Media and Student Learning: Impact of Electronic Books on Motivation and Achievement". New England Reading Association Journal, July. 2014

[14] A. Kirkwood, and L. Price, "Learners and learning in the twenty-first century: what do we know about students' attitudes towards and experiences". Journal of University Teaching and Learning Practice7:1 30(3), 257-274., 2015

[15] S., Kalyuga, "Enhancing instructional efficiency of interactive e-learning environments: A cognitive load perspective. Educational Psychology Review", Interactive learning environments: Contemporary issues and trends 19, 387–399. 2007

[16] M., Saunders, P., Lewis, and A. Thornhill, (2007). "Research methods for business students" (4th ed.): London: Prentice Hall 2007

[17] H. Taherdoost, "Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research". International Journal of Academic Research in Management. 5. 18-27. 10.2139/ssrn.3205035. 2016

[18] B. Taheri, C. Porter, C. König, and Kanellos, N. "Quantitative Data Analysis Approaches". 10.23912/978-1-910158-51-7-2786. 2016

[19] C. Yip, N. Han, and B. Sng, "Legal and issues in research". Indian Journal of Anaesthesia. 60. 684. 10.4103/0019-5049.190627,. 2016