

**INSTITUTIONAL LEVEL OF PREPAREDNESS AND SUSTAINABLE
E-INSTRUCTIONS OF AGRICULTURAL EDUCATION STUDENTS IN TERTIARY
INSTITUTIONS IN AKWA IBOM STATE**

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ABSTRACT

This study investigated the institutional level of preparedness for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State. Descriptive survey design was adopted for the study. The population comprised of 20 Agricultural Education lecturers, 12 from College of Education, Afaha Nsit under the degree programme and 10 from University of Uyo in Akwa Ibom State. The sample size of 10 Agricultural Education lecturers comprising of 5 lecturers each was drawn from each of the tertiary institution using purposive sampling technique. Data for the study were obtained using a questionnaire tagged “Institutional Level of Preparedness and Sustainable E-Instructions Questionnaire (ILPSEQ). ILPSEQ was validated by two experts from Faculty of Education, University of Uyo. The instrument yielded the reliability coefficient of .78 with Cronbach Alpha statistic. Data collected from the study was analyzed using mean to answer the research questions and independent t-test for testing of the null hypotheses. Findings of the study indicated that the level of preparedness in both College of Education and University in terms of facility development and manpower development for sustainable e-instruction of Agricultural Education students in Akwa Ibom State is low. On the basis of the findings the researcher recommends that Government at all levels should partner with non-governmental organizations (NGO) and philanthropists to invest in the development of ICT facilities in tertiary institutions in Akwa Ibom State. More so, governing bodies of tertiary institutions such as National University Council (NUC) and National Commission for Colleges of Education should organize conferences, workshops and symposium to train their staff, enlighten them and equip them with proficiencies for effective utilization of e-instructional approach.

Keywords: Agricultural Education, E-instruction, Level, Preparedness, Sustainable

INTRODUCTION

Agriculture is becoming the mainstay of various economies of the world as the pursuit for sustainable food security to mitigate hunger and reduce excessive dependency on importation of food for survival of populace takes utmost attention. Education of younger generation to prepare them for agriculture as means of livelihood and the current trend in the society becomes pertinent. Bajpai (2010) viewed education as preparation for life. It is a means of socializing human beings. Education involves the bringing up of a child in the community and training him to adjust to the changes in his environment and around the world. Education prepares humans for making full living in the society. It is an act of training and modification of human behaviour.

Agricultural Education is an educational programme for public school learners, out-of-school and post-secondary youth, and established farmers with the objectives of imparting knowledge, skills, and attitudes in agriculture to the learner at any level thereby preparing them for livelihood.

Institutional Level of Preparedness and Sustainable E-Instructions of Agricultural Education Students in Tertiary Institutions in Akwa Ibom State

According to Yakubu (2012) vocational agriculture has the potentials of equipping learners or youths with economic skills in livestock production, crop production, fisheries, pest control, distribution and marketing, protection, processing, packaging, record keeping, equipment and machinery and tools maintenance and agricultural enterprise management.

Agricultural Education is an important component of public school instruction. School –based agricultural education in Nigerian schools consist of three closely related components including: class/laboratory instruction, experiential learning/ education and leadership development. Organized instruction is the classroom and laboratory component of agricultural education. However, students enrolled in these courses have the unique opportunity to apply their core content concepts in an agriculturally related context.

Effective and sustainable agricultural education among other factors hinges on the instructional approach adopted to transfer knowledge and skills to learners. Olayiwola and Alimi (2015) asserted that the level of development in any society is usually determined by the quality and quantity of knowledge in the various spheres of human activity available to and acquired by the citizens. Agricultural Knowledge and skills are acquired and sustained through efficient information and communication system based on the technology level attained. With the current global pandemic out-break of Covid-19, educational system has been threatened as schools are locked-down and physical student-lecturer class contacts suspended. Electronic teaching and learning is gaining relevance and it represents the latest innovation in education delivery system.

Electronic instruction involves the presentation and delivery of the materials using the electronic media. Abidoeye (2010) viewed electronic teaching and learning as teaching and learning through electronic means such as via the web, internet or other multimedia materials like computer, projector, television, audio and audio visual cassette, radio disc e.t.c, the learner whether far or near have easy access to quality learning materials, have robust and unlimited interaction with instructional contents, facilitators and other learners and are given support and appropriate time, make reasonable and responsible contributions to the learning process. It offers flexibility in space and time teaching on-line involves use of the World Wide Web. Adeoti and Adebayo (2014) observed that e-instructional delivery is considered as an innovative approach for delivering electronically, well-designed, learner-centered and interactive learning environments to anyone, anyplace, anytime, most especially by utilizing the internet and digital technologies in line with instructional design principles. The benefit of e-learning ranges from harnessing network technologies and wireless devices that make teaching and learning to take place within and beyond the traditional classroom environment via electronic learning or e-learning; allowing students learn from instructors irrespective of their geographical location, thus overcoming the physical boundaries and in many instances, time constraints.

Offering e-instructions an instructor according to Azubiike and Offordile (2018) has to develop a course syllabus, develop goals and objective, select quality textbooks and journal article readings, create learning exercises and develop quiz and examinations. More so, the instructor should have assistance with all of the software required to deliver on-line courses and some sites on the web offer photo essays, documents, articles and recordings. To design and deliver on-line course instructors require a thorough knowledge of the main components of on-line teaching and learning. Khan cited in Azubiike and Offordile (2018) identifies the critical components of online education; content development multimedia component, internet tools, computers and storage devices service providers, authoring programs, servers, browsers and other applications. The availability of multimedia device, web-based training, synchronous internet communication and hybrids in the school system would foster sustainable e-teaching and e-learning communication process.

Implementation is essential for acceptance of electronic instruction in tertiary institution. Suhai (2011) reported that availability of necessary technological infrastructure is the basic requirement for the implementation of any innovative learning strategy in any educational institution. The access to an adequate network infrastructure which includes speed of internet, service and support, reliable and affordable internet connection, hardware and software are very essential in e-instruction environment. The provision of appropriate technological infrastructure, administrative, technical, and logistic support is crucial for the successful implementation. Alabi and Okemakinde (2010) discovered that lack of facilities and basic infrastructure has been the bane of effective educational planning in Nigeria. Also Oyovwe-Tinuoye and Adogbeji (2013) discovered that most ICT facilities in Nigeria are not sufficient to enhance quality education for learners and teachers and even where they exist they are not sophisticated enough to stand the test of time like the ones acquired in developed countries. Nwosu and Ugbomo (2012) and Onu and Ezhim (2019) stated that problems of quality and lack of resources are compounded by the new realities faced by higher education institutions' battle to cope with ever increasing students' population. Furthermore Adeoti and Adebayo (2014) in a study aimed at assessing the e-learning structure in term of physical infrastructure and human development at the Federal Polytechnic, Ado Ekiti observed that the states of development are at low realm therefore, call for a robust synergy that will be able to meet and cope with the test of the time. Staff development is crucial in the implementation of e-instruction for attainment of educational objectives of the institution.

It is usually said that no educational institution can rise above the quality of the instructor because they are the implementers of the curriculum of the programme. According to Garba and Alademerin (2014) ICT-literacy has become part of the basic labour requirement in knowledge driven societies; and a necessary foundation for higher education and professional development in an attempt to cope with the emerging challenge of ICT integration in education. Now, ICT literacy and competencies such problem-solving, critical reasoning; and the ability to use digital technology in accessing and utilising information for problem-solving in addition to knowledge of subject's content are basic requirement for sustainable instructional delivery. To effectively cope with this emerging challenge of how to communicate instructional contents to students in a more convenient way, lecturing need to be transformed and such transformation need to reflect on meaningful changes in infrastructure, facilities, curriculum and pedagogical practices. Lecturers must be proficient in the integration of ICT in the curricular content of all subject/disciplines and at all levels of learning; the utilization of ICT equipment in pedagogical practices and other educational practices in their respective institutions. This would improve teachers' efficacy, enhance teaching and learning while developing learners competence in the use of information technology (Garba and Alademerin, 2014).

However, there are many constraints in sustainable utilization of electronic instructional delivery approach in developing countries like Nigeria particularly now that there is a global pandemic that has crumble global economies putting the nation at more risk of shortage of qualified ICT teachers, and funding. There is the need to assess the level of institutional preparedness in terms of ICT facilities development and manpower development in tertiary institutions in Akwa Ibom State. The main objective of the study was to investigate the institutional level of preparedness for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State. Specifically, the study sought to:

1. determine the level of institutional facility development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State.
2. determine the level of institutional manpower development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State.

Institutional Level of Preparedness and Sustainable E-Instructions of Agricultural Education Students in Tertiary Institutions in Akwa Ibom State

Research Questions

The following questions will be raised to guide the study:

1. What is the level of institutional facility development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State?
2. What is the level of institutional manpower development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State?

Research Hypotheses

The following null hypotheses will be formulated to guide the study:

H_{o1}: there is no significant difference in the level of preparedness in terms of institutional facility development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State.

H_{o2}: there is no significant difference in the level of preparedness in terms of institutional manpower development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State

RESEARCH METHODS

The descriptive survey design was adopted for the study. The study was conducted in tertiary institutions offering Agricultural Education in Akwa Ibom State. The population comprised of 20 Agricultural Education lecturers (10 lecturers from College of Education, Afaha Nsit under the degree programme and 10 lecturers from University of Uyo) in tertiary institutions in Akwa Ibom State. The sample size of 10 Agricultural Education lecturers comprising of 5 lecturers each drawn from College of Education, Afaha Nsit and University of Uyo respectively using purposive sampling technique. This purposive sampling technique was adopted to help the researcher selected only the accessible lecturers from the study area. Data for the study were obtained using a questionnaire tagged “Institutional Level of Preparedness and Sustainable E-Instructions Questionnaire (ILPSEQ)” structured under four point rating scale of High Level (HL), Moderate Level (ML), Low Level (LL) and Very Low Level. ILPSEQ was validated by two experts from Faculty of Education, University of Uyo and the experts’ comments formed the basis for modifying some of the items. The instrument yielded the reliability coefficient of .78 with Cronbach Alpha statistic. Data collected from the study was analyzed using mean to answer the research questions and independent t-test for testing of the null hypotheses.

RESULTS

Research Question 1

What is the level of institutional facility development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State?

The summary of responses to the questionnaire items related to research question 1 is presented on Table 1a and 1b.

Table 1a: Mean Responses COE Agricultural Education lecturers on level of institutional facility development for sustainable e-instruction

s/n	Items on level of institutional facility development	\bar{X}	SD	Decision
1	ICT Centers	2.16	.86	Low Level
2	Adequate functional ICT gadgets for students and staff	2.00	0.72	Low Level
3	Steady Internet service provision	1.76	1.04	Low Level
4	Sufficient power plants	2.35	.85	Low Level
5	Educational site for Agricultural Education staff and students	2.44	.59	Low Level
6	Functional Agricultural Education programme for distant learners	1.05	.82	Very Low Level
7	Software for e-instructions in agriculture	1.55	.45	Low level
8	Well equipped ICT laboratories	2.51	.88	Moderate Level
Cluster Mean		1.98	.77	Low Level

N = 5

Table 1(a) indicates that the mean responses of 7 items are within the range of 1.05 – 2.44 which implies that there is a low level of development of items. Table 1(a) also indicates the cluster mean of 1.98 which implies that there is a low level of development of facilities for sustainable e-instruction of Agricultural Education students in the College of Education, Afaha Nsit.

Table 1b: Mean Responses University Agricultural Education lecturers on level of institutional facility development for sustainable e-instruction

s/n	Items on level of institutional facility development	\bar{X}	SD	Decision
1	ICT Centers	2.68	1.08	Moderate Level
2	Adequate functional ICT gadgets for students and staff	2.57	1.17	Moderate Level
3	Steady Internet service provision	2.64	1.00	Moderate Level
4	Sufficient power plants	2.65	.85	Moderate Level
5	Educational site for Agricultural Education staff and students	2.74	.59	Moderate Level
6	Functional Agricultural Education programme for distant learners	2.15	.82	Low Level
7	Software for e-instructions in agriculture	2.30	.65	Low level
8	Well equipped ICT laboratories	2.50	.84	Moderate Level
Cluster Mean		2.53	.89	Moderate Level

N = 5

Table 1(b) shows that, the mean responses of 6 items are within the range of 2.50 – 2.74 which implies that there is a moderate level of development of the items. Table 1(b) also reveals the cluster mean of 2.53 which implies that there is a moderate level of development of facilities for sustainable e-instruction of Agricultural Education students in University of Uyo, Uyo.

Research Question 2

What is the level of institutional manpower development for sustainable e-instruction of agricultural education students in tertiary institutions in Akwa Ibom State?

The summary of responses to the questionnaire items related to research question 2 is presented on Table 2a and 2b.

Institutional Level of Preparedness and Sustainable E-Instructions of Agricultural Education Students in Tertiary Institutions in Akwa Ibom State

Table 2a: Mean Responses on COE Agricultural Education lecturers on the level of institutional manpower development for sustainable e-instruction

s/n	Items on level of institutional manpower development	\bar{X}	SD	Decision
1	Effective Training on how to development of e-instructional package	2.04	1.08	Low Level
2	Consistent Training on the use of various electronic platforms for instructional delivery	2.11	0.77	Low Level
3	Provision of functional ICT gadgets for e-instructions	1.76	0.45	Low Level
4	Regular funding for data subscriptions	1.06	0.85	Very Low Level
Cluster Mean		1.74	0.79	Low Level

$N = 5$

Table 2(a) shows that, the mean responses of all the items are below 2.50 which implies that there is a low level of institutional staff development in terms of trainings on development of e-instructional package, use of electronic platforms, provision of ICT gadget and data provision. Table 2(b) also reveals the cluster mean of 1.74 which implies that there is a low level of manpower development for sustainable e-instruction of Agricultural Education students in college of Education, Afaha Nsit.

Table 2b: Mean Responses on University Agricultural Education lecturers on the level of institutional manpower development for sustainable e-instruction

s/n	Items on level of institutional facility development	\bar{X}	SD	Decision
1	Training on how to development of e-instructional package	2.26	0.88	Low Level
2	Training on the use of various electronic platforms for instructional delivery	2.61	0.72	Moderate Level
3	Provision of functional ICT gadgets for e-instructions	2.06	0.64	Low Level
4	Regular funding for data subscriptions	1.25	.80	Low Level
Cluster Mean		2.05	0.76	Low Level

$N = 5$

Table 2(b) shows that, the mean responses of 3of the items are below 2.50 which implies that there is a low level of institutional staff development in terms of trainings on development of e-instructional package, provision of ICT gadget and data provision. Table 2(b) also reveals the cluster mean of 2.05 which implies that there is a low level of manpower development for sustainable e-instruction of Agricultural Education students in University of Uyo, Uyo.

Research Hypothesis 1

There is no significant difference in the level of preparedness in terms of institutional facility development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State.

Summary of results of testing Null Hypothesis 1 is presented on Table 3.

Table 3: t-test Analysis of the Difference in the Mean responses on the level of preparedness in terms of institutional facility development for sustainable e-instruction of agricultural education students

Category	N	\bar{X}	SD	Df	t-cal	t-crit	Decision
COE LECTURERS	5	1.98	0.77	8	0.74	1.860	NS
UNIVERSITY LECTURERS	5	2.53	0.89				

NS = Not Significant at $p < 0.05$

Table 3 shows that the calculated t-value 0.74 is less than the critical t-value of 1.860 at .05 significance level and 8 degrees of freedom. Thus, null hypothesis 1 is retained. This implies, there is no significant difference in the level of preparedness in terms of institutional facility development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State.

Research Hypothesis 2

There is no significant difference in the level of preparedness in terms of institutional manpower development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State.

Summary of results of testing Null Hypothesis 2 is presented on Table 4.

Table 4: t-test Analysis of the Difference in the Mean responses on the level of preparedness in terms of institutional manpower development for sustainable e-instruction of agricultural education students

Category	N	\bar{X}	SD	Df	t-cal	t-crit	Decision
COE LECTURERS	5	1.74	0.74	8	0.44	1.860	NS
UNIVERSITY LECTURERS	5	2.05	0.76				

NS = Not Significant at $p < 0.05$

Table 4 indicates that the calculated t-value 0.44 is less than the critical t-value of 1.860 at .05 significance level and 8 degrees of freedom. Thus, null hypothesis 2 is retained. This implies, there is no significant difference in the level of preparedness in terms of institutional manpower development for sustainable e-instruction of agricultural education students in College of Education and Universities in Akwa Ibom State.

DISCUSSION OF THE FINDINGS

The findings of the study revealed that the level of preparedness in terms of facility development for sustainable e-instruction of Agricultural Education students is low in College of Education and moderate in University. Also, there is no significant difference in the mean response on the level of preparedness in terms of facility development between lecturers in College of Education and University for sustainable e-instruction of Agricultural Education students in the study area. The findings is in line with the observation of Oyovwe-Tinuoye and Adogbeji (2013) who discovered that most ICT facilities in Nigeria are not sufficient to enhance quality education for learners and teachers and even where they exist they are not sophisticated enough to stand the test of time like the ones acquired in developed countries. It also affirms the assertion of Onu and Ezhim (2019) stated that problems of quality and lack of resources are compounded by the new realities faced by higher education institutions’ battle to cope with ever increasing students’ population.

Institutional Level of Preparedness and Sustainable E-Instructions of Agricultural Education Students in Tertiary Institutions in Akwa Ibom State

No effective and sustainable education can take place with availability of adequate facilities for both the learners and the instructors. Therefore, tertiary institutions need to be properly equipped with internet facilities and service, reliable and affordable internet connection, hardware and software to ensure effective utilization of e-instruction in instructing Agricultural Education students.

Furthermore, findings of the study indicated that the level of preparedness in terms of manpower development for sustainable e-instruction of Agricultural Education students is low in both College of Education and University in the study area. Also, there is no significant difference in the mean response on the level of preparedness in terms of facility development for sustainable e-instruction of Agricultural Education students between lecturers in College of Education and University in the study area. The findings of the study is in consonant with the submissions of Garba and Alademmerin (2014) who noted that ICT-literacy has become part of the basic labour requirement in knowledge driven societies; and a necessary foundation for higher education and professional development in an attempt to cope with the emerging challenge of ICT integration in education. The finding implies that the workforce in both College of Education and University in the study area lack pertinent ICT skills for utilization of internet facilities which is crucial is instructional packaging and e-presentation of lessons in Agriculture. The manpower in tertiary institutions must be skilled enough to integrate and sustain e-instruction in schools.

CONCLUSIONS

On the basis of the findings of this study and discussion of same, the following conclusions were drawn: E-instruction is a novel instructional delivery approach where lesson contents are delivered through the internet, intranet/extranet, audio and or video tapes, satellite TV and CD-ROM. The development of Information Communication Technology (ICT) facilities and the human resource are prerequisite for sustainable e-instructional approach for realization of the goals and objectives of Agricultural Education in tertiary institutions in Akwa Ibom State. The findings of this paper reveal that adequate and functional ICT facilities are well developed and staff are poorly skilled in the utilization of e-instructional technologies for Agricultural Education instructional delivery. These tantamount to the fact that the level of preparedness in terms of facility development and staff development for sustainable e-instructional delivery of agricultural education lesson contents is low in both College of Education and the federal university in Akwa Ibom State.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- Government at all levels should partner with non-governmental organizations (NGO) and philanthropists to invest in the development of ICT facilities in tertiary institutions in Akwa Ibom State.
- Governing bodies of tertiary institutions such as National University Council (NUC) and National Commission for Colleges of Education should organize conferences, workshops and symposium to train their staff, enlighten them and equip them with proficiencies for effective utilization of e-instructional approach
- Administrators of tertiary institutions should set up relevant committees and boards to be in-charge of manage the available ICT facilities to ensure its safety and effective usage as well as monitoring and supervision to ensure implementation of e-instruction.
- School administrators should partner with Power Holding Company to foster good supply of power to facilitate electronic instructions in tertiary institutions in the area.

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