



## Perceived Challenges of Agricultural Education Lecturers in the Effective Adoption of E-Learning Technologies in Universities

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### ABSTRACT

This study delved into the perceived challenges encountered by Agricultural education lecturers in the successful integration of e-learning technologies within universities located in Abia State, Nigeria. It addressed two research questions and tested two null hypotheses at a significance level of .05. Employing a descriptive survey research design, the target population comprised 47 Agricultural education lecturers drawn from two public universities in Abia State, namely, Michael Okpara University of Agriculture Umudike (MOUUAU) and Abia State University (ABSU). Given the manageable population size, no sampling was undertaken, and the entire population was surveyed. Data collection was facilitated through a researcher-designed questionnaire entitled "Challenges in Adopting E-learning Technologies Questionnaire (CAETQ)." To ensure the instrument's validity, it underwent scrutiny by three experts from the College of Education at Michael Okpara University of Agriculture Umudike, Abia State, including two experts from the agricultural education department and one from the evaluation department. The instrument's reliability was assessed using Cronbach's alpha, yielding a coefficient index of 0.79. For data analysis, mean, standard deviation, and t-test statistics were employed. The study's findings unveiled seven challenges attributed to lecturers and thirteen challenges linked to governmental factors concerning the adoption of E-learning technologies in universities within Abia State, Nigeria. Among the study's recommendations, it urged the government and relevant institutions to ensure the provision of adequate e-learning facilities within schools. This step is seen as fundamental to enhancing the teaching and learning processes, ultimately equipping students with the essential skills and knowledge necessary for national development.

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### INTRODUCTION

Agricultural education is that type of education that is expected to improve agricultural production in any country the reason being that, it equips learners with modern ways of practicing agriculture with positive influence on agricultural production. Through the training of farmers, associated professions, and agricultural extension

specialists, it is one of the strategies to get ready for sustainable agricultural development. In order to pursue progress and a higher standard of living, agricultural education entails educating people in a way that prepares them to utilize nature in the future while taking into account economic, social, and environmental concerns in a balanced manner (Smith and Rayfield, 2016). If so, it is

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assumed that developing nations—including Nigeria—will always adhere to the standards set by the industrialized nations of the globe for the practice of the profession of agriculture. It is no longer news that wealthy nations have technologically upgraded every aspect of their economies, including agricultural output. Due to this technological advancement, they are now well-positioned to both feed their own population and generate income through significant exports to other nations. This clearly indicates that Nigeria, a developing nation, must follow suit by technologically improving agricultural production, which can be easily achieved if agricultural education is taught in our various schools in a technologically oriented manner, especially at the secondary and tertiary levels. According to several experts (Auwal, 2013), the lecture technique, which is now the most popular way to teach agriculture in many of our schools, does not result in the level of production that the country needs because of the numerous issues associated with its use. However, undergraduate agriculture education need a new focus in order to stay up with the times. Because there are so many variables that might affect agriculture, everyone involved must always be ready to respond, adapt, and plan ahead (Alawa, Asogwa, and Ikelusi, 2014).

To prepare the workforce of the future in agriculture, tertiary schools offering undergraduate agricultural programs must undergo major change. According to Carlisle, De Wit, DeLonge, Calo, Getz, Ory, and Iles (2019), these institutions must be on the cutting edge and provide students with the chance to learn about the complexities of agriculture, address its new challenges, and discover their opportunity to participate as leaders. It is difficult to keep up with the agricultural industry's constant change, thus curriculum development and teaching techniques need to be considerably more dynamic than they have traditionally been (Njura, Kaberia, and Taaliu, 2020). E-learning is one strategy to enhance agricultural education globally and promote sustainable agriculture (Ra, Ahmed, and Teng, 2019). Eze, Chinedu-Eze, and Bello (2018) use the term "e-learning" to describe knowledge

that has been packaged utilizing technical infrastructures, online self-study, and ongoing learning that involves group effort. According to Zhang, Lu, and Boutab (2010), e-learning, also known as computer-based learning, is a learning process that combines digitally transmitted content with system-based services and mentoring support. E-learning is the term used to describe the technology used to gather, store, edit, and transmit information in a variety of forms. This includes using computers, radio, satellites, online self-study programs, interactive white boards, data projectors, video conferences, digital cameras, electronic e-mail, video cassette recorders, internet optical fiber technologies, and all varieties of information technologies (IT) hardware and software (Adebayo, 2010). Given that civilizations actively rely on real-time information to be proactive and to discount the effects of environmental changes, the development of information and communication technology (ICTs) and the pervasive connectedness of the internet and networks boost man's ingenuity and chances.

As a result, higher education institutions (HEIs) have started to implement rigorous programs that support the use of ICTs for efficient in-person and online teaching and learning as well as for the development of specialized skills required to make socioeconomic contributions in the knowledge world (Eze et al., 2018). E-learning is one of the most important technological advancements in education since it provides prospective students with a cutting-edge learning environment that is different from traditional learning. E-learning is an example of an IT-based innovation in education. In this regard, e-learning platforms are thought to contribute to enhancing learners' access to training, interaction, and communication to speed up the learning process. Therefore, the implementation of e-learning systems and technology will make it possible for education to reach the majority of students and boost students' capacity to readily access education from various geographic locations, such as through the use of television, computers, and the internet. E-learning is therefore seen as an immediate answer for HLIs to fill the gap between

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the rising demand for higher education and the restricted supply of resources, namely lecturers (Mtebe and Raisamo, 2014). It has been observed that the majority of Higher Learning Institutions (HLIs) in developing nations, such as Tanzania, do not fully integrate e-learning as a substitute technique of educating a sizable population in universities. However, some HLIs adopt a hybrid strategy that blends conventional classroom instruction with online learning.

E-learning systems are essential for streamlining how education is provided at HLIs, but multiple studies have revealed that there are many barriers that prohibit the system from being deployed in HLIs of developing countries, including Nigeria. The lack of technical and managerial support, the lack of computer and/or e-learning knowledge among educational stakeholders (students and lecturers), resistance to change due to apprehension about new technology, unreliable electricity power, bandwidth restrictions, and high access costs are a few examples of challenges that have been reported (Sanga et al., 2013). Another significant issue is the students' and academic staff's aversion to adopting new, technologically based teaching and learning approaches in place of old pedagogical ones (Ra et al., 2015). Due to the severe underfunding of the entire educational system, institutions must use their remaining resources to address more immediate and fundamental demands. Additionally, tertiary institutions' ability to work with the private sector or find alternative funding sources for ICT educational initiatives has been hampered by the over-reliance of educational institutions on the government (Njuru et al., 2017). What's more, the ineffective coordination of various ICT for educational initiatives has allowed education to mushroom across the country's educational institutions. Many tertiary institutions are forced to run above their capacity due to these difficulties. Therefore, the purpose of this study was to investigate the difficulties agricultural education lecturers see in effectively using e-learning in higher education.

### Statement of the problem

It has been demonstrated that e-learning in the classroom improves communication, asynchronous and synchronous learning, cooperation and collaboration, cost effectiveness, and pedagogical improvement without being limited by time or space (Sife, Lwoga, and Sanga, 2007). It is thought to be the capacity to concentrate on the demands of certain students. According to Howard and Mozejko (2015), focusing on the requirements of individual students rather than those of educational institutions or teachers can help deliver knowledge more effectively in the digital age. E-learning also makes it possible to complete educational goals with the least amount of work and in the shortest amount of time. As a result, when administering the e-learning environment, its effects on educational learning are shown in the equal access to the information given to users regardless of their locations, races, ethnic backgrounds, and ages. The atmosphere for online learning also encourages students or learners to rely on themselves, so that teachers no longer serve as the only source of knowledge but rather as mentors and advisors (Joshua et al., 2016). In order to assist the deployment of e-learning, there is a focus on making significant investments in ICT, paying specific attention to Higher Learning Institutions (HLIs). As a result, adopting e-learning is seen as the best strategy for reaching a large number of students on a budget, as well as using technology to gain a competitive edge by harnessing telecommunication networks and ensuring that there are enough resources and qualified employees on hand.

Despite the government's efforts and support for the use of e-learning in schools, there are still many adoption impediments for e-learning systems that have been identified by personal researches by lecturers and the government itself. As a result, e-learning technology in Nigeria, with a focus on the South East, is still in its infancy. Therefore, the purpose of this study was to ascertain the difficulties agricultural education lecturers perceive in effectively using e-learning in higher education.

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### **Purpose of the study**

The general purpose of the study was to examine the perceived challenges of agricultural education lecturers in the effective adoption of e-learning technologies in Universities in Abia state, Nigeria.

Specifically, the study sought to;

1. Lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria.
2. Governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria

### **Research Questions**

The following research questions were put forward to guide the study:

1. What are the lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria?
2. What are the governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria?

### **Hypotheses**

The following null hypotheses will be tested at 0.05 level of significance:

- H0<sub>1</sub>: There is no significant difference in the mean responses of the male and female lecturers on the lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria
- H0<sub>2</sub>: There is no significant difference in the mean responses of the male and female lecturers on the governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria

### **METHODOLOGY**

This study investigated perceived challenges of agricultural education lecturers in the effective adoption of e-learning technologies in Universities in Abia state, Nigeria. The study

adopted a descriptive research design. Two research questions and two null hypotheses guided the study. The population for the study consisted of 47 Agricultural education lecturers drafted from the 2 Public Universities in Abia state, Nigeria (i. e - MOUAU and ABSU), while there was no sampling carried out because of the manageable number of the population; hence the whole population was used as the sample. A self-made instruments was developed by the researcher from information got from extensive review of literatures; titled Challenges of Effective Adoption of E-learning Technologies Questionnaire (CEAETQ). The instruments was face and content validated by three experts in Agricultural education department, Measurement and Evaluation; all from the MOUAU and ABSU respectively. Their corrections and suggestions were utilized to improve the initial copies of the questionnaire to produce the final copies. The reliability of Questionnaire (CEAETQ) was determined using Cronbach Alpha reliability method which yielded a reliability index of 0.79. The data which was obtained through the administration of the instruments was analyzed using mean and standard deviation to answer the research questions and t-test to test null hypotheses at 0.05 level of significance since the study compared the responses of two group of respondents. To answer the research questions, a cut-off point of 2.50 was established for decision making. However, The 2.50 was derived from the lower limit of 3 of a 4-point scale. Any item with mean below 2.50 was regarded as disagree while any item with mean of 2.50 or above was regarded as agreed and the null hypothesis for any item was rejected when the calculated t-value is higher than the alpha value of 0.05 but was accepted when the calculated t-value is less than or equal to the alpha value of 0.05.

### **PRESENTATION OF RESULTS**

**Research Question 1:** What are the lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria?

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**H0<sub>1</sub>:** There is no significant difference in the mean responses of the male and female lecturers on the lecturers' based challenges in the adoption of E-

learning technologies in Universities in Abia state, Nigeria

Data for answering research question 1 and Hypothesis 1 are presented in Table 1.1.

**Table 1:** Mean and Standard Deviation of the respondents on the lecturers' based challenges in the adoption of E-learning technologies in Universities (n=47)

S/N	Lecturers' based challenges	$\bar{X}$	SD	P-value	Remark
1	Inadequate interest in accepting the idea of e-learning	3.17	.76	.05	Agreed, NS
2	technological tools is an impediment to adopting it				
2	Inadequate awareness on my side about e-learning technological tools affects its adoption	3.25	.82	.02	Agreed, NS
3	Low literacy level in using computer technology and management affects my e-learning classes	3.21	.82	.06	Agreed, NS
4	Being resistance to change is an impediments to the adoption of e-learning technologies	3.22	.85	.09	Agreed, NS
5	Inadequate technical knowledge to access technological tools and use applications such as Microsoft Word, Excel and Power Point affects my e-learning classes.	3.26	.82	.04	Agreed, NS
6	Inability to purchase data for online classes because of high rates is an impediments to the adoption of e-learning technologies	3.11	.80	.53	Agreed, NS
7	Not having enough time to convert course material from hard-copy to e-content is affecting my e-learning classes	3.07	.82	.04	Agreed, NS
8	Inability to go for advanced training in using technological tools in teaching is a problem to the adoption of e-learning classes	3.08	.82	.46	Agreed, NS
9	Lack of confidence and experience in computers usage affects the adoption of e-learning technologies	2.99	.79	.45	Agreed, NS

SD = Standard Deviation of the respondents,  $\bar{X}$  = Mean of the respondents and NS = Not significant

Data in Table 1 revealed that all the 9 items had their mean ratings ranging from 2.99 to 3.26 and were above the cut-off point of 2.50. This indicated that the respondents agreed that all identified the lecturers' based challenges are impediments affecting the adoption of e-learning technologies in Universities. The standard deviation of all the 9 items ranged from .02 to .53, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria.

The p-values on all the items were all greater than the alpha-value of 0.05. With the forgoing, we therefore accept the null hypothesis for the items and reject the alternate hypothesis, which means there is no significant difference in the mean responses of the male and female lecturers on the lecturers' based challenges in the adoption of e-learning technologies in Universities in Abia state, Nigeria.

**Research Question 2:** What are the governmental based challenges of agricultural education lecturers in the adoption of E-learning

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technologies in Universities in Abia state, Nigeria?

education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria

**H0<sub>2</sub>:** There is no significant difference in the mean responses of the male and female lecturers on the governmental based challenges of agricultural

Data for answering research question 2 and Hypothesis 2 are presented in Table 2.1.

**Table 2:** Mean and Standard Deviation of the respondents on governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities (n=47)

S/N	Governmental based challenges	$\bar{X}$	SD	P-value	Remark
1	Inadequate supply of electricity to e-learning centres affects my teaching using e – learning technologies	2.94	.79	.63	Agreed, NS
2	Inability to fund the universities in purchasing e-learning technologies is an impediments to the adoption of e-learning technologies	3.20	.82	.30	Agreed, NS
3	Adopting e-learning technologies is impede because of lack regular ICT training to lecturers	2.68	.56	.97	Agreed, NS
4	Lack of ICT-systems research and development affects my adopting of e-learning technologies	2.54	.59	.41	Agreed, NS
5	Presence of obsolete e-learning technologies in the school affects my teaching using e – learning technologies	2.96	.84	1.0	Agreed, NS
6	Lack regular ICT training to lecturers and staff is an impediments to the adoption of e-learning technologies	2.68	.56	.43	Agreed, NS
7	E-learning technological tools adoption is impede because of lack of funds for maintenance	2.69	.61	.54	Agreed, NS
8	Inadequate security for universities Cyber Café is an impediments to the adoption of e-learning technologies	3.20	.82	.30	Agreed, NS
9	Inadequate e-learning experts or manpower to train both the staff and the students is a challenge to the use of e learning technologies in teaching	2.68	.56	.43	Agreed, NS

SD = Standard Deviation of the respondents,  $\bar{X}$  = Mean of the respondents and NS = Not significant

Data in Table 2.1 revealed that all the 8 items had their mean ratings ranging from 2.68 to 3.20 and were above the cut-off point of 2.50. This indicated that the respondents agreed on all the identified governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria. The standard deviation of all the 10 items ranged from .56 to .84, which showed that the respondents were not too far from the mean and opinion of one another in their responses on

the governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria

The p-values on all the items were all greater than the alpha-value of 0.05. With the forgoing, we therefore accept the null hypothesis for the items and reject the alternate hypothesis, which means there is no significant difference in the mean responses of the male and female lecturers on the governmental based challenges of agricultural education lecturers in the adoption

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of E-learning technologies in Universities in Abia state, Nigeria.

### FINDINGS OF THE STUDY

The following findings emerged from the study based on the research questions answered and hypothesis tested.

#### Lecturers' based challenges in the adoption of E-learning technologies in Universities

The lecturers' based challenges in the adoption of e-learning technologies in Universities in Abia state, Nigeria is seen in the following ways;

1. Lack of interest in accepting the idea of e-learning technological tools is an impediment to adopting it
2. Inadequate awareness on my side about e-learning technological tools affects its adoption
3. Low literacy level in using computer technology and management affects my e-learning classes
4. Being resistance to change is an impediments to the adoption of e-learning technologies
5. Lack of technical knowledge to access technological tools and use applications such as Microsoft Word, Excel and Power Point affects my e-learning classes.
6. Inability to purchase data for online classes because of high rates is an impediments to the adoption of e-learning technologies
7. Not having enough time to convert course material from hard-copy to e-content is affecting my e-learning classes
8. Inability to go for advanced training in using technological tools in teaching is a problem to the adoption of e-learning classes
9. Lacking confidence and experience in computers usage affects the adoption of e-learning technologies

There was no significant difference in the mean rating of Male and Female Lecturers on the Nine (9) items of the lecturers' based challenges in the adoption of e-learning technologies in Universities in Abia state, Nigeria

#### Governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities

The governmental based challenges of agricultural education lecturers in the adoption of e-learning technologies in Universities in Abia state, Nigeria is seen in the following ways;

1. Inadequate supply of electricity to e-learning centres affects my teaching using e – learning technologies
2. Inability to fund the universities in purchasing e-learning technologies is an impediments to the adoption of e-learning technologies
3. Adopting e-learning technologies is impede because of lack regular ICT training to lecturers
4. Lack of ICT-systems research and development affects my adopting of e-learning technologies
5. Presence of obsolete e-learning technologies in the school affects my teaching using e – learning technologies
6. Lack regular ICT training to lecturers and staff is an impediments to the adoption of e-learning technologies
7. E-learning technological tools adoption is impede because of lack of funds for maintenance
8. Inadequate security for universities Cyber Café is an impediments to the adoption of e-learning technologies
9. Inadequate e-learning experts or manpower to train both the staff and the students is a challenge to the use of e learning technologies in teaching

There was no significant difference in the mean rating of Male and Female Lecturers on the Nine (9) items on the governmental based challenges of agricultural education lecturers in the adoption of e-learning technologies in Universities in Abia state, Nigeria

#### DISCUSSION OF FINDINGS

The findings were discussed based on the following sub-heading derived from the study

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objectives and research questions: lecturers' based challenges in the adoption of e-learning technologies in Universities and governmental based challenges of agricultural education lecturers in the adoption of e-learning technologies in Universities in Abia state, Nigeria.

The responses of the respondents on the lecturers' based challenges in the adoption of e-learning technologies in Universities indicated that the respondents agreed that all identified the lecturers' based challenges are impediments affecting the adoption of e-learning technologies in Universities. The standard deviation of all the items showed that the respondents are not too far from the mean and opinion of one another in their responses on the lecturers' based challenges in the adoption of E-learning technologies in Universities in Abia state, Nigeria. More so, the p-values on all the items were all greater than the alpha-value of 0.05. With the forgoing, we therefore accept the null hypothesis for the items and reject the alternate hypothesis, which means there is no significant difference in the mean responses of the male and female lecturers on the lecturers' based challenges in the adoption of e-learning technologies in Universities in Abia state, Nigeria. However, the findings of the above study were in agreement with the Ngampornchai and Adams (2016) on teachers and students' acceptance and readiness for e-learning in Northeastern Thailand and Nigeria. They revealed the reason why usages of e-learning were low them was as a result of low awareness and knowledge level, complexity of technology and inadequate e-learning infrastructures in the schools. Almaiah *et al.* (2020) also reported similar results that lack of awareness and knowledge lead to teachers not taken responsibility for their e-learning utilization.

More so, the views and observations of the authors cited on the lecturers' based challenges in the adoption of e-learning technologies in Universities helped to justify the findings of the study on research question 1.

The responses of the respondents on governmental based challenges of agricultural education lecturers in the adoption of e-learning technologies in Universities, the result revealed

that respondents agreed on all the identified governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria. The standard deviation of all the 10 items ranged from .56 to .84, which showed that the respondents were not too far from the mean and opinion of one another in their responses on the governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria. More so, the p-values on all the items were all greater than the alpha-value of 0.05. With the forgoing, we therefore accept the null hypothesis for the items and reject the alternate hypothesis, which means there is no significant difference in the mean responses of the male and female lecturers on the governmental based challenges of agricultural education lecturers in the adoption of E-learning technologies in Universities in Abia state, Nigeria. The findings was in agreement with Leary and Berge (2006), the major challenges identified by researchers inhibiting the expansion of e-learning in agricultural education are very similar to the barriers that keep other fields from developing strong e-learning programs. The researchers identified that lack of both formalized reward system and technical support and lack of availability of technological tools affects adoption of e – learning technological tools. Others according to them also that have been found to impede effective implementation of e-learning, from the government side include inconsistent and unreliable Internet connection, and lack of consistent and affordable electricity, just to mention a few. The views and observations of the authors cited on the impact of entrepreneurship education and training on the enhancement of accounting skills for sustainable employment and national development helped to validate the findings of the study in Table 2.

## CONCLUSION

The study investigated the challenges facing e-learning utilization among agricultural education lecturers in public higher institutions in Abia state of Nigeria. It can be concluded that there is low utilization of e-learning technologies,

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caused by several challenges in the study area. The study found significant association between constraints faced by male and female lecturers in the challenges of e-learning adoption, lecturers' awareness of the use and knowledge of e-learning. The major constraints affecting respondents' adoption of e-learning include poor electricity and power supply, complexity of technology, insufficiency of financial resources for technology integration, and inadequate e-learning infrastructures in their various higher institutions.

### RECOMMENDATIONS

Based on the findings and conclusion of this study, the following recommendations were made;

1. Higher institutions should seek private sector collaboration as alternative means of funding ICT and e-learning educational initiatives, as its availability in schools is pertinent for effective teaching and learning.
2. E-learning facilities should be made more available, accessible and affordable to lecturers and students with less bureaucracy so they would enjoy a more viable, robust, reliable, efficient, effective and cost beneficial educational acquisition.
3. Lecturers that are used to traditional methods of teaching should be exposed to e-learning facilities through seminars and workshops to be organized periodically by the institution of learning.
4. Government should from time to time make funds available for the maintenance of electronic devices given to lecturers for e-learning teaching
5. Both the government and university administrators should provide enough security to e-learning centres in their institutions, to prevent looting of the computers by armed robbers.

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