STUDENT'S AWARNESS AND UTILIZATION OF EDUCATIONAL APP FOR E-LEARNIG AMONG UNDERGRADUATE STUDENTS OF UNIVERSITY OF PORT HARCOURT.

[1]Akutaekwe Chinenye Emillia, *akutaekwechinenye@gmail.com*
[2]Eke, Regina Akudo, *ekeregina@gmail.com*

[1&2] Department of Curriculum and Educational Technology,
University of Port Harcourt

Abstract
The study investigated the awareness and utilization of educational app for e-learning among Language Education Undergraduate Students in University of Port Harcourt. The study adopted a descriptive research survey. Three research questions guided the study. A purposive sample size of 128 students of language education in Uniport were used. The instrument for data collection was questionnaire. The instrument was validated by three experts in measurements and evaluation. Twenty students who were not part of the study was used for reliability. A reliability technique was employed, while Cronbach's Alpha was used and a reliability index of 0.78 was gotten, which confirmed that the instrument was reliable. Mean and standard deviation were used to answer the research questions. The findings revealed that student are aware of the education apps and that they frequently used utilize educational apps for e-learning. It also showed that a significant gender difference exists between female and male awareness level of awareness of educational app. It was therefore recommended that there should be proper sensitization of students through seminars and workshops for them to understand how to use educational app themselves. More attention should be paid on the female gender to boost their awareness and the use of educational apps.

Key words: Awareness, Utilization, Educational App, E-learning, Students

Introduction

There is explosion in technological advancement in this era. Today's digital age is made up of digital natives whose language will always sing digital in virtually every aspect of their lives. This is reflective even in education with the revolution in learning environment, which brought about a lot of innovations in the field of teaching and learning. The digital age has witnessed a significant shift in the way education is delivered and consumed. Educational apps, designed to facilitate e-learning experiences, have emerged as valuable tools in this transformation. These apps offer a wide range of educational content, interactive features, and accessibility, catering to the diverse needs of students in various educational settings (Sung, Chang, & Liu, 2016).

The convergence of E-learning and Educational Apps has brought about a transformative shift in the field of education. The integration of E-learning and Educational Apps has revolutionized the way education is approached. With the increasing accessibility of technology, these tools have reshaped traditional learning paradigms, offering personalized, interactive, and flexible learning experiences. Gupta (2022) E- learning delivers learning content in a way that users find convenient and accessible.

E-learning is an electronic technology based type of learning for delivering educational content and instructions to learners. It involves a wide range of digital resources and tools which include educational apps, google meet, goggle classroom, video lectures, Skype, YouTube, quizzes and so on. Pius (2022) views E- learning as an online learning is a learning model which is facilitated through the internet with the mode of delivery being mobile phones, computers, or tablets. Eze and Chinedu-Eze et al (2018) asserts that e-learning education is concerned with the holistic corporation of modern telecommunication equipment and ICT resources into the education system. It give the most comfortable type of learning by giving the students the opportunity of accessing their learning from anywhere and at any comfortable time. As such with e learning students learn at their pace. Pius (2022) views that E learning platforms are systems or software that can be integrated into an institution's portal to deliver remote or online learning. Nikou and Maslov (2021) defines e-learning as the overall technological system to deliver teaching, whereas participation in e-learning is the act of use of telecommunication to deliver teaching and learning within such a system.

Educational app are those apps that help both the students and the teachers of any level to improve in both teaching and learning experience. Riley (2023) opines that Apps for education can make learners more interactive, more engaged, and perform better. Keeping teaching methods fresh is integral to getting students engaged in their studies and learning apps are a fantastic way of achieving this. Apps are developed to be engaging and interesting for the learner.

However, there seems to exist a gap in male and female use of the technology which invariably cut across educational app which is technology based too. Vargas-Garcia (2023) noted that equitable access to EdTech is greatly affected by prevailing gender norms which emanates even from family assigning responsibilities based on gender, equally many of the learning materials the students are exposed to may also reinforce these gender stereotype. Ayite, (2020) argued that the inference that female students are limited in the use of emerging technologies in education is not always the case, insisting that it varies from country to country. Ayite, (2020 noted that female students even outnumbered male students in some countries.

How this research is trying to find, are the students aware of those educational apps , to what extent do the use those educational apps and are there gender gap in the students' utilization of those educational apps?

Statement of Problem

There is digital revolution in the educational sector with influx of many educational apps which are aimed at offering students a flexible and interactive platform for e-learning. are the students aware of the existence of these educational apps, to extents are the students actually using these educational apps, and is there any gender difference in the students' use of these educational apps.

The Purpose of the Study

- To find out the level of awareness of the educational Apps among the undergraduate students in Uniport.
- To assess the extent of utilization of educational apps for e-learning in among the undergraduate students in Uniport.
- To determine gender difference in the use of these educational Apps among the undergraduate students in Uniport.

Research Questions

1. What is the educational apps awareness level of undergraduate students in Uniport?
2. To what extent do undergraduate students of Uniport, use educational apps?
3. What is the relationship between gender and educational app usage among the undergraduate students in Uniport?

Literature Review

E-learning in Nigeria

The inception of E-learning in Nigeria could be traced back to 1886, the colonial era with the emergence of telecommunication. The colonial masters within that period established e cable which they used to connect to their colonial office situated in London. For fast and easy communication and coordination government offices at lagos and other strategic regions were provided with telephones services as at 1893. (Ajadi *et al*, 2008). The next step saw the emergence of correspondence and to the stage where lecture notes are recorded on CD_ROM for the learner to play at leisure and when desired. This continued to improve. In pursuance of the global development goal as stipulated by the federal executive council, the federal ministry of education moved into integrating technology in Education. Musa (ND) observes that e learning is one the bi-products of information and communication technology as Ajadi and Salawu *et al* (2008) recounts that recent developments and awareness of the government on information and communication

technology have opened an opportunity for the adoption of e-learning in delivering distance education for educating a vast mass of uneducated or less educated Nigerians.
The complete closure of schools on March, 2020 gave a boost to e-learning as that disruption left many schools with no other option other than e-learning for academic progress. Adeoye and Adanikin et al (2020) observe that some universities particularly the private universities in Nigeria have devised the use of information and communication technology tools to facilitate learning during this pandemic.

Educational Apps and it's Status in Nigeria
Educational Apps are software applications designed specifically for the purpose of educating users and learners. These apps are usually available computers, laptops, smartphones, tablets, ipads etc. They cover a wide range of topics and subjects too. Educational apps usage cut across users of all ages. They incorporate features that enhance learners and make learning more interactive like gamification, multimedia content(visual and audio). Examples of some educational apps include: Khad academy, Ulesson, Language learning app, Language learning apps, Maths games, science simulations etc. educational apps can be used by any educational either individuals or corporate body and at their convenience too.

In Nigeria, today's digital age and the integration of E-learning and Educational Apps has revolutionized the way we approach education. With the increasing accessibility of technology, these tools have reshaped traditional learning paradigms, offering personalized, interactive, and flexible learning experiences. The Nigeria's commitment to achieving sustainable Development Goal 4 of ensuring inclusive and equitable quality education for all it's citizens gave boost to e-learning. This invariably gave a very soft landing for the utilization of Educational apps. Educational apps apart from delivering educational content equally gave a boost to digital literacy.

Theoretical background
Technology Acceptance Model (TAM) is a widely recognized theoretical framework in the field of information system and technology management. it was originally developed by Fred Davis in the late 1980s but has since undergone modifications. It is designed to understand and predict users' acceptance and adoption of technology such as software applications, websites, or other technologies t consists of two core constructs which include:

- Perceived Ease of Use (PEOU): this explains how users perceive a particular technology or system to be. It assesses how easy user perceives a technology to be. It a user perceives the technology to be easy, the user will embrace it and that will boost constant use of such technology.

- Perceived Usefulness (PU): this relates to how easy users perceive a particular technology will enhance their performance or productivity and solve their real problems.

Performance acceptance model considers factors like perceived ease of use and perceived usefulness, which can be relevant for studying why students choose to use certain educational apps.

This model is used to understand and predict how users adopt and accept new technology, such as educational apps for e-learning. The students are digital natives who are already swimming in the explosive global digital innovations, at such educational apps being technologies is highly blending to them and they are embracing it as it contributes valuable insights to their fields in education.

Review of related literature

Aikoful, V. (2019) researched on Gender perception on the effectiveness of ULearn management system as an eLearning platform for distance education. The study investigated the difference in gender perception on the effectiveness of online learning platforms since gender difference exists in traditional face to face studies. Test of Science Related Attitude (TOSRA) questionnaire that consisted of the level of effectiveness of the platform 54 items organised into nine scales was used. The study found out that the level of effectiveness of the platform, from the perspective of the students was high, there exist also a significant difference in gender perception on the effectiveness of distance learning online platforms

Alzaza, N. S. and Yaakub, A. R (2011)_Students' Awareness and Requirements of Mobile Learning_Services in the Higher Education. This study aims to investigate students' awareness and requirements of mobile learning services among Malaysian students in the higher education environment. Students' awareness of such technology is one of the most focuses for success adoption. The study found that the higher education environment now has the necessary mobile technology infrastructure to utilize m-learning. Results: Moreover, the results show that students have adequate knowledge and good awareness to use such technology in their education environment.

Imlawi (2021) worked on Students' engagement in E-learning applications is considered an important factor for learning. Data collected was analyzed using Analysis of Covariance, ANCOVA, to investigate the proposed hypotheses, and compare the students' engagement among the study groups. The finding revealed that the sound's elements, especially voiceovers, positively influence the students' engagement, when controlling for students' age, gender, and their prior experience with E-learning applications. These results contribute to theory by confirming the arousal theory in the context of students' engagement in E-learning applications. Practitioners and designers

can also be informed, by our results, in designing more engaging educational applications.

Ali, & Maksum (2020) worked on Utilization of E-Learning-Based ICT Learning Using the Google Classroom Application during the COVID-19 Pandemic. The objective of the research is to describe the implementation of e-learning-based ICT learning using the Google Classroom application during the Covid-19 pandemic in public high schools. The research used a qualitative approach and was conducted on class X MIA students. 1. Data for the study was collected through observation, interviews. Data collected were analysis and the finding showed that the use of the google classroom application made the ICT learning process easier during the covid-19 period. This is because the google classroom is flexibility in terms of time and place, its application is easy to understand and operate. Google classroom is equally effective and efficient and its learning evaluation process is more accurate. This research shows that the google classroom application facilitates the ICT learning process during the covid-19 period.

Eze, S.C. and Chinedu-Eze, V.C.A. *et al*.(2020) worked on Factors influencing the use of e-learning facilities by students in a private Higher Education Institution (HEI) in a developing economy. The study, explores factors influencing the use of e-learning by students in private HEIs in Nigeria using Technology-Organisation-Environment (TOE) framework. The data was a semi-structured interviews with 15 students from L-University drawn purposefully from the Landmark directory. A hybrid thematic analysis was used to analyse the data. Findings showed that technology-related factors (ease of use, speed accessibility and service delivery), organisation-related factors (training support and diversity), environment-related factors (attitudes of the users) and impact-related factors (learning experience, skill development, academic performance, and degree of engagement) influence the students' adoption of e-learning facilities. The study also reveals techniques that will likely accelerate the development of e-learning structure in private HEIs and which could provide the opportunity of assisting communities of learners to adopt hand use e-learning facilities regularly.

Eze, S.C. et al (2018) investigated the utilisation of e-learning facilities in the educational delivery system of Nigeria. This study examines adoption and utilisation of e-learning facilities by lecturers in Nigerian private tertiary institution. Qualitative approach was used investigate the adoption and utilisation of e-learning facilities by lecturers in a Nigerian private tertiary institution using 15 semi- structured interviews from the academic staff of M-University. Data collected were analysed using data driven thematic approach. Results show that M-University's e-learning facilities are adequate and accessible to users, and most teachers are comfortable with utilisation of various facilities during classes compared to most public tertiary institutions although, the utilisation has

not been maximised. However, attitude of users, inadequate internet facility, inadequate training of users pose serious challenges to the successful adoption.

Nikou and Maslov (2021) worked on an analysis of Students' perspective and e-learning participation – the case of COVID_19 Pandermic. It aims to determine the critical factors for the intention to participate in e-learning during COVID-19. Data was collected of 131 university students and structural equation modelling technique using PLS-SEM was employed to analysis the data. The findings showed that the COVID-19 related factors such as envisaged challenges and COVID-19 awareness not only directly had impact on students' intention but also such effects are mediated through perceived usefulness and perceived ease of use of e-learning systems. Nevertheless, the results revealed that the educational institution's preparedness does not directly impact the intention of students to participate in e-learning during COVID-19.

Youn and Hall (2018) studied "Gender and online privacy among teens: risk perception, privacy concerns, and protection behaviours" among 395 high school students. Survey data was gathered via researcher developed questionnaire and analyzed. Result obtained showed that girls (female) perceived more privacy risk and have a high level of privacy concern than boys (male). While Youn and Hall, (2018) Gender and online privacy among teens, this study adopted the same variables risk perception and gender to study the awareness and perception of internet risks and digital citizenship behaviour among lecturers and students of Universities in Rivers.

Lyons (2016) investigated student gender and grade level differences in using educational app and behaviour among 829 students. Data was collected via a 20-question self-administered web based survey and analyzed using ANOVA and Chi-Square (X) findings from the study revealed that male had significantly more personal safety in the use of educational app issues than females, but no significant gender and grade level differences in digital citizenship to

Altiparmak and Akdeniz (2017), studied "Factors Affecting educational app and Involvement in the Internet Society among 174 Higher Education Students. Data was collected via researcher developed questionnaire, and analyzed using simple percentage, mean, standard deviation and MANOVA. Results obtained showed that students generally have good level awareness internet attitude, computer self-efficacy and digital citizenship.

Alqahtani (2017), studied the "extent of comprehension and knowledge with respect to digital citizenship among Saudi Arabia Teacher". Data was collected via questionnaire and interview from four (4) sampled teachers and analyzed using Mann-writing and Kruskal Wallis H-test. Result obtained demonstrated teachers' perception of digital

citizenship and awareness of such factors as respect, educate, and protect according to Ribble's categorization. It also showed statistically significant findings on the level of digital citizenship awareness among Saudi Arabia teachers. While Algahtani (2017) studied the extent of comprehension and knowledge of digital citizenship among Saudi Arabia students.

Methodology

This research adopts descriptive survey design. Purposive sampling technique was used to get a sample size of 128 students from all the undergraduate students in Curriculum and educational technology department in University of Port Harcourt. The instrument for data collection was questionnaire. The instrument was validated by three experts in measurement and evaluation. Twenty students who were not part of the study were used for the reliability. A reliability coefficient of 0.78 was obtained using Cronbach's alpha reliability method, which confirmed the instrument's reliability. Mean and standard deviation were used to answer the research questions, while z-test was used for the hypothesis. The findings revealed that student frequently used utilize educational app for e-learning, and that it has equally improved their learning experience.

Analysis of Result

Table1: Mean and Standard Deviation on the educational apps awareness level of undergraduate students in Uniport.

S/N	ITEMS	Stud. N	$\bar{x}$	SD	REMARK
1.	I am aware of the prevalence of educational app.	131	3.75	0.84	Accepted
2.	I am aware of my limits in the use of the educational app	131	3.35	0.77	Accepted
3.	I am aware of the various educational app online.	131	3.85	0.72	Accepted
4.	I am aware of the strategies involve in using educational App.	131	3.24	0.78	Accepted
5.	I am aware of the educational app software and its benefits	131	3.48	0.90	Accepted
6.	I am aware if my computer and other devices are infected by malicious software.	131	3.54	0. 85	Accepted
7.	I install educational app software on my computer.	131	3.37	0.89	Accepted
8.	I download and install educational app without a license (pirate) on my computer / phones.	131	3.00	0.62	Accepted
9.	I collaborate with other students using educational app.	131	2.56	0.96	Accepted
10.	I use my educational app the way it appeals to me.	131	2.25	0.64	Accepted
Average mean				**3.77**	**0.80**

The result shows the awareness levels of students on educational app. The awareness level of students on educational app is high above a criterion mean of 2.5: 3.77 (SD = 0.80). The range of students' mean scores was between 3.85, SD=0.72 and 2.56 SD=0.96.

Table 2: Mean and Standard Deviation on extent of undergraduate students of Uniports' use of educational apps.

S/N	ITEMS	N	X	SD	REMARK
1	I use educational apps to load and share files,	131	3.80	0.46	Accept
2	I engage friend on academic issues using educational apps.	131	3.62	0.96	Accept
3	I connect my course mates with educational apps	131	3.63	0.96	Accept
4	I use educational apps to collaborate with by pears	131	3.62	0.62	Accept
5	Educational apps enhance my everyday activity as a student.	131	3.11	0.95	Accept
6	I use educational apps to improve my self	131	3.13	1.03	Accept
7	I use educational apps to make learning fun.	131	3.23	0.74	Accept
8	I am proud to tell my pears that I use educational apps.	131	3.33	0.70	Accept
9	I enjoy learning with educational apps features.	131	3.07	0.79	Accept
10	I feel am not learning properly when not using educational apps	131	2.80	1.10	Accept
11	I feel I am part of the 21st century education community.	131	3.40	0.62	Accept
12	I am uncomfortable learning with educational app	131	3.27	0.98	Accept
13	I spend one third (1/3) of learning with education app	131	3.23	1.08	Accept
14	I have used over 3 educational app	131	3.60	0.89	Accept
15	I mostly use educational app for academic work.	131	3.33	0.66	Accept
16	I mostly use Facebook to play online games.	131	3.47	0.84	Accept
17	I mostly use educational app privately.	131	3.19	0.90	Accept
18	I mostly use educational app often.	131	1.90	1.02	Reject
19	I mostly use educational app to improve my performance.	131	3.57	0.86	Accept
20	I mostly use educational app at will.	131	3.63	0.94	Accept
Average		**3.30**	**0.86**		

The above shows that the mean scores on undergraduate students' extent of educational app use was3.30, SD= 0.86. The range of participants mean scores was between 3.80,

SD=0.46 and 1.90, SD=1.02. This showed high extent of undergraduate students' use of educational app which is above the criterion mean (2.50, SD=1.11)

Table 3: Pearson Product Moment Correlation Coefficient on the relationship between gender and educational app usage.

Variables	n	r	Remark
Gender			
	131	-0.65	Negative high relationship
Educational app			

The above table shows that Pearson Product Moment Correlation Coefficient was -0.65, this shows that there is a negative high relationship between gender and educational app usage.

Findings

The findings and results revealed that there is a high level of awareness of educational app by students. The findings also showed high extent of undergraduate students' use of educational app which is above the criterion mean. It also revealed mean score difference among male and female students with the male students having a higher mean score than female students.

Discussion of Findings

These finding in research question one is consistent with the findings of Alzaza and Yaakub (2010) on Students' Awareness and Requirements of Mobile Learning Services in the Higher Education Environment, which revealed that that students have adequate knowledge and good awareness to use such technology in their education environment.

The findings in research question two is also in agreement in the results in Ali, & Maksum (2020), who worked on Utilization of E-Learning-Based ICT Learning Using the Google Classroom Application During the COVID-19 Pandemic. It revealed that Google Classroom was used students and the application facilitated the ICT learning process during the covid-19 period.

The findings in research question three on the gender difference in the use of these educational Apps among the undergraduate students in Uniport. The finding on the present research work is in agreement with the findings in Arikoful (2019), who

researched on Gender perception on the effectiveness of ULearn Management System as an eLearning Platform for Distance Education, which revealed that there is significant gender difference in the perception of effectiveness of online distance learning. However the result is not consistent with the findings in the work by Bawa and Suleman (2020), who researched on Gender dimension from the effect of mobile instructional app on undergraduates' performance in economics. The findings revealed that there was no significant difference in the use of mobile instructional app in economics.

Conclusion

From the findings it is obvious that greater percentage of the students are aware of educational apps, and they equally use it. However, a few percentage of the students do not know about educational app and as such they do not use them. There is also a gender gap in the students' awareness and use of educational apps. This is not helping our technology integration today as some people even do not want to associate themselves with internet-based activities.

Recommendations

It is no doubt that the world today is fully a global village, and students are expected to be part of this global online community. So, based on the findings of this study the following recommendations are made:

1. There should be proper sensitization of people to understand how to use educational app themselves.
2. Educational app teaching programs should be incorporated into school course of study,.
3. Seminars and workshops can also be organized for students to enlighten them on the use of educational app.

References

Adeoye, I. A., Adanikin, A. F. & Adanikin, A. (2020) COVID-19 and e-Learning: Nigeria tertiary education system experience. *International Journal of Research and Innovation in Applied Science* (IJRIAS) 5(5).

Ajadi, T. O.., Salawu, I. O. & Adeoye, F. A. (2008). E-learning and distance education in Nigeria. *International online Journal of Education* 7 (4) Turkish.

Ali, K. A. & Maksum, H. (2020) Utilization of E-Learning-Based ICT Learning using the google classroom application during the COVID-19 pandemic. *Journal of Education*
Research and Evaluation 4(4):373 DOI:10.23887/jere.v4i4.291.

Altiparmak, Karem and Akdeniz Yaman (2017) Academic for peace: defending academic freedom in times of emergency. *Translation from Turkish to English.*

Alqahtani, A (2017). The Extent of Comprehension and Knowledge with Respect to Digital Citizenship among Middle Eastern and US Students at UNC. Retrieved from: https://eric.ed.gov/?id=EJ1138839

Alzaza, N. S. and Yaakub, A. R (2011) Students' awareness and requirements of mobile learning services in the higher education environment. *American Journal of Economics and Business Administration* 3(1). 95-100. https://www.researchgate.net

Arikoful, V. (2019) Gender perception on the effectiveness of ULearn management system as an eLearning platform for distance education. *Journal of Learning and Teaching in Digital Age.* 5(2) 35-45. https://dergipark.org

Ayite, , D. M. K.., Aheto, S. P. K., & Nyagorme, P. (2022). Gender dimensions of emerging technologies for leatrning in a University. Cogent Social Science, 8(1). https://doi.org/10.1080/23311886.

Eze, S.C., Chinedu-Eze, V.C.A., Okike, C.K. et al.(2020) Factors influencing the use of e- learning facilities by students in a private Higher Education Institution (HEI) in a developing economy. *Humanit Soc Sci Commun* 7, 133 (2020). https://doi.org/10.1057/s41599-020-00624-6.

Eze, S.C., Chinedu-Eze, V.C. & Bello, A.O.(2018) The utilisation of e-learning facilities in the educational delivery system of Nigeria: a study of M-University. *Int J Educ Technol High Educ* 15, 34 (2018). https://doi.org/10.1186/s41239-018-0116-z.

Gupta, T. (2022) Top & e- learning Apps for Digital Education in 2022. Scrumdigital.com/blog/e-learning-mobile-app/

Pius, G. (2022) E-Learning for Schools in Nigeria/ What You Need to Know https://gopius.com/e-learning-for-schools-in-nigeria.

Imlawi, J. Students' engagement in e-learning applications: The impact of sound's elements. *Educ Inf Technol* 26, 6227–6239 (2021). https://doi.org/10.1007/s10639-021-10605-0

Lyon, F. (2016) Investigating Students Gender and Grade Level Differences in Digital Citizenship Behaviour. Doctorial Study Submitted in Partial Fulfilment of the Requirements for the Degree of Doctor of Education, Walden University, August 2012.

Musa, B (ND) Importance of E-learning in Nigeria. Academia.edu

Nikou and Maslov (2021) An analysis of Students' perspective and e-learning participation – The case of COVID_19 Pandemic. *International Journal of Information and Learning Technology.* 38 (3)

Riley, S. (2023) Best Educational Apps. Educational Store. Educationalappstore.com/

Sun, P.C., Tsai, R.J., Finger, G., Chen, Y.Y. & Yeh, D. (2008), "What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction". *Computers and Education*, Vol. 50 No. 4, pp. 1183-1202.

Vargas-Garcia, A. (2023) Leveraging Digital Education, Technology and Innovation for Gender Equality.. International Development Research (IDRC) https://idrc.crdi.ca

Youn, S., & Hall, K. (2018), Gender and Online Privacy among teens: risk perception, privacy concerns, and protection behaviour, *Cyberpsychol Behav* 2018Dec,11 (6) 763 5.doi:10.1089/cpb.2018.0240.