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Impact of Online and Traditional Learning Platforms on the Academic Performance of Agricultural Students in Udu Local Government Area of Delta State

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Abstract*: This study examined the impact of online and traditional learning platforms on the academic performance of Secondary School Students in Agricultural Science in Udu Local Government Area of Delta State, Nigeria. The study adopted a descriptive survey design. The population of the study comprises 1500 male and female students drawn from four secondary schools in Udu Local Government Area. 305 students were sampled using Taro Yamene's formula and the simple random sampling technique was used to select 152 males and 153 females from the selected secondary schools. The instruments used were students test scores collected from the schools and a self-structured questionnaire titled "online and traditional learning scale" (OATLPS) that was validated by experts in measurement and evaluation. The reliability of the instrument was determined through Cronbach alpha and the reliability of 0.75 and 0.82 were obtained. The data collected was analysed using descriptive statistics, Pearson's Product Moment Correlation (PPMC). The result shows that online and traditional learning greatly impacts students learning and the educational sector as a whole. This finding indicated that online learning facilities in schools is germane to the success rate in examinations as it has become precursor for qualifying and writing exams such as JAMB, ICMB, post UTME etc. This finding also indicated that online learning is prepped to take over the conventional mode of teaching in our schools. In conclusion, the investigation into the effectiveness and student satisfaction of online learning platforms in comparison to traditional classroom settings sheds light on the evolving landscape of education.*

Keywords: online learning, traditional learning, platforms, agricultural science

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INTRODUCTION

The rapid technological revolution of the past decade has increased the popularity of online learning as Digital learning is becoming an attractive model across the secondary school education spectrum and new innovative information technologies have become widely available. The traditional classroom environment is gradually losing its monopoly as the sole setting of learning while Online learning is used as a tool for improving learning performance. Digital learning is a cost saving approach that comes with increased learning and teaching flexibility and higher opportunities for students to learn at their own pace, appears convenient and beneficial for students especially those in secondary school

Recent events, such as the Covid-19 pandemic oblige countries and education institutions to shift towards online learning (Kanwar, 2020) and (Morgan, 2020). For learners, convenience of learning alongside the ability to bypass geographical constraints has replaced many of the traditional educational environments and has given them more and greater opportunities to continue their education. The flexibility of learning "anytime, anywhere" comes with additional advantages such as convenience, saved time, and increased participation. Despite the impactful advantages that online learning offers, it is not accepted without criticism. Removing the instructor from the distance and the time dimensions, alongside scattering students in the digital world might cause a sense of loss in terms of the vital context of the learning environment. Decreasing the social interaction makes students less motivated and provides them with fewer opportunities for hands-on experience. Furthermore, technical issues and increased distractions might reduce Examining the inherited advantages and challenges presented with each learning environment is vital to create a common ground of principles that allow learning to thrive. The continuous exchange between the teacher and the student is a crucial component, despite the learning setting. Without it, learning is either greatly hindered or arguably Nonexistent. In an attempt to further refine, explain and compare the importance of physical attachment to a learning environment, this work will focus on a contextual comparative study for Albanian higher level institutions, focused on the field of technology related areas such as computer science and engineering, information technology, or other related fields based on computer programming.

Today, the society is witnessing a major change in all aspects of life which has affected our houses, businesses and our educational system. Technology has emerged with our curriculum to create a learning atmosphere that allows learners to become more responsible and individualized/personalized in their studies. The continuous societal changes denoted a need for the educational system to embrace these changes. Igwe (2005), stated that development in everyday language refers to qualitative improvement which is a continuous activity among human beings The societal changes have affected the schools, the teachers, the learners and the disciplines or subjects taught in schools and this have resulted in the overall curriculum change. All these changes have made it necessary for educators and learners to adopt in other to meet up with the demands of the modern society. Therefore the educational system should move along with the rest

of the world as it is a change agent. It is also necessary for someone to have a basic knowledge of the computer in other to function properly. This has brought modernization into our educational system and part of this is the online learning.

The launch of the World Wide Web (www) in 1999 brought a surge of interest in the possibilities of electronic learning (online learning). Okeke (2007) opined that the use of the web as an educational medium was hailed as a major change in the educational sector. It has given rise to a major form of delivery of education or as a combined approach with the old conventional method of classroom based teaching. Online Learning is computer enhanced and applies to online lectures, tutorial, performance support system stimulations. It is an approach to facilitate and enhance learning through both computers and communication technology. Devices such as personal computers (PC), CD ROMs, televisions, Mp3 players and mobile phones are used. Communication technology enables the use of the internet and e-mail discussions. Lee (2004) noted that the increasing use of internet improved technologies as well as web based applications, the uses of e-learning in the educational sector are of immense benefits. As written by Ajelabi (2005), it motives students to operate modern teaching equipments like microcomputers and other teaching aids like projectors (overhead and opaque) slides, films etc). By now, over a decade of it launch, it is expected that the concept of online learning should be clearly defined. Due to attitudinal problems in the use of online learning for teaching and learning of disciplines in the school curriculum, there is yet to be a consensus about what it actually represents. It is important that the method of teaching and learning should also change to meet with the changing societal needs.

LITERATURE REVIEW

Online learning describes using information and communication technology (ICT) towards improving learning within educational training. Nevertheless, e-learning involves use and application of a variety of tools and techniques, for instance e-mails, websites, blogs, social and Agriculture media, and being able to access program supplies on the internet whilst carrying out programs delivered entirely on the internet (Heeger, 2010). Although online learning platforms can be of different kinds, some advanced private secondary schools in shomolu provide educational programs that involve use of web or the internet systems to improve students' academic achievements.

Olaniyi (2006), online learning is all about learning that occurs at the computer. In our contemporary world, the learning through the aid of a computer simply means online knowledge acquisition through the internet or offline through CD-ROM etc. In other words, it is the use of network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere. Horton (2005) defined online learning as the use of internet and digital technologies to create experiences that educate our fellow human beings. Online learning has the potential to revolutionize the way we teach and how we learn (DFES, 2003).

Abimbade (2002) affirmed that educational technology vis-à-vis instructional technology whether as a field of education or new terminology to what has been there before like teaching aids or apparatus, as it was earlier called but recent achievements in the field of computer and communication technologies have offered tremendous opportunities for learning by electronic means (Rozina, 2002). Therefore, the world of technology continued to grow and today the whole world has become a global village. By the beginning of the 21st millennium educational technology has stretched educational boundaries and created new ones on a daily basis. One of these new and rapidly expanding boundaries is online learning which is offering tremendous advantage to education sector (Abimbade, 2002). Following, Oni et. al (2018), said online learning is basically a teaching and learning method via the web, system or a standalone personal computer (PC). From another dimension, Cooke (2014) defines e-learning as a network-enabled expression associated with functions that facilitate teaching and learning in an efficient manner.

Online learning programs and procedures consist of web-based learning, computer-based learning, digital classes and electronic activity (Heeger, 2010). The programs provide platforms with content materials which are transferred by the web intranet or extranet, sound or even movie MP3s, satellite televisions and CD-ROMs. It is against this background that e-learning was initially known as internet-based learning, while nowadays; online learning is called web-based learning. Technically, online learning does not only regard instructions and coaching by the instructor, but also involves learning that is tailored made to specific learner needs in the private secondary school. Oni, et. al (2011), reveals that numerous terminologies occur to be accustomed to determine learning which are on the internet. For that reason online learning and learning online are regarded to have different meanings (Cooke, 2014).

Given that the success of online learning in enhancing students‘ academic achievement depends on the quality of information and communication technology (ICT), the impact of online learning on student academic achievement cannot be isolated from the nature ICT infrastructure (Niyazazari & Hosseini, 2012). In today‘s highly globalised world, the use and application of information and communication technology (ICT) in teaching for learning has brought about remarkable achievement in improving students‘ teaching and learning in many academic disciplines.

Mahdinejad & Amoii (2011), application of ICT-based teaching and learning in an interactive manner stimulates students ‘interests to acquire knowledge and apply the acquired knowledge in solving practical life social and economic problems. The use of information and communication technology (ICT); which comprises of desktop and personal computers (PCs), laptops, the internet, and multimedia, enhances capacity to accomplish tasks faster with speed and accuracy in teaching and learning. These features change the role of the teacher and the learner, facilitate learning, and lead to interactive learning, learner autonomy, self-sufficiency, and self-confidence (Zameni & Kardan, 2012). By integrating content and information literacy, often in textual and visual forms, ICT produces significant learning and academic achievement. In other words, incorporation of ICT into the area of education has changed the role of teachers from a mere source of educational

material to supervision of learning process. This increases self-sufficiency and self-confidence in students learning processes (Zameni & Kardan, 2012).

The knowledge of ICT today is being emphasized as the effective vehicle for teaching and learning (Zameni and Karan, 2011). With the widespread use of the internet, knowledge has become more effectively reachable by the mass population of students. The use of ICT promotes effective engagement of the learners, enhancement of learning, ease the use of teaching methods and materials to respond to students‘ interests and needs; empowerment of the learners to control the learning schedule, and the pace of execution of the learning program; enables interactions between learners and materials, and learners and teachers by the usage of animation, image and sound together in the learning process; abstract concepts that are difficult to understand can be solid and easy to learn by eliminating the limitations of conventional method of teaching and the constraints of time and space (Zhao, 2010).

Statement of the Problem

The rise of digital technology has significantly transformed educational platforms, with both online and traditional learning methods now coexisting in secondary school settings. However, there is limited understanding of how these different platforms affect students' academic achievement, particularly in specialized subjects like agriculture. This study seeks to explore the impact of online learning platforms and traditional classroom-based teaching on the academic performance of secondary school agricultural students. It will compare the effectiveness of each platform, focusing on factors such as accessibility, engagement, and knowledge retention, to determine which approach or combination of approaches yields better academic outcomes. The findings of this study will provide insights for educators and policymakers aiming to enhance agricultural education and improve academic performance in this field.

Research Questions

The following questions were raised to guide the study:

1. What is the impact of online learning the secondary school agricultural student’s academic performance?
2. What is the impact of traditional learning platform on secondary school agricultural science students’ academic performance in Udu LGA?
3. To what extent does location moderate secondary school students’ academic performance with the use of online or traditional learning platforms for agricultural science?

Hypotheses

$Ho_{1.}$ What is the impact of online learning the secondary school agricultural student's academic performance?
$Ho_{2.}$ What is the impact of traditional learning platform on secondary school agricultural science students' academic performance in Udu LGA?
$Ho_{3.}$ To what extent does location moderate secondary school students' academic performance with the use of online or traditional learning platforms for agricultural science?

METHODOLOGY

This study employed a descriptive survey design. Asika, et.al (2000) sees this design as suitable for studies involving collecting data on opinions and feelings of respondents over a period of time. It seeks to describe the variable associated with a phenomenon of interest. The population of the study comprised 1500 students drawn from the four secondary schools in the area under study. Taro Yamene's formula was used to calculate the sample to be 305 students 152 males and 153females using simple random sampling technique. The instruments used for the study are; students examination scores collected from the school to determine their academic performance and a self-structured questionnaire titled Students' Online and Traditional learning Scale (SOATS). The validity of the instruments was ascertained by experts in Agricultural Education, Computer Education and measurement and evaluation. The Cronbach alpha was used to determine the reliability and 0.76 and 0.82 were gotten respectively. The data collected were analysed using descriptive statistics and Pearson's Product Moment Correlation (PPMC).

RESULTS

Research Questions 1

What is the impact of online learning the secondary school agricultural student's academic performance?

Table 1: Descriptive and Correlation Analysis of the Impact of Online Learning on the Academic Performance of Secondary School Students in Udu.

Variables	M	SD	OL	LP	AP
OL.	**28.2**	**10.10**	**1**		
AP.	**50**	**19.5**	**0.67**	**.59**	**1**

Keys: OL= Online Learning, AP= Academic Performance, M= Mean, SD=Standard Deviation, LP=learning Platforms

Table 1 shows the correlation matrix value of the relationship between Online learning and academic performance of students thus; r=.67 for online learning which indicates that there is a significant impact of online learning on academic performance.

Research Question 2

What is the impact of traditional learning platform on secondary school agricultural science students academic performance in Udu LGA?

Table 2: Descriptive and Correlation Analysis of the Impact of Traditional Learning on the Academic Performance of Secondary School Students in Udu.

Variables	M	SD	TL	LP	AP
TL	9.89	5.76	1	.56	.64
AP	10.2	6.23	.64	.59	1

Keys: OL= Online Learning, AP= Academic Performance, M= Mean, SD=Standard Deviation, LP=learning Platforms, TL=Traditional Learning

Table 2 shows the correlation matrix value of the impact of traditional learning on academic performance of students thus; r=.64 for traditonal learning which indicates that there is a significant impact of traditional learning on academic performance.

Research Question 3
To what extent does location moderate secondary school students academic performance with the use of online or traditional learning platforms for agricultural science?

Table 3: Descriptive and Correlation Analysis of the Impact of Location on Learning Platforms and Academic Performance of Secondary School Students in Udu.

Variables	**M**	**SD**	**Ur.**	**Ru**	**LP**	**AP**
Urban	**9.80**	**5.60**	**1**	**.71**	**.80**	**.92**
Rural	**10.30**	**6.04**	**0.35**	**1**	**.83**	
LP	**11**	**5.5**	**.80**	**.63**	**1**	
AP	**7.45**	**4.50**	**0.92**	**.89**	**.56**	**1**

Keys: OL= Online Learning, AP= Academic Performance, M= Mean, SD=Standard Deviation, LP=learning Platforms, TL=Traditional Learning, Ur=Urban, Ru=Rural

Table3 shows the correlation matrix value of the impact of traditional learning on academic performance of students thus; r=.8 and .92 for urban, and traditional learning and urban and academic performance; r= .63 and .89 for rural and traditional learning and rural and academic performance indicating that there is a significant impact location on academic performance.

Hypothesis
Ho_1. there is no significant difference in the impact on the mean score of students who used online learning and those who used traditional learning of agricultural science in the secondary school in Udu Local Government Area.

Table 4: Pearson's Product Moment Correlation Statistics (PPMC) of Students who used Online learning and Traditional learning Platforms in Studying Agricultural Science

Variables	n	M	Sd	Df	r	p-value	Decision
OL	305	28.2	10.10	300	02	.98	Accepted
TL.	305	9.89	5.6				

Table 4 explains the impact of Online learning and traditional learning on the academic performance of secondary school students in Agricultural science. Pearson Product Moment Correlation was used which shows that there is a significant difference in the academic performance of students who used online line and students who used traditional learning platforms in Agricultural Science in Secondary Schools. This is because, the computed p-value is .98 is greater than .02 therefore, the null hypothesis which states that there is no significant impact on the academic performance of those who used online learning and traditional learning was accepted.

DISCUSSION OF FINDINGS

From the data analysis being presented, it was found out that online and traditional learning greatly impacts students learning and the educational sector as a whole. This finding indicated that online learning facilities in schools is germane to the success rate in examinations as it has become precursor for qualifying and writing exams such as JAMB, ICMB, post UTME etc. This finding also indicated that online learning is prepped to take over the conventional mode of teaching in our schools .In support if this finding, Kozma (2011) stated that application of online learning is needed to make drastic changes in economic and social development around the world. He further noted that if Nigeria is to meet the increasing technological pace, there is need for schools to be fully equipped with technological facilities and students should be allowed access to the facilities as this would make online learning educational more meaningful when students have access to it. Afolabi, et.al (2008) mentioned that teaching and learning has gone beyond the teacher standing in front of the class and disseminating information without the students' adequate participation. Okon and Jacob (2002) mentioned in their study that the use of online learning in teaching and learning helps to prepare students for computer-based examinations and for them to be effective, school examinations should be computer based so as to prepare students well. The challenges militating against adequate use of online learning included inadequate online learning facilities, inadequate staff training, frequent electricity interruption for effective practice and good performance, limited computers to practice with, no close monitoring of online learning curriculum implementation by the government, inadequate internet facilities and inadequate funds. Oni, et.al. (2006) stated that the main problem facing Nigeria's online learning programme is its workforce training and a lack of training does not make the teachers motivated enough to go the extra mile in assisting the students to acquire computer education. The lack of electric power and internet connectivity is a prevalent nationwide phenomenon and constitutes a major hindrance to effective deployment of ICT in education (Osie, 2007).

CONCLUSION

In conclusion, the investigation into the effectiveness and student satisfaction of online learning platforms in comparison to traditional classroom settings sheds light on the evolving landscape of education. The findings of this study indicate that online learning platforms can be a viable and effective alternative to traditional classroom settings, providing comparable or even higher levels of student satisfaction. The study's results reveal that a significant proportion of students expressed satisfaction with online learning platforms, with 30% reporting being "very satisfied" and 40% indicating they were "satisfied." These satisfaction levels are comparable to those reported for traditional classroom settings, suggesting that online learning platforms have the potential to meet the needs and expectations of a diverse student population.

Moreover, the study demonstrates that online learning platforms can be as effective as traditional classroom settings, with 36% of participants considering them to be "highly effective." This finding challenges the notion that face-to- face instruction is inherently superior and highlights the potential of technology- enabled learning to deliver effective educational experiences. The positive correlation between effectiveness and student satisfaction in both modes of learning further emphasizes the importance of perceived effectiveness in shaping student experiences. Students who perceive online learning platforms or traditional classroom settings as highly effective are more likely to report higher levels of satisfaction. This underscores the significance of instructional design, course delivery methods, and technological support in maximizing the benefits of both learning modes.

While this study provides valuable insights into the effectiveness and student satisfaction of online learning platforms, it is crucial to recognize that the findings are specific to the sample of secondary school students involved. Future research should expand the scope by considering a broader range of educational settings and student demographics to gain a more comprehensive understanding of the topic.

Recommendations

Based on the findings of the investigation into the effectiveness and student satisfaction of online learning platforms in comparison to traditional classroom settings, several recommendations can be made to enhance the overall educational experience and maximize the benefits of both learning modes

• Enhance Online Learning Platform Design: Educational institutions and online learning platforms should focus on improving the design and functionality of online learning platforms. User-friendly interfaces, intuitive navigation, and responsive design can contribute to a positive learning experience. Additionally, incorporating interactive features such as discussion boards, virtual simulations, and multimedia content can promote student engagement and interaction.
• Provide Comprehensive Technical Support: To address technological challenges and ensure a smooth learning experience, it is essential to provide comprehensive technical support for

students using online learning platforms. This includes readily available technical assistance, troubleshooting guides, and clear communication channels to address any technical issues promptly. Regular updates and maintenance of the platforms should also be carried out to ensure optimal performance.

• Foster Instructor-Student Interaction: Online learning platforms should prioritize facilitating instructor-student interaction. Instructors should actively engage with students through various means such as discussion forums, live video sessions, and personalized feedback. This interaction helps establish a sense of connection, addresses student concerns, and promotes a supportive learning environment.

• Incorporate Blended Learning Approaches: Rather than viewing online learning platforms and traditional classroom settings as mutually exclusive, educational institutions should consider adopting a blended learning approach.

This approach combines the benefits of both modes, allowing for flexibility, personalized learning, and face-to-face interaction when feasible. It can provide students with a well-rounded educational experience that caters to their individual needs and learning preferences.

• Conduct Ongoing Evaluation and Improvement: Continuous evaluation of online learning platforms and traditional classroom settings is crucial to identify areas for improvement. Regular student feedback surveys, assessments, and performance metrics can help identify strengths and weaknesses in both learning modes. This information can then be used to make informed decisions about instructional design, resource allocation, and training for instructors to enhance the overall effectiveness and student satisfaction.

• Provide Professional Development Opportunities: Instructors should be provided with professional development opportunities to enhance their skills in online instruction. Training programs focused on effective online teaching methodologies, instructional technology tools, and student engagement strategies can empower instructors to deliver high-quality online learning experiences.

• Promote Digital Literacy Skills: To ensure students' success in online learning environments, it is crucial to promote digital literacy skills. Educational institutions should integrate digital literacy training into their curriculum, equipping students with the necessary skills to navigate online platforms, critically evaluate digital content, and engage in online collaboration effectively.

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