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Analysis of Electronic Learning Facilities Utilization among Agricultural Students of Michael Okpara University of Agriculture, Umudike Abia State, Nigeria

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Abstract

This study investigated utilization of electronic learning facilities among agricultural students in Michael Okpara University of Agriculture, Umudike. One hundred and twenty (120) students undergoing training in different agricultural courses in the university were randomly selected. Data were collected with a structured questionnaire and analyzed with descriptive statistics such as frequency distribution, means percentages and inferential statistics (Probit regression analysis). The result reveals that majority (84.17%) of the respondents were competent in the use of internets, had low access ($\bar{x}$= 1.89) to these electronic learning facilities and utilized them in on-line registration of courses ($\bar{x}$=3.70), learning/ studying ($\bar{x}$= 4.30), assignments ($\bar{x}$= 3.30), seminar presentation ($\bar{x}$=4.70), project writing ($\bar{x}$= 4.20) and sending e-mail messages ($\bar{x}$= 4.20). The probit estimates of the determinants of utilization of electronic leaning facilities among agricultural students of the university showed that coefficients of study habit, competency in computer application, aptitude and education were positive and significant at different levels of probability, while age was negative. Problems of poor network, power failure and inadequate electronic learning facilities in the university were their major problems in using electronic learning facilities in the university. The study therefore recommended adequate provision of electronic learning facilities in the university, training and cost reduction in the use of these facilities among students.

Keywords: Utilization, Electronic Learning, Facilities, Students

1. Introduction

Electronic learning popularly referred to as e-learning is increasingly becoming acceptable in tertiary institutions the world over. This is as a result of the opportunity provided by the institution and more students taking part in it (OECD, 2005). Electronic learning is basically the use of information and communication technologies (ICTs) to enhance and support learning teaching and research. With electronic learning, there is a shift from the traditional approach of teacher-directed didactic to modern methods where computer technology plays a significant role, thereby improving the quality, efficiency and effectiveness of teaching, learning, research and educational management (Eteng and Ntui, 2009). Electronic learning is also the learning facilitated and supported through the use of information and communication technology. It involves the use of: desktop and laptop computers, software, including assistive software, interactive whiteboards, digital cameras, mobile phones, radio, televisions, e-mail, e-library, you-tube, chat facilities and video conferencing, virtual learning environments (VLEs) and learning activity management systems (OECD, 2005). Eteng and Ntui (2009) in their study of Nigerian graduating students access to electronic learning technology in universities in South- south Nigeria, found that number of graduating students in Nigeria higher institutions who have access to electronic learning

technology was negligible. The Association of African Universities (AAU, 2000) further identified the ultimate objectives of integrating ICT into higher education in Africa as that of the transformation of universities into information power house, with the ability and capacity to educate students, and to generate new knowledge through systematic adaptation for the advancement of National development.

A survey conducted by (Akuchie, 2008) in five universities in North Central Zone of Nigeria, revealed that lecturers and students are not literate in the use of most aspects of information and communication technology (ICT). According to him, most electronic learning facilities are not available in the universities and where they exist are either not functional or inadequate and lecturers and students do not employ ICT facilities for learning and teaching. Electronic learning can help adults in developing their literacy and innumeracy skills, and build ICT skills for life and work. In other words, with electronic learning, direct attachment to classrooms is reduced and the population is decongested (CILIP, 2005).

As a result of difficult economic environment in Nigeria and deplorable nature of facilities in our universities, there is over crowding of few available facilities. There is also problem of overcrowding of students in classrooms (Madu and Pam 2011). It therefore becomes imperative to harness all avenues for ensuring the depository flow of information needed by students in the universities through electronic learning facilities. Studies on e-learning facilities by researchers were centred on the access and use of these facilities ignoring the determinants that influence their use. In view of the above statements, this study assesses the utilization of electronic learning facilities by agricultural students in Michael Okpara University of Agriculture Umudike, Abia State, Nigeria.

The specific objectives of the study were to;

i. Describe the socio-economic characteristics of agricultural students of Michael Okpara University of Agriculture, Umudike.

ii. Ascertain the level of accessibility of these electronic learning facilities to agricultural students of the university.

iii. Identify areas of utilization of electronic learning facilities by Agricultural students in their academic work.

iv. Identify the problems encountered by students in using these electronic learning facilities in the university.

Hypothesis of the Study

Ho_1: Factors such as age, aptitude, study habit, educational level, competency in computer application, type of course under study, power availability, facility maintenance and stipend do not impact utilization of electronic learning facilities by agricultural students of the university.

2. Materials and methods

2.1 Study Area Description

This study was conducted in Michael Okpara University of Agriculture, Umudike, originally the Federal University of Agriculture in Umudike, Abia State, Nigeria established as a specialized university by Federal Government of Nigeria Decree No 48 of November 1992. The University is located at the Latitude of $5^0 28.658^1$N and $5^0 29.176^1$N of the Equator and Longitude of $7^0 32.256^1$E to $7^0 32.803^1$E of the Greenwich meridian, with a land mass of about 6,465 km^2. The total population of the students in 2012/2013 academic session was 15,802 students (MOUAU Academic Planning Unit, 2014). Purposively, all the colleges offering agriculture in the university were chosen namely: College of Agricultural Economics, Rural Sociology and Extension (CAERSE), College of Animal Sciences and Animal Production (CASAP), College of Crop and Soil Sciences (CCSS), College of Agricultural and Science Education (CASE) because they offer agricultural related courses. Two Departments were randomly selected from the list of Departments that make up each of the selected colleges to make a total of eight Departments. Fifteen students were randomly selected from the list of students that make up each of the selected Departments giving a sample size of 120 respondents (students).

Objectives i, ii, iii and iv were achieved with the use of descriptive statistics such as frequency, distribution, mean, percentages and tables, while the hypothesis was tested with probit regression analysis. Achieving the accessibility of electronic learning facilities in the university by agricultural students, a 3-point Likert type scale was used of; not accessed=1, fairly accessed=2 and highly accessed =3. A mid-point was obtained thus; 3+2+1=6 divided by 3=2.0. Based on the mid-score decision rule; any score greater than or equal to 2.0 implied access of electronic learning facilities and mid-scores less than 2.0 denotes non- accessibility.

In ascertaining the areas of utilization of these electronic learning facilities by the students, was used consisting9- item statements rated on a 5-point Likert type scale of Always (5), Often (4), Occasionally (3), Seldom (2), Never (1). A mid-point was obtainedthus 5+4+3+2+1=15 divided by 5=3.0. Based on the mid score decision rule any mean score

greater than or equal to 3.0 implied use and mean score less than 3.0 denotes poor utilization of electronic learning facilities in those areas.

2.2 Model Specification

The probit regression model is implicitly stated as follows

$Y_i^* = B^1X_i+E$

$Y_i^* = 0$ if $Y_i^* = 0$

$Y_i = 1$ if $Y_i^* = 0$

Where;

Yi* = an underlying latent variable that indexes utilization of e-learning facilities among students.

Yi = dummy variable indexing technology transfer (use of e-learning facilities =1, non use of e-learning facilities =0)

B^1 = a vector of estimated parameter

E = the error term

Xi = individual farmers variables considered in the study

Y = use of e-learning facilities (Yes =1, No=0)

X_1 = age (years)

X_2 = aptitude (Yes=1, otherwise=0)

X_3 = study habit (Yes=1, otherwise=0)

X_4 = educational level (SSCE, OND, NCE, HND)

X_5 = competency of computer application (Yes=1, otherwise=0)

X_6 = type of course under study (Yes=1, otherwise=0)

X_7 = power availability (Yes=1, otherwise= 0)

X_8 = facility maintenance (Yes=1, otherwise=0)

X_9= stipend(₦)

e_i = error term

3. Results and discussion

3.1 Socio-economic Characteristics of Students

The distribution of respondents according socio-economic characteristics of students is shown in Table 1. The Table indicates that high proportion (60%) of the students were females while 40% were males. This result implies that most of the respondents in the agricultural colleges of the university were females. The students also had mean ages of 19.30 years, while majorities (98.3%) were single. The level of education of the respondents reveals that majority (94.1%) of the respondents acquired secondary education. The mean monthly stipend of the students was ₦8, 534.00(65.64 USD), which implied that they were sponsored by their parents/ guardians in their educational pursuit. The table further revealed that majority (84.17%) were competent in using internets, personal computers (68.33%) and public address system (51.67%). Others projectors, scanners, interactive white board and e-library had low access. This result corroborates the findings of Akuchie (2008) where he found out that students in Nigerian universities were not literate and competent in the use of most aspects of electronic learning facilities in the North Central Zone of Nigeria.

3.2 Level of Access of Electronic Learning Facilities among Students

The distribution of respondents according to their level of access to electronic learning facilities in the university is shown in table 2. The table reveals that students accessed MOUAU Magazine, with mean score of 2.90, MOUAU FM Radio ($\bar{x}$=2.60), Projector ($\bar{x}$=2.20) and Interactive White Board ($\bar{x}$=2.19). However, the students had low access to other facilities as Public address system ($\bar{x}$=1.70), On-line and off-line data bases ($\bar{x}$=1.10), Scanner ($\bar{x}$=1.30). The total mean access of these electronic learning facilities was 1.89 indicating that they had low access. Low access to electronic learning facilities among students may be due to high cost of laptops and charges paid per hour during browsing for academic materials. This result support the findings of Eteng and Ntui (2009) and Bassey (2007) as they found out that graduating students access to electronic learning technologies in universities in South-south of Nigeria was negligible.

3.3 Areas of Utilization of Electronic Learning Facilities among Agricultural Students of Michael Okpara University of Agriculture, Umudike

The distribution of respondents according to areas of utilization of electronic learning facilities is shown in Table 3. The result reveals that the students utilized, seminar presentation,($\bar{x}$=4.70), Learning/ studying ($\bar{x}$=4.30),project writing and messages ($\bar{x}$=4.20) and receiving messages ($\bar{x}$=4.10). respectively for their academic activities. The Table also indicate that students did not use them for reading newspapers, magazines, newsletters ($\bar{x}$=2.90) and searching for on-line textbook and journals ($\bar{x}$=2.50). The result implied that there was high utilization ($\bar{x}$=3.8) of these electronic learning facilitates. The low use of Internet and e-library facilities may be due to high charges and network problem experienced sometimes in the university.

Table 1. Distribution of Socio-economic Characteristics of Michael Okpara University of Agriculture Students in Abia State, Nigeria (n= 120)

Variables	Frequency	Percentage	Mean
Gender			
Male	48	40.00	
Female	72	60.00	
Age (years)			
20 – 25	93	77.50	
26 – 30	27	25.50	19.30
Marital Status			
Single	118	98.30	
Married	2	1.70	
Level of Education			
WAEC/SSCE	113	91.40	
OND	6	5.00	
HND	1	0.90	
Monthly Stipend (₦)			
5,000 – 10,000	74	61.60	
11,000 – 15, 000	28	23.30	₦8,534.00 (65.64 USD)
16, 000 – 20, 000	9	7.50	
21, 000 – 30, 000	9	7.50	
Computer Competency			
Projector	20	16.67	
Personal Computer	82	68.33	
Online and off-line data bases	17	14.17	
Internets	101	84.17	
Printer	53	44.17	
Scanner	8	6.67	
Public Address System	62	51.67	
Interactive White Board	7	5.83	
E – library	4	3.33	

Source: *Field Survey, 2014*

Table 2. Distribution of Respondents Access to Electronic learning Facilities of the University

Types of Electronic Learning Faculties	Highly accessed	Fairly used	Not used	Total	Mean Score
Projector	43(129)	67(134)	10(10)	273	2.20*
Personal Computer	33(99)	34(64)	53(53)	220	1.80
On-Line and Off line data bases	9(273)	9(18)	92(92)	137	1.10
Internet	44(132)	25(50)	51(51)	233	1.90
Printer	30(90)	18(36)	72(72)	198	1.60
Scanner	18(54)	11(22)	90(90)	166	1.30
Public Address System	25(75)	43(86)	52(52)	213	1.70
Interactive White Board	76(228)	14(28)	7(7)	263	2.19*
E-Library	25(75)	17(34)	77(77)	186	1.50
MOUAU FM Radio Station	88(264)	20(40)	12(12)	316	2.60*
MOUAU Magazine	83(294)	22(44)	15(15)	353	2.90*
Grand Mean($\bar{x}$)					**20.79**
Total Mean ($\bar{x}$)					**1.89**

*Decision Rule: 2.0 and above is accessed, less than 2.0 not accessed
Values in parenthesis are frequencies multiplied by nominal likert values.

Table 3. Distribution of Respondents According to their Areas of Utilization of Electronic Learning Facilities in the University

Areas of E-Learning Facilities Utilization	Always	Often	Occasionally	Seldom	Never	Total	Mean
On-line Registration	49(245)	13(52)	42(126)	7(14)	9(9)	446	3.70*
Learning/ Studying	79(395)	14(56)	17(51)	5(10)	5(5)	517	4.30*
Assignments	38(190)	13(52)	41(123)	10(201)	17(17)	402	3.30*
Seminar Presentation	96(480)	8(32)	17(51)	1(2)	0(0)	565	4.70*
Project Writing	85(425)	7(28)	12(36)	9(18)	7(7)	514	4.20*
Searching for On-Line Textbook and Journals	21(105)	19(76)	21(63)	11(22)	38(38)	304	2.50
Reading, Newspapers, Magazines, Newsletters	25(125)	21(84)	31(93)	10(20)	33(33)	355	2.90
Sending E-mail Messages	80(400)	9(27)	12(36)	18(36)	2(2)	501	4.20*
Receiving E-mail Messages	77(385)	5(20)	14(42)	19(38)	5(5)	490	4.10*
Grand Mean($\bar{x}$)							31.4
Total Mean($\bar{x}$)							3.8

*Decision Rule: 3.0 and above is utilization, less than = 3.0 poor utilization
Values in parenthesis are frequencies multiplied by nominal Likert values.

Table 4. Probit Regression Estimates of the Determinants of Electronic Learning Facilities among Agricultural Students in Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

Variables	Coefficient	Standard error	T-value
Constant	29.0700	4.9501	5.87***
Age	-O.4422	0.1932	-2.29**
Aptitude	4.0248	2.0961	1.92*
Study habit	9.9292	3.0233	3.28***
Education	0.0055	0.0032	1.72*
Competency	2.4367	0.9605	2.54**
Type of course	-1.9035	2.4802	-0.77
Power availability	2.2068	2.4664	-0.89
Facility maintenance	3.6107	2.2999	-1.57
Chi^2 (κ^2)		26.92***	
Pseudo R^2		0.731	
Log livelihood		-349.782	

*, ** and *** is significant at 10%, 5% and 1% level of probability.

Table 5. Distribution of Respondents According to the Problems Encountered in using electronic Learning Facilities in the University

Category of problems	Frequency	Percentage*
Inadequate electronic learning facilities in the university	107	89.1
Poor stipend	78	65
Preference of usage	99	82.5
Power failure	112	93.3
Network problems	113	94.1
Non-competence in computer application and usage	83	69.1
Overcrowding of students on available facilities in the university	57	47.5

*Multiple Responses Recorded.

3.4 Determination of Factors Influencing Utilization of Electronic Learning among Students of Michael Okpara University of Agriculture, Umudike

The results in Table 4 show the Probit Regression estimates of the determinants of utilization in electronic learning facilities among agricultural students in Michael Okpara University of Agriculture, Umudike.

The Chi^2 level of 26.92, was highly significant at 1% level of probability indicating goodness of fit of the probit regression line. The pseudo R^2 of 0.731 indicate 73.10% variability in probability in the use of e-learning facilities in the study area.

The coefficient for age was negative and significant at 5% level. This implies that any increase in age will lead to a corresponding decrease in probability in the use of e-learning facilities in the study area. This is expected because the younger respondents seem to be more innovative and willing to take risk in electronic learning facilities.

The coefficient for education was positive and significant at 10% level. This implies that only increase in level of education will lead to a corresponding increase in the probability use of e-learning facilities in the study area. Increase in education will enable the students to be able to use and access information on e-learning facilities better than their counterparts who had little education.

The coefficient for aptitude was positive and significant at 10% level. This implies that any increase in aptitude will increase the probability in the use of e-learning facilities in the study area. Natural ability to acquire knowledge or skill is expected to increase the level of use of e-learning facilities in the study area. Sam (2011) asserted that power availability in Nigeria is unstable thereby causing access to electronic learning facilities ineffective in most Nigerian universities.

The coefficient for study habit was positive and highly significant at 1%level. This implies that any increase in study habit will lead to a corresponding increase in probability in the use of e-learning facilities in the study area. This is expected because increase in efficiency as a result of study habit will increase proficiency in electronic learning application.

The coefficient for competency was positively signed and significant at 5% level of probability. This implies that any increase in the level of competence will lead to increase in the probability of use of e-learning facilities among the students in the study area. This result confirms with a priori expectation because the more the students were competent in using these facilities, the probability of accessing information for their research work and assignments will be effective.

3.5 Problems Encountered by Students in using Electronic Learning Facilities in the University

The problems encountered by students in utilizing electronic learning facilities in the university are shown in Table 5. The Table shows that the respondents indicated that network problems (94.1%), power failure (93.3%), inadequate electronic learning facilities (89.1%) and preference of usage by students (82.5%) were their major problems in using electronic learning facilities in the university. The Table also shows that 69.9% identified non-competence in computer application and usage and also Poor stipend (65%).Sam (2011) asserts that power accessibility in Nigeria is erotic thus making access to electronic learning facilities ineffective in most Nigerian universities.

4. Conclusion and recommendations

The results from the study revealed that high percentage of the students had low access to electronic learning facilities in the university. They utilized these electronic learning facilities in their academic work. The study revealed that age, aptitude, study habit, education and competency were determinants of students' e- learning utilization in the university. Non-utilization of these facilities was attributed to network problems, power failure and preference of usage in any e-learning facility.

The study therefore recommends that;

i. Government should provide adequate electronic learning facilities in the universities to enable students have access to these facilities for enhanced learning. This will be achieved through Tertiary Education Trust Fund (TETFUND) intervention.

ii. Students of the university should undergo training in some of the electronic learning applications such as interactive white board, projector and other computer application to enhance their use of these facilities.

iii. Steady provision of power is needed to contain the problems of non- accessibility and network coverage in the university.

iv. Access to internet usage should be free or subsidized to encourage the students increase their access and use of these facilities.

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تحلیل کاربرد تسهیلات یادگیری الکترونیک دربین دانشجویان کشاورزی دانشگاه کشاورزی میخاییل اکپارا، ایالت یومودیکا آبیا، نیجریه

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چکیده

هدف از این مطالعه ارزیابی کاربرد تسهیلات یادگیری الکترونیک دربین دانشجویان کشاورزی دانشگاه کشاورزی میخاییل اکپارا، ایالت یومودیکا آبیا، نیجریه بود. ۱۲۰ نفر از دانشجویان رشته‌های مختلف کشاورزی به طور تصادفی به عنوان نمونه آماری انتخاب شدند. داده‌ها از طریق یک پرسشنامه ساختاریافته جمع‌آوری شد. از آمار توصیفی نظیر فراوانی، میانگین و درصد برای توصیف داده‌ها و از تحلیل رگرسیون پروبیت برای تحلیل داده‌ها بهره گرفته شد. نتایج نشان داد که ۸۴/۱۷٪ از پاسخگویان صلاحیت لازم را جهت استفاده از اینترنت دارا بوده اما دسترسی پایینی به تسهیلات یادگیری الکترونیکی دارند(میانگین= ۱/۸۹). به طور عمده پاسخگویان تسهیلات مذکور را در زمینه‌هایی نظیر ثبت نام آنلاین (میانگین= ۳/۷۰)، مطالعه و یادگیری (میانگین= ۴/۳۰)، نوشتن تکالیف (میانگین= ۳/۳۰)، ارائه سمینار(میانگین= ۴/۷۰)، نوشتن پروژه (میانگین= ۴/۲۰) و ارسال نامه الکترونیک (میانگین= ۴/۲۰) استفاده می‌کردند. تخمین‌های مدل پروبیت نشان دادکه صلاحیت لازم در کاربرد کامپیوتر، نگرش و تحصیلات نقش مثبت و معنی‌دار و سن دارای نقش منفی و معنی‌دار بر کاربرد تسهیلات یادگیری الکترونیک داشت. مشکلاتی نظیر ضعف شبکه، قطعی برق و تسهیلات ناکافی یادگیری الکترونیکی در دانشگاه از مهمترین موارد بودند. بنابراین فراهم نمودن تسهیلات لازم برای یادگیری الکترونیکی در دانشگاه، برگزاری دوره‌های آموزشی و کاهش هزینه استفاده پیشنهاد می‌شود.

کلمات کلیدی: کاربرد، یادگیری الکترونیکی، تسهیلات، دانشجویان