

Students' Perception and Use of Emerging Technology in Tertiary Institutions in Ondo State, Nigeria

Abidoje James Aalabi^{*1} and Olubusayo Victor Fakuade²

¹Department of Educational Technology Adeyemi Federal University of Education, Ondo, Nigeria

²School of Digital, Distance and E-learning Kampala International University, Uganda

Abstract

This study examines students' perception and use of emerging technology in tertiary institutions in Ondo State, Nigeria. Descriptive survey research design was used in the study. Two research questions and one research hypothesis were generated for this study. The sample population consisted of 300 students randomly selected from the three universities across the three senatorial districts (Ondo north, central and south). 100 participants were randomly selected from each of the selected public universities, making the total of 300 participants. The instrument for this study was researcher' self-developed questionnaire titled Students' Perception and Use of Emerging Technology Questionnaire (SPUETQ). The instrument was validated by two experts. Reliability coefficient of 0.78 was obtained using Kuder-Richardson (KR21) technique. Research questions and research hypotheses were answered and tested using mean scores and Pearson product correlation statistical tools respectively. The findings of the study showed that students' perception of emerging technology in tertiary institutions in Ondo State was positive. It was also revealed that the level of use of emerging technology in tertiary institutions in Ondo State was very high. The results also shown that there was no significant relationship between students' perception and use of emerging technology in tertiary institutions in Ondo State ($N = 180$; $r = -.090$; $p > 0.05$). The study therefore recommends that managements of tertiary institutions should encourage the use of emerging technology in teaching and learning process. The study also recommended that management of tertiary institutions school make funds available for the provision of web-based devices for effective teaching and learning.

Keywords: Web-Based Tools, Perception, Tertiary Institution, Ondo State

Introduction

The integration of emerging technologies in teaching and learning process is no longer optional but a necessity for educators considering the level of infusion of technology on education particularly as it relates to the changing learning environment, demand for flexibility in methodology, and the need to enhance creativity and innovations in learning. The application of emerging technologies has become so irresistible in the teaching and process, and it is transforming the way teaching is structured and organized, and the job performance of educators. The adoption and usage of emerging technologies assist educators and students to interact more outside the classroom, and to set up classes at any time and place.

Emerging technologies according to Sosa, Salinas & De Benito (2019) are those technologies that have the potential to change the current state of affairs in education. Cukurova et al. (2018) also stated that emerging technologies include but not limited to virtual reality implementations, augmented reality implementations, mobile learning devices, physical computing tools, internet of things, hardware with sensors and technologies that allow collaborative learning at a great scale.

Emerging technologies offer a lot of benefits to both students and teachers particularly in tertiary institutions. Tella, Tella, Toyobo, Adika & Adeyinka (2007) stated that the use of emerging technologies increases student motivation, facilitates recall of prior learning, provides new instructional stimuli, activates the learner's response, provides systematic and steady feedback, facilitates appropriate practises, provides a viable source of educational information to enhance learning, especially lifelong learning, allows students to gain deeper understanding of complex concepts. Abidoye (2018) also claims that emerging technology gives teachers the flexibility to administer and oversee instruction in a setting that is conducive to learning for all students. Yusuf, Onasanya (2004) avert that the ability to train the current generation of students for the workplace of the future, which is offering tools for tomorrow's practices, is made possible by emerging technology.

Perception is one of the factors that affect the use of technology in teaching and learning process. Perception according to Fitri & Tiarina (2021) is a set of activities that involves becoming aware of and interpreting information about one's surroundings. Wood (2015) also define perception as the active process of meaning creation through the selection, organization, and interpretation of people, objects, events, situations, and other phenomena. From the above definitions, one could refer to perception as how humans attempt to comprehend the world all around us gather information using our five sense organs. Perception is our experience of information content, which we can compare to previous experiences, as well as how we see or understand something using one of our senses. Students' perception in the learning process is very important to be investigated. Perception of students in learning refers to a students' perspective on something that provide or apply when running a learning activity. Teachers can use students' perceptions to correct and evaluate the system, methods, or learning materials we provide or apply to them. Halaweh (2013) emphasised that students may be prompted to accept, embrace and effectively make use of emerging technologies applications. If student's expectation on the use of emerging technologies is met, there is tendency for them to make use of it without any problem. There is no doubt that if emerging technology applications is easy to access and use the students will make maximum use of it for learning.

Research Questions

The following research questions were raised and answered in this study;

1. What is the students' perception of the use of emerging technologies in tertiary institutions in Ondo State?
2. What is the level of use of use of emerging technologies in tertiary institutions in Research Hypotheses

Research Hypotheses

The following null hypotheses were tested during the course of this research study;

3. H₀₁: There is no significant relationship between students' perception and use of emerging technologies in tertiary institutions in Ondo state.

Methodology

The study adopted descriptive survey research design. A total of three hundred (300) students were proportionately random selected from three public universities in Ondo State. One university was randomly selected from each of the three senatorial districts in Ondo State. Ondo state was divided into three senatorial districts (Ondo South, Ondo Central and Ondo North). 130 students were selected from Adekunle Ajasin University Akungba Akoko, 100 students were also selected from Adeyemi Federal University of Education Ondo while 70 students were selected from Olusegun Agagu University of science and Technology Okitipupa, the instrument used in this study was a self-developed questionnaire titled Student Perception of the Use of Emerging Technologies Questionnaire (SPUETQ). This was divided into three sessions A-C. Section A deals with the personal information of the respondents such as institution, Gender and level. Section B consisted of 10 question items on students' perception of emerging technologies, while section C consisted of 10 question items on students' use of emerging technologies in tertiary institutions in Ondo State.

The instrument was validated by two experts in Test and Measurements, Department of Guidance and Counselling, Adeyemi Federal University of Education Ondo. The reliability coefficient of the instrument was also measured using Kuder-Richardson (KR21). The reliability coefficient of 0.78 was obtained. This was considered to be high enough for the instrument to be used. The research questions were answered with the use of mean and Standard Deviation. While the only research hypothesis was tested with the use of Pearson product correlation coefficient at 0.05 level of significance.

Results

Research Question 1: What is the students' perception of emerging technologies in tertiary institutions in OndoState?

Table 1: Students Perceptions about the Use of Emerging Technologies

Item	SA	A	D	SD	Mean	Std. D.
I have a lot of confidence when it comes to the use of emerging technologies in the class	232	264	72	0	3.28	.67
It would make me happy to be recognized as an expert in the use of technology	276	227	65	0	3.37	.68
Generally, I have felt secure about using the emerging technologies for problem solving	244	207	64	53	3.13	.94
Using technology effectively will help me in understanding of lesson very well	178	310	56	24	3.13	.75
I think I can handle more difficult and complex topics with the application of emerging technologies in class	251	253	64	0	3.32	.66
I believe the use of technology make learning enjoyable for students	290	147	95	36	3.21	.94
I believe the emerging technologies has potential as a learning tool	273	204	47	44	3.24	.90
I know I can improve my performance by increasing my emerging technologies usage	366	100	81	21	3.42	.86
Emerging technological tools makes learning easier	289	197	51	31	3.30	.84
I think I could handle more difficult problems using emerging technological tools	289	182	57	40	3.26	.90
Weighted Average					3.27	

Key:SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree
Decision Value:0.00 - 2.49 = Negative, 2.50 - 4.00 = Positive

Table 1 shows the perceptions of students about the use of emerging technologies in tertiary institutions in Ondo state. The table shows the students agreed to all the items as follows: they have a lot of confidence when it comes to the use of emerging technologies in the class ($\bar{x} = 3.28$), it would make them happy to be recognized as an expert in the use of technology ($\bar{x} = 3.37$), generally, they have felt secure about using the emerging technologies for problem solving ($\bar{x} = 3.13$), using technology effectively will help them in understanding of lesson very well ($\bar{x} = 3.13$), they think they can handle more difficult and complex topics with the application of emerging technologies in class ($\bar{x} = 3.32$), believe the use of technology make learning enjoyable for students ($\bar{x} = 3.21$), believe the emerging technologies has potential as a learning tool ($\bar{x} = 3.24$), they know they can improve their performance by increasing their emerging technologies usage ($\bar{x} = 3.42$), emerging technological tools makes learning easier ($\bar{x} = 3.30$) and they think they could handle more difficult problems

using emerging technological tools ($\bar{x} = 3.26$). The perception of students in higher institutions about the usage of emerging technology in Ondo State is favourable, according to the weighted average value (3.27 out of the possible maximum value of 4.00), which is within the decision value for positive.

Research Question 2: What is the level of utilization of emerging technologies by the pre-service teachers in colleges of education?

Table 2: Students' Level of Use of Emerging Technology in Tertiary Institutions

Item	SA	A	D	SD	Mean	Std. D.
I use services provided by messaging apps such as WhatsApp to get relevant academic information.	54	29	17	0	3.16	.82
I participate in my class online group discussions	40	51	9	0	3.18	.90
I research, type, complete and submit my assignments and projects using emerging technological tools	46	37	17	0	2.80	.96
I watch tutorials and videos on difficult concepts with the use of emerging technologies.	41	53	3	3	2.92	1.07
I use emerging technological tools to access information on the internet	47	42	11	0	2.87	.92
Emerging technological tools allow me to use multimedia resources when learning	18	56	13	6	2.96	1.05
I usually compare lecturer's lessons to online information	16	65	19	0	3.14	1.01
I take online courses easily with the aid of technological tools	21	57	19	3	3.40	.68
I watch educational movies and play educational games more than I learn with emerging technologies	41	40	7	6	2.00	.97
I use online cloud accounts to backup my educational documents	40	36	18	6	2.93	1.23
Weighted Average					2.94	

Key: SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree

Decision Value: 0.00 - 2.49 = Low, 2.50 - 4.00 = High

Table 2 displays the level of use of emerging technologies by the students in tertiary institutions in Ondo state. The table demonstrates that the students agreed to the following: they use messaging apps like WhatsApp to access services that provide pertinent academic information ($\bar{x} = 3.16$); they participate in online group discussions in class ($\bar{x} = 3.18$); they use emerging technological tools to conduct research for, type out, and submit their assignments and projects ($\bar{x} = 2.80$); they watch tutorials and videos on challenging concepts ($\bar{x} = 2.92$); and they use emerging technological tools to access information on the internet ($\bar{x} = 2.87$), and they use messaging apps like WhatsApp to participate in online group discussions in class ($\bar{x} =$

3.16, 3.18). The table also reveals that the students disagreed that they learned more from emerging technologies than they did from watching instructional movies and playing educational games ($x = 2.00$). The level of student use of emerging technology in Ondo State's tertiary institutions can be judged to be high based on the weighted average's value (2.94 out of the possible maximum value of 4.00), which is within the judgement value for high.

Research Hypothesis

H₀₁: There is no significant relationship between students' perception and use of emerging technologies in tertiary institutions in Ondo State.

Table 3: Summary of Pearson Product Moment Correlation Showing Relationship between students' Perception and Use of Emerging Technologies

Variable	Mean	Std. D	N	r	Sig(p)	Remark
Perception	17.48	1.78	180		.231	Not Significant
Utilization	11.87	2.03		-.090		

Table 3 shows the relationship between pre-service teachers' perception and utilization of emerging technologies in Colleges of Education. The table shows that there is no relationship between student perception and use of emerging technologies in tertiary institutions ($N = 180$; $r = -.090$; $p > 0.05$). Hence, hypothesis 2 is accepted.

Discussion

In research question one, it was revealed that tertiary institution students' perception of emerging technologies in Ondo State was positive. Most of the students presented positive opinion about the use of emerging technologies in their education because technology tools could function as a support for improving the understanding of concepts, attention, or acquisition of knowledge. More so, the students availed that they have a lot of confidence when it comes to the use of emerging technologies in the class, feel happy and motivated when lecturers introduce emerging technologies as a means of enhancing their learning activities and that the information gotten from emerging technology tools is better than using printed materials/textbooks. The study's finding was in line with the finding of Ekmekci (2016), who came to the conclusion that students had positive perception of the use of technologies in their learning process.

In research question two, the study also showed that the level of use of emerging technologies in tertiary institutions in Ondo State was very high. Higher institutions use emerging technologies at a significant rate. A fascinating trend in today's educational system is the use of emerging technology. It provides educational institutions and

students with low-cost access to a variety of applications and resources. This was as a result of the fact that the adaptable nature of technology frees students from the constraints of distance, provides access to an endless supply of material on the desired subjects, and makes learning more accessible from any location. New technology advancements enable students to access information online, attend tutorials and films on challenging ideas, and use multimedia resources when learning. The results of this study corroborate those of Lahiri and Mosel (2013), who claimed that one of the most recent global trends affecting the use of information technology in educational institutions is the emergence of new technologies. However, this most recent discovery conflicts with research done by Malcolm and Godwill (2018) and Mooij and Smeets (2014) which revealed that the level of technologies implementation in teaching and learning was low.

Also, in research hypothesis one, the study reveals that the perception of the students had no relationship with the use of the emerging technologies in tertiary institutions. This is as a result of the fact that students' perspectives and their point of view about how technologies can contribute to the learning context does not necessarily translate to their use of the emerging technologies in the tertiary institutions. The research of Abdullahi and Seng (2015), who found no connection between students' perception of emerging technologies and their use in tertiary institutions, lends credence to this.

Conclusion

Based on the reviewed relevant literatures and the findings of this study, it was concluded that the University students have positive perception of emerging technologies in Ondo State.. While their level of use of emerging technologies was also very high. Therefore, the teaching and learning process in universities should embrace the use of emerging technologies especially at this technology age.

Recommendations

Based on the findings and implications of this study, the following recommendations were made:

1. Management of tertiary institutions should organize training and development programs to enhance students' skills and knowledge on the use of emerging technologies.
2. Management of tertiary institutions should make fundamental investments with a clear vision and strategy to enhance access and exploitation of emerging technology.

Reference

- Abubakar H. & Salmanu V. (2018). Impact of Internet Technology Usage on Job Performance of Senior Secondary School Teachers in Kaduna State. *International Journal of Curriculum and Instruction*, 10(2), 152-167.
- Edgar, A. S.N, Jesus, S, and barbara, D, B. (2017) Emerging Technologies in Education: A systematic review of the literature published between 2006 and 2016. *International journal of Emerging technologies in learning. (IJET): 12 (05): 128.*
- Fitri, I., & Tiarina, Y. (2021) An Analysis of Students' Perception in Using Whatsapp as Media for Learning English During Covid 19 Pandemic at SMAN 1 Kecamatan Guguak *Journal of English Language Teaching*, 10(4), 707-704
- Halaweh P. (2013) Emerging technology: what is it? *Journal of Technology Management & Innovation* 8(3), 108 - 115.
- Manowong, S. (2016) Undergraduate Students Perceptions of Edmodo as a Supplementary Learning Tool in an EFL classroom. Silpakorn University. *Journal of Social Sciences, Humanities, and Arts*, 16(2), 137-161.
- Ng'ambi, D. (2013) Effective and ineffective uses of emerging technologies: Towards a transformative pedagogical model. *British Journal of Educational Technology*, 44(4), 652- 661.
- Oliveira, A; Behnagh, R.F; Ni.L; Mohsinah, A.A; Burgess, K.J; & Guo, L. (2019) Emerging technologies as pedagogical tools for teaching and learning science: A literature review. *Hum Behav&Emerg Tech.*;1: 149-160.
- Parry E and Battista V (2019) The impact of emerging technologies on work: a review of the evidence and implications for the human resource function. *Emerald Open Research*, 1(5)1-13
- Sisay, A. (2018) University Students' Perception and Utilization of Technology for Learning: The case of Haramaya University. *Online Journal of Communication and Media Technologies*, 8(1), 130-149.
- Sosa, E., Salinas, J., & De Benito, B. (2019) Emerging technologies (ETs) in education: A systematic review of the literature published between 2006 and 2016. *International Journal of Emerging Technologies in Learning*, 2017, 12(5), 128-149.
- Spector, J. M. (2013) Emerging Educational Technologies and Research Directions. *Educational Technology & Society*, 16 (2): 21-30.