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INTEGRATING VEGETABLE PRODUCTION INTO TRADE/ENTREPRENEURSHIP SUBJECTS FOR IMPROVING TECHNICAL VOCATIONAL EDUCATION AND TRAINING (TVET) QUALITY AND INSTRUCTIONAL DELIVERY.

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Abstract

The study focused on integrating vegetable production into entrepreneurship subjects for improving TVET quality and instructional delivery in Nigeria. This is with a view to making entrepreneurship subjects comprehensive, effective and increase job opportunities for youths. Five research questions and hypotheses guided the study. The study adopted a survey research design. The population was 91, comprising of 21 Agricultural Education Lecturers and 70 Agricultural Extension Agents in Abia State. The instrument for data collection was a 42 – item researcher developed questionnaire structured on a 4-point scale. The instrument was face validated by three experts and tested for reliability using Cronbach Alpha method. A coefficient of 0.81 was obtained. The 91 copies of the questionnaire were administered on the respondents and all of them were retrieved. The data collected were analyzed using mean and standard deviation to answer the research questions while t-test was used to test the null hypotheses at 0.05level of significance. It was found out that 8 objectives, 9 contents, 8 methods of instruction, 14 instructional resources and 6 evaluation methods were necessary for integrating vegetable production into entrepreneurship education subjects in Nigeria. It was recommended amongst other things that, vegetable production should be included into the existing entrepreneurship education subjects approved by the Federal Government of Nigeria for senior secondary schools. If the proposed vegetable production is integrated, it could increase subject options, reduce social ills and improve TVET quality and instructional delivery.

***Keywords**: Integrating, Vegetable, Production, Entrepreneurship, Subjects*

Introduction

Many experts have explained the concept of entrepreneurship. For instance, Nwana (2012) conceived entrepreneurship as the process by which individuals combine human and material resources to provide goods and services desired by man. Orie and Ibekwe (2014) also explained entrepreneurship as the process through which entrepreneurs create and develop enterprises. A person who manages a business and undertakes risks for the sake of profit is an entrepreneur (Dabson & Malkin, 2005). For Nwana (2012), an entrepreneur is a self-employed person who is in possession of goods and services that the community has need of and capable of making them available to the community. Entrepreneurship therefore, has to do with making a living by working for oneself instead of being employed by others. In this

study, an entrepreneurship subject is a body of knowledge that teaches how to plan, establish and run an enterprise. Entrepreneurship subjects are devoted to productivity and promotion of entrepreneurs (Nwana, 2012). They provide students with knowledge, skills, motivation and strategies to encourage entrepreneurial success (Obioma, 2012).

Because of their importance, the Federal Government of Nigeria introduced the teaching and learning of entrepreneurship subjects into her education system in senior secondary schools (Federal Republic of Nigeria (FRN), 2013). This is a way of promoting entrepreneurial spirit among her citizenry early in life (FRN, 2012). The entrepreneurship subjects are taught to impress the culture of entrepreneurship in students as well as teach them a variety of characteristics and skills that could help them to develop as entrepreneurs later in life, especially those of them who are not proceeding to tertiary level (FRN), 2013).

The National Policy on Education approved the teaching of 34 Trade/Entrepreneurial subjects in senior secondary schools in Nigeria. They include animal husbandry and fishery which are agricultural occupations (FRN,2013) .Government took this decision to prepare those who may end their education at the senior secondary level to acquire basic entrepreneurship skills in any of the occupational areas for entry into related businesses later in life and to change the mindset of her youths from that of looking for non-existing employment to that of developing a positive attitude to employment and wealth creation(FRN,2012).This has become necessary because of high level of unemployment which seems to worsen day-by-day.

Entrepreneurship education seeks to achieve the goals of Technical Vocational Education and Training (TVET). According to FRN (2013), TVET explains those aspects of education process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, and knowledge relating to various sectors of economic and social life. TVET goals include providing the technical knowledge and vocational skills necessary for agricultural and commercial occupations and skills for self-reliance (FGN, 2013), which entrepreneurship education does. Also, TVET and entrepreneurship education alleviate poverty, promote peace, improve the quality of life and help achieve sustainable development (Ogbuagu, 2017).

Therefore, the teaching of the entrepreneurship subjects is bound to improve TVET quality and increase the supply of skilled manpower in these occupations. However, out of the 34 entrepreneurship subjects, only animal husbandry and fishery are agricultural occupations and they involve animal production. There is none in crop production. Crop production, no doubt complements animal production by providing food, income, agricultural raw materials and foreign exchange the nation and individuals so much need for economic prosperity. Therefore, the exclusion of crop related subject(s) in the trade/entrepreneurship subjects list is a serious oversight that should be corrected. It is

therefore necessary to propose the teaching of crop production, particularly vegetable production as entrepreneurship subject in senior secondary schools.

Vegetable is any herbaceous plant that is eaten raw or cooked as part of the main dish in a salad, but not as dessert. Vegetables are tender edible shoots, leaves, fruits or roots of plants that are eaten raw or cooked (Iroegbu, 2016). The edible part may be a leaf as in the case of amaranthus, fruit as in Okro and tomatoes or whole shoot as in elephant grass (Ibekwe, 2010). Vegetables are harvested when the edible portion is very high in moisture content (Badmus andYekini, 2011). Vegetables add flavour to food, and provide vitamins and minerals, (Iroegbu, 2011). Most vegetables are low in starch content and serve as roughage which enhances digestion and prevent constipation (Food and Agricultural Organization, 2013). Therefore, vegetable production is a veritable tool for poverty alleviation and income generation.

Production is the creation of wealth for the purpose of satisfying wants. It is a business venture involving efficient conversion of input resources into useful products using factors of production such as land, labour, capital and entrepreneur (Orie &

Ibekwe,2014). In the context of this study, vegetable production is the growing of vegetable crops in commercial quantities, above domestic requirements through efficient combination of factors of production.

Vegetable production business, generally, is relatively easy and requires little initial capital to set up. Therefore, interested senior secondary school leavers can embark on the business to earn a living. Senior secondary school students are students who have successfully completed Basic Education and passed the basic education certificate examination (BECE) and are currently undertaking post-basic education programme (FRN,2013). On graduation, some of them may not proceed to tertiary level. For this reason, those interested in vegetable crop production can fall back on the knowledge and skills acquired in senior secondary schools to start-up and run vegetable production enterprises. In light of these, it has therefore, become necessary to integrate vegetable production into the entrepreneurship subjects list.

Integration entails the introduction of something into an already existing one. According to Hornby (2010), it is the combination of two or more things so that they work together effectively. In this study, integration is the addition of vegetable production into the already existing list of 34 trade/entrepreneurship subjects. This move is bound to make the subject list comprehensive, effective and increase employment opportunities for youths.

The proposed vegetable production as a subject should have some objectives. According to Nkpa (2012) an objective is what a subject intends to achieve at the end of instructional delivery. It specifies what should be done with action words such as identify, acquire, prepare and so on. Therefore, vegetable production instructional delivery should have the following objectives at the end of the lesson; to provide the learner with knowledge and skills necessary to run a vegetable production enterprise, inculcate the entrepreneurial spirits among students on vegetable production and to familiarize the learner with the competence and tools for the production of vegetable

(Asogwa, Isiwu & Ibe, 2017). The subject must have contents as well. Content is a breakdown of topic into small separate units or lessons (Agbulu, 2004). In vegetable production, it includes but not limited to definition, importance and examples of vegetable production. Others are methods of propagation, crop pest and diseases, amongst others (Ibekwe, 2010; Iroegbu, 2016).

Teachers employ various methods and resources to enhance instructional delivery. The methods include lecture, discussion, project, field trips and demonstration. (Nkpa, 2001; Ekoja and Ekoja, 2012), while the instructional resources are the school farm, farm tools and machines, fertilizer, lime, projector, pictures, chalkboard and so on (Olaitan and Mama, 2001). After instructional delivery, the teacher evaluates his students to ensure that the instructional objectives are achieved and has yielded the desired result. The teacher can do this through oral questioning, written questions, assignment or observation (Agbulu, 2004). The proposed vegetable production subject should follow the above pattern.

The entrepreneurship subjects are taught in Abia State school system. Each senior secondary school student is expected to select one out of the 34 of the subjects. However, the inclusion of only animal husbandry and fishery as the only options in agriculture limits students to the study of animal husbandry and fishery and denies them opportunity to learn other income generating agricultural occupations such as vegetable production. Consequently, some of them select other nonagricultural options such as auto mechanic, marketing and cosmetology. Also, our quest for food security and employment creation from crop production suffer. The integration of vegetable production into the entrepreneurship subject list is bound to reverse the trend and students will have more agricultural options in the entrepreneurship subjects to learn.

Purpose of the study

The main purpose of the study was to make a proposal for the integration of vegetable production into entrepreneurship education subjects for improving TVET quality and instructional delivery in Nigeria. Specifically, this study sought to:

1. Identify the objectives of vegetable production for integration into the entrepreneurship subjects,
2. Determine appropriate content of vegetable production for teaching students,
3. Determine methods of teaching vegetable production,
4. Identify instructional resources for teaching vegetable production, and
5. Find out evaluation methods for assessing students' performance in vegetable production.

Research questions

1. What should be the objectives of vegetable production for integration into entrepreneurship subjects?
2. What should be the appropriate content of vegetable production for teaching students?
3. What should be the methods of teaching vegetable production?
4. What should be instructional resources for teaching vegetable production, and
5. What should be the evaluation methods for assessing students' achievement in vegetable production?

Hypotheses

There is no significant difference in the mean ratings of agricultural education lecturers and agricultural extension agents in Abia State on:

1. What should be the objectives of vegetable production for integration into entrepreneurship subject,
2. What should be the appropriate content of vegetable production for teaching students,
3. What should be the methods of teaching vegetable production,
4. What should be instructional resources for teaching vegetable production, and
5. What should be the evaluation methods for assessing students' achievement in vegetable production.

Methodology

The study was carried out in Ikwuano and Umuahia North Local Government Areas of Abia State. The Local Governments are situated in South East geopolitical zone of Nigeria. There are many senior secondary schools in the area, but they teach only animal husbandry and fishery as the only agricultural options of the entrepreneurship subjects. There is no crop production in the list. This informed the choice of the area for the study. The study adopted descriptive survey research design. In a survey research, a population or a sample of it is asked a series of questions about their opinions on a subject using questionnaire (Uzoagulu, 2011). The design was considered appropriate for the study since it sought the views of respondents on the inclusion of vegetable production into the entrepreneurship subjects using questionnaire. The population of the study was 91. This is made up of 21 Agricultural Education lecturers from the Department of Agricultural/Home Science, Michael Okpara University of Agricultural Umudike and Abia State University, Umuahia Campus as well as 70 Agricultural Extension Agents from the area of study. The entire population of 91 was involved in the study since the population was small. The two groups of respondents are experts in vegetable production whose opinions are necessary in determining the content of vegetable production subject.

The researcher made use of a– 41 item researcher made questionnaire entitled: Questionnaire for Integrating Vegetable Production into Entrepreneurship Subject (QIVPES) for data collection. The questionnaire consisted of sections A and B. Section A was used to obtain information on the personal data of the respondents. Part B consisted of questionnaire items. The response scale for each questionnaire item had a 4-point response scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (DA) with a corresponding value of 4, 3, 2 and 1 respectively. The questionnaire

Result

was face validated by three experts, one from Department of Crop Science/Agronomy and two from Department of Agricultural and Home Science Education, all in Michael Okpara University of Agriculture, Umudike. The corrections and opinions of experts were incorporated into the final version of the questionnaire developed. The instrument was tested for reliability using Cronbach Alpha coefficient technique. A coefficient of 0.88 was obtained as a reliability status.

Copies of the questionnaire were administered to the 91 respondents using researcher trained assistants who also retrieved them on

completion. The data collected were analyzed using mean and standard deviation to answer the research questions while ttest statistic was used to test the null hypotheses at

0.05 level of probability. Any item with mean value of 2.50 and above was regarded as agree and those below was disagreed. In testing hypotheses, the hypothesis of no significant difference was upheld for item with t-calculated value less than t-table value and rejected if otherwise.

Since trade/entrepreneurship is a national policy issue and vegetable production universally the same, the results of this study is therefore generalized.

Table 1: Mean ratings and t-test analysis of lecturers and agricultural extension agents on the objectives of vegetable production for integration into entrepreneurship subject list (N=91).

S/n	Objectives of vegetable production: include to:	X_1	X_2	GX	SD	t-cal	t-tab	Remark
1	Provide students with the basic knowledge, skills and attitude to run vegetable production enterprise.	3.05	3.90	3.48	0.27	3.90	1.96	A, NS
2	Change the mindset of youths from looking for job to that of developing attitude for selfemployment in vegetable production.	3.94	3.82	3.88	0.31	0.41	1.96	A, NS
3	Equip students with skills to manage human and material resources in vegetable production enterprise.	2.68	3.90	3.29	0.51	0.56	1.96	A, NS
4	Create awareness on job opportunities in vegetable production.	3.37	3.52	3.45	0.50	1.23	1.96	A, NS
5	Familiarize students with the tools, materials and machines used in vegetable production.	3.74	3.90	3.82	3.37	1.47	1.96	A, NS
6	Equip students with competence to practice vegetable production activities demonstrated by teaching and using the needed materials, tools and machines.	3.77	3.01	3.39	0.65	0.64	1.96	A, NS

Key: A=Agreed, NS = Not significant

Data presented in Table 1 indicated that all the six items should be the objectives of vegetable items had mean values ranged from 3.01 to 3.91 production that should be integrated into the which were above the cut-off point of 2.50. This entrepreneurship subjects list. The table also means that the respondents agreed that all the six revealed that the standard deviation of the responses

Table 2: Mean ratings and t-test analysis of lecturers and agricultural extension agents on the content of vegetable production for integration into the entrepreneurship subjects (N91).

S/n	Content of vegetable production	X_1	X_2	$\overline{GX}$	SD	t-cal	t-tab	Remark
1.	Meaning and importance of vegetable production.	3.50	0.44	0.75	0.06	1.11	1.96	A, NS
2.	Types and examples of vegetable crops.	3.05	3.89	0.91	0.57	1.28	1.96	A,NS
3.	Vegetable production system/scales.	3.17	3.51	0.89	0.75	1.77	1.96	A, NS
4.	Propagation of vegetable crops. 3.07	3.17	0.80	0.87	1.02	1.96	A, NS	
5.	Common pest and diseases of vegetable 3.25	3.61	0.80	0.79	0.13	1.96	A, NS	crops.
6.	Storage of vegetable produce. 2.92	3.35	0.85	1.44	0.63	1.96	A, NS	
7.	Preservation of vegetable crops. 3.12	3.72	0.76	0.56	1.02	1.96	A, NS	
8.	Processing of vegetable produce. 3.37	3.34	0.84	0.82	0.31	1.96	A,NS	
9.	Marketing of vegetable and vegetable products.						1.96	A, NS

Key: A = Agreed, NS = Not significant

of the respondents on the six item ranged from 0.41 to 0.90 which means that the respondents were not for from the mean and from the opinions of one another in their responses. The table also showed that all the skill items except number one had their tcalculated values less than t-table value of 1.96. Therefore, there was no significant difference in the mean ratings of the responses of lecturers and agricultural extension on objectives of vegetable production for integrating into entrepreneurship subjects for the five items. Therefore, the null hypothesis of no significant difference for the two groups of respondents was upheld for the five items. However, item 1 had a t-calculated value greater than the table value of 1.96.Therefore the null hypothesis of no significance difference for the two groups of respondents was rejected.

Data presented in Table 2 revealed that the 9 items had mean values ranged from 2.09 to 3.90 which were above the cut-off point 2.50. This implies that the respondents agreed that they should be the content of the vegetable production to be integrated into the entrepreneurship subjects. The data also showed the standard deviation of the responses of the respondents on the 8 item ranged from 0.62 to 0.82 which means that the respondents were not far from the mean and from the opinions of one another in their response. The table also revealed that the items had their t-calculated value less than t-table value of 1.96. Therefore, there was no significant difference in the mean ratings of the responses of lecturers and agricultural extension agents on contents of vegetable production for integration into entrepreneurship subjects. Therefore, the null hypotheses of no significant difference for lecturers and agricultural extension agents were upheld.

Table 4: Mean ratings and t-test analysis of lecturers and agricultural extension agents on instructional resources for teaching vegetable production (N91)

S/N	Objectives of vegetable production. Include how to use :				$\bar{X}_1$	$\bar{X}_2$	$\bar{GX}$	SD	t-cal	t-tab	Remarks
S/n	Methods of teaching vegetable production				$\bar{X}_1$	$\bar{X}_2$	$\bar{GX}$	SD	t-cal	t-tab	Remarks
1.	School farm.	3.63	3.60	0.74	3.51	3.51	3.51	0.23	0.51	1.96	A , NS
2	Farm tools and machines.				3.51	3.39	0.69	0.05	1.96	A, NS	
2.	Lecture method.	3.20	3.58	3.39	2.40	1.92	2.16	0.72	0.72	1.96	A, NS
4	Lime: to reduced/neutralized sort acidity.				3.50	3.50	3.50	0.59	0.41	1.96	A, NS
3.	Demonstration.	3.57	3.50	3.54	3.76	3.34	3.55	0.43	0.55	1.96	A, NS
5	Soil testing kits.				0.59	0.13	1.96	A, NS			
6	Storage boxes/containers for-nursery.				3.05	3.76	3.41	0.56	0.93	1.96	A, NS
4.	Field trip.	3.89	3.21	3.55	0.10	0.55	1.96	A, NS			
7	Stakes to fasten vines unto stakes.				3.89	3.73	0.44	0.10	1.96	A, NS	
8	Facilities e.g. refrigerator.				3.51	3.57	0.70	0.53	1.96	A, NS	
5.	Project.	3.53	3.78	3.66	0.56	0.66	1.96	A, NS			
9	Textbook for teaching vegetables crops.				3.83	3.63	3.73	0.52	0.59	1.96	A, NS
10	Head pan for storing/transporting vegetable				3.72	3.61	3.67	0.87	0.36	1.96	A, NS
6.	Problem solving.	3.84	3.72	3.78	0.34	0.78	1.96	A, NS			
11	Projector.	3.89	3.61	3.75	0.87	1.44	1.96	A, NS			
7.	Assignment.				3.72	3.61	3.67	0.87	0.67	1.96	A, NS
12	Pictures/diagrams of vegetable types.				3.51	3.77	3.64	0.43	0.41	1.96	A, NS
8.	Discussion.	3.81	3.60	3.71	3.81	3.77	3.79	0.43	0.79	1.96	A, NS
13	Chalk board.				3.51	3.72	3.96	A, NS			
14	Potted vegetable crops.	3.62	3.65	3.64	0.56	1.22	1.96	A, NS			

Key: A = Agreed, NS = Not significant.

Key: A = Agreed, NS = Not significant.

The data in Table 3 showed that 7 out of 8 items had respondents agreed that the 7 items should be the mean values ranged from 3.51 to 3.79, which were methods of teaching vegetable production in above the cut-off point of 2.50.This implies that the secondary schools. The data also showed that the

standard deviation of the responses of the respondents on the 7 items ranged from 0.10 to 0.87 which means that the respondents were not far from the mean and from the opinions of one another in their responses. The table also revealed that the items had their t-calculated value 2.04. Therefore, there was no significant difference in the mean ratings of the two groups of respondents on methods of teaching vegetable production. Therefore, the null hypothesis of no significant difference for the two groups of respondents was upheld. However, item 2 had a mean value of 2.16, which means that respondents rejected lecture as a method of teaching vegetable production for secondary schools graduates.

Data presented in Table 4 showed that all the items had mean values ranged from 3.39 to 3.75. This means that the respondents agreed that the 14 items should be the instructional

resources for vegetable crop production. The data also revealed that the standard deviation of the responses of the respondents on the 14 items ranged from 0.43 to 0.74 which means that the respondents were close to the opinion of one another in their responses. The table also revealed that the 14 items had their tcalculated value less than t-table value of 1.96. Therefore, there was no significant difference in the mean responses of lecturers and teachers of agriculture on instructional resources for vegetable production. Therefore, the null hypothesis of no significant difference for lecturer and teachers was upheld.

Discussions of Findings

The result of the data on objectives of vegetable production revealed that the provision of students with basic knowledge and skills of vegetable production; changing the mindset of youths from looking for job to that of developing attitude for selfemployment,

Table 5: Mean rating and t-test analysis of lecturers and agricultural extension on evaluation Methods/techniques for assessing students achievements of vegetable production objectives/content (N 91).

S/N	Evaluation methods for assessing students			$\bar{X}_1$	$\bar{X}_2$	$\bar{G}X$	SD	t-cal	t-tab	Remarks
1	Oral questioning. 3.57	3.51	3.54	0.23	0.49	A, NS			1.96	
2	Written questions	3.51	3.72	3.61	0.72	0.28	1.96	A, NS		
3	Observation 3.58	3.34	3.46	0.43	0.23	1.96	A, NS			
4	Assignment 3.50	3.21	3.36	0.10	0.25	1.96	A, NS			
5	Project 3.50	3.78	3.64	0.56	0.58	1.96	A, NS			
6	Report from field trip(s)	3.76	3.72	3.74	0.34	4.59	1.96	A, NS		

Key: A = Agreed, NS = Not significant

Data presented in a Table 5 indicated that the 6 items respondents agreed that they should be evaluation had mean values ranged from 3.36 to 3.74 which methods for assessing the students' performance in were above the cut-off point of 2.50. This means the vegetable production after teaching. The data also

revealed that the standard deviation of the responses of the respondents on the 6 items ranged from 0.10 to 0.72. This means that the respondents were not far from the mean and from the opinions of one another in their responses. The data further reveals that the items had their t-calculated value less than t-test value of 1.96. Therefore, there was no significant difference in the mean ratings of the responses of lecturers and teachers of agriculture on evaluation methods for assessing students' achievement. Therefore, the null hypothesis of no significant difference for lecturers and agriculture was upheld.

equipping students with skills to manage human and material resources in vegetable production enterprise, creating awareness on job opportunities in vegetable production, and two other items are the objectives of vegetable production. These findings are in agreement with Onuka (2007) who found that training is organized for the purpose of assisting trainees to acquire professional skills for their business

and equip them with competence to demonstrate relevant skills using relevant tools and materials.

The result of the data on the content of the proposed vegetable production subject indicated what should form the content of vegetable production for integration into the entrepreneurship subjects. These include: meaning and importance of vegetable production, types and examples of vegetable crops, vegetable production system, among other five other items. These findings validates the opinion of Ibekwe (2016) who posited that individual wishing to embark on vegetable production must learn the meaning, production system, pest and diseases, processing techniques and marketing of vegetable and vegetable products.

The result of the data on instructional resources showed that the school farm, farm tools and machines, lime, soil testing kit, fertilizer projector, pictures and chalkboard are necessary for teaching vegetable production. These findings are in consonant with Olaitan and Mana (2001) who listed the school farm, farm tools and machines as useful resource materials.

The result of the data on instructional delivery indicated that oral instruction, demonstration, field trip, project, problem-solving, assignment and discussion methods are necessary for teaching the content of vegetable production to students. The finding is in agreement with Nkpa (2011) and Egbule (2004) who listed demonstration, field trip and assignment as important methods of instructional delivery.

The result of the data on Table 5 indicated 6 evaluation methods for assessing students' achievements in vegetable production. They are oral questioning, written questions, observation, assignment, project and report from field trip(s).This finding agrees with the views of (Uko et al,2016).According to them the teacher evaluates students performance using oral questioning, assignment and so on.

Conclusion

The Federal Government of Nigeria introduced the teaching of entrepreneurship subjects in senior secondary schools. This is with a view to equipping student of this level with skills for entry into business of their choice later in life. Out of the 34 entrepreneurship subjects approved by Government, only animal husbandry and fishery are agricultural subjects. Regrettably, students interested in crop production are denied the opportunity to learn them in senior secondary schools.

It has therefore, become necessary to add crop production, especially vegetable crop production into the entrepreneurship subject list. This development has provided research opportunities in this direction. The study was therefore carried to find out empirically the opinions of lecturers and agricultural extension agents who are very knowledge about vegetable production on the objectives, contents, instructional resources, methods of instructional delivery and assessment methods for the proposed vegetableproduction subject. The study had therefore, made contribution to knowledge.

Recommendations

Based on the findings of the study, it is recommended that:

1. Vegetable crop production should be included into the list of entrepreneurship

subject approved by the Government to give students more subjects options to choose.

2. Agricultural extension agents should be sent to secondary schools to help teachers teach vegetable production.

References

Agbulu, O. N.(2004). *Curriculum in teaching agricultural education*. Makurdi: Aboke press.

Asogwa, Isiwu and Ibe (2017).*Integrating snake farming into the curriculum of animal production in colleges of agriculture for sustainable health and security in SouthEast, Nigeria. Journal of agricultural education teachers association of Nigeria. 1, 195-208.*

Badmus, M. A. and Yekinni, O. T. (2011). *Economic analysis of exotic vegetable production among women farmers in Akinyele local government area Oyo State, Nigeria international journal of agricultural economics and rural development 4(1), 2024.*

Dabson, B. and Malkin, J. (2003). *Mapping rural entrepreneurship. Missouri, Columbia: Kelog foundations and corporation for enterprise development.*

Ekoja, L. L. and Ekoja, C. E. (2012). *Assessment and usage of instructional materials in the teaching of social studies. Education for sustainable development. 1(2)132-137.*

Federal Republic of Nigeria (FRN)(2013). *National policy on education. Lagos. NERDC press*.

Federal Republic of Nigeria (2012). *9-year basic education curriculum: Pre-vocational studies.* Lagos: NERDC printing press.

Food and agricultural organization (FAO)(2013).*The state of food insecurity*. FAO. Retrieved November, 2013 from http://www.who.int/trade/glossary

Honby, A. S. (2010). *Oxford advanced learners dictionary of current English. London: Oxford university press.*

Ibekwe, A. O. (2010). *Analysis of dry season vegetable production in Owerri West local government area of Imo State, Nigeria.*

Iroegbu, S. C. (2016). *Economics of vegetable production among rural women farmers in Isuikwuato local government area of Abia State.*

Mkpa, M. A. (2012). *Developing curriculum on climate change for non-formal educative in Nigeria. A lead paper presented at the 25th silver jubilee conference of curriculum organization of Nigeria, in Imo State University on 19th to 20th September, 2012.*

Nwana, O. C. (2012). *Entrepreneurship education and the challenges of national transformation. Abuja international journal of*

education and management sciences.1(2).19-38.

Obioma, G. O. (2012). *Entrepreneurship education: curriculum content and its imperative for national development. 1(2), 39-58.*

Ogbuagu, J. O. (2017). *Focusing TVET instructional delivery in Nigerian schools in the digital era. Being Lead paper presented at the 1st National Annual Conference of the UNESCO-UNEVOC: centre for Technical, Vocational Education, Training and Research held at the university of Nigeria, Nsukka. Between 3rd – 6th May, 2017.*

Olaitan, S. O. and Mama, R. O. (2001). *Principles and practice of school farm management.* Owerri: Cape international publishers ltd.

Orie, J. B.& Ibekwe, I. K. (2014).Business policy and strategy: a simplified approach. Lagos: Green and cherish ltd.

Uzoagulu, A. E. (2011).Practical guide to writing research projects reports. Enugu: John Jacob's classic publishers ltd.

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EXTENT OF TEACHER'S USE OF E-LEARNING FOR INSTRUCTIONAL DELIVERY IN SECONDARY SCHOOLS IN SURULERE, LAGOS STATE.

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Abstract

E-Learning has been identified as an effective tool for teaching and learning. Many developed countries have introduced eLearning into schools but its use is still at the infancy stage in most developing countries. The use of e-Learning enhances the quality of education by helping teachers to do their jobs more effectively. The objective of this paper is to find out the extent of the use of e-Learning for instructional delivery in secondary schools in Surulere, Lagos State, Nigeria. The study adopted descriptive survey research design. Questionnaire was administered to 20 computer educators and 50 students that inquired the availability of e-Learning tools, teacher"s perceived usefulness of e-Learning and teacher"s perceived ease of use of e-Learning tools. The reliability index of 0.88 was established using Cronbach Alpha for internal consistency on the extent of teacher"s use of e-learning for instructional delivery. The data collected were analyzed using mean and standard deviation to answer the research questions and independent t-test statistic to test the null hypothesis at 0.05 level of significance using SPSS version 20. It was determined that e-Learning is not effectively used for instructional delivery in secondary schools in Surulere, Lagos State because most of the e-learning facilities are not available in the schools.

Key Words: *e-Learning, Instructional delivery, Secondary Schools, Surulere and Teachers*

Introduction

Today, we live in a world of technological revolution where almost every one associates with technology. e-Learning according to Markus (2008) can be defined as a learning process created by interaction with digitally delivered content, network-based services and tutoring support. —e-Learning identifies various types of computer-aided learning, usually using modern technological means. e-Learning is expanding especially in the sphere of distance education and corporate training‖ (Adaji, Salawu & Adeoye, 2008). —e-Learning can be understood as an educational process, using information and communication technologies to create training, to distribute learning content, communication between students and teachers and for management of studies‖ (Wagner, 2005).

E-Learning is a computer based educational tool or system that enables the learner to learn anywhere and at any time (Tagoe, 2012). Today e-Learning is mostly delivered through the internet, although in the past it was delivered using a blend of computerbased methods like CD-ROM. Technology has advanced so much that the geographical gap is bridged with the use of tools that make you feel as if you are inside the classroom. e-Learning offers the ability to share material in all kinds of formats such as videos, slideshows, word documents, PDFs, etc. Conducting webinars (live online classes) and

communicating with teachers via chat and message forums are also an option available to users. eLearning is learning utilizing electronic technologies to access educational curriculum outside of a traditional classroom (Dutta & Bilbao-Osorio, 2012). In some cases, it refers to a course, program or degree delivered completely online.e-Learning is electronic learning which means using a computer to deliver part or all of a coursewhether it is in a school or anywhere.Due to the advantages associated with e-Learning, which is a benefit of Information and Communication Technology (ICT), governments of developed countries tend to provide policy and implementation support for ICT in order for schools to use e-Learning to support teaching and learning.

E-Learning technologies offer learners control over content, learning sequence, pace of learning, time and often media, allowing them to tailor their experiences to meet their personal learning objectives. e-Learningpresents numerous research opportunities, along with continuing challenges for documenting scholarship. Innovations in e-Learning technologies point toward a revolution in education, allowing learning to be individualized (adaptive learning), enhancing learners' interactions with others (collaborative learning), and transforming the role of the teacher. The integration of e-Learning into education system can catalyze the shift towards applying adult learning theory, where educators will no longer serve mainly as distributors of content, but will become more involved as facilitators of learning and assessors of competency (Dutta & BilbaoOsorio, 2012). e-Learning can be used by medical educators to improve the efficiency and effectiveness of educational interventions in the face of the social, scientific and pedagogical challenges (Huynh, 2017). It has gained popularity in the past decade; however, its use is highly variable among medical schools and appears to be more common in basic science courses than in clinical clerkships. e-Learning is also called Web-based learning, online learning, distributed learning, computer-assisted instruction or Internet-based learning. There have been two common e-Learning modes: distance learning and computer assisted instruction (Huynh, 2017). Distance learning uses information technologies to deliver instruction to learners who are at remote locations from a central site. Computer assisted instruction (also called computer-based learning or computer-based training) uses computers to aid in the delivery of stand-alone multimedia.

Enhancement permits greater learner interactivity and promotes learners' efficiency, motivation, cognitive effectiveness and flexibility of learning style. Learning is a deeply personal experience: we learn because we want to learn (Huynh, 2017). By enabling learners to be more active participants, a well-designed eLearning experience can motivate them to become more engaged with the content. Interactive learning shifts the focus from a passive, teacher-centered model to one that is active and learner centered, offering a

stronger learning stimulus. Interactivity helps to maintain the learner's interest and provides a means for individual practice and reinforcement (Huynh, 2017). Evidence suggests that e-Learning is more efficient because learners gain knowledge, skills and attitudes faster than through traditional instructor-led methods.

This efficiency is likely to translate into improved motivation and performance. e-Learners have demonstrated increased retention rates and better utilization of content, resulting in better achievement of knowledge, skills and attitudes (Tagoe, 2012). Multimedia e-Learning offers learners the flexibility to select from a large menu of media options to accommodate their diverse learning styles. eLearninghas become an important part of most organizations and businesses these days, severalresearchers suggest that e-Learning will be an important part of educationfor instructional delivery.

The use of e-Learning for instructional delivery is increasingly becoming vital owing to the global network of the twenty first century teaching and learning. In line with this, Stosic (2015) opined that the use of modern technology such as ICT,CAI, etc. offers many means of improving teaching and learning. The roles and values ofe-Learningin instructional delivery are, promoting students commitment to learning, introducing the concept of new learning (example, many online learning packages which give students greater control over what they learn and how they learn), bringing students and teachers together for lessons, tutorials and one to one interactions across geographic locations, making students to do computer studies effectively andconducting experiments as viewed on screen, facilitating the process of learning throughinteraction with simulations, fostering students interest and motivation, making the lessons more exciting and interesting for both teachers and students, this in effect will expose and nurture inherent potentials among students to create sustainable livelihood using e-Learning skills they have acquired (2015).

The use of e-Learning gives the learner a true sense of urgency in his or her education. However, most students in traditional classroom setting do not have the luxury of exploring their own interests. It is important for a teacher to facilitate student's interest towards learning and this can be achieved with the use of e-Learning. Due to the numerous benefits ofeLearning, it has become a vital tool in instructional delivery (2015). Instructional delivery is the process of passing the content of a lesson to students in a way that the subject matter can fully be understood. It entails educating a class or classes of students while understanding their ability to do certain things.

Statement of the Problem

Some developing countries are introducinge-Learninginto schools,including Nigeria, but its use is still in the infant stage. Over the years, efforts have been made to provide computers to both public and private secondary schools and in organizing workshops and seminars to train teachers in order to improve their skills and knowledge of computing and computer applications to better their productivity, competency and efficiency in the course of teaching and learning. In this way, well packaged tutorials (course materials) can be

prepared by teachers and delivered to students in the form of presentation slides, test materials, video tutorials, e-books and computer-based training (CBT). Observations have shown that many secondary schools are yet to or have not fully adopted the use of e-Learning. This prompted the researcher to take up this study on the extent of teachers' use of e-Learning for instructional delivery in Secondary Schools in Surulere, Lagos State.

Purpose of the Study The main purpose of the study is:

1. To find out the availability of e-Learning tools in secondary schools in Surulere, Lagos State.
2. To find outthe teachers' perceived usefulness of e-Learning for instructional delivery.
3. To examine teachers' perceivedease of the use of e-Learning tools for instructional delivery.

Research Questions

The following research questions were posed to guide the study.

1. what are the availability of e-learning tools in secondary schools in Surulere, Lagos State
2. What is the teachers' perceived usefulness of eLearning for instructional delivery?
3. What is the teachers' perceived ease of use of elearning tools for instructional delivery?

Hypothesis

Ho_1:There is no statistical significance difference between the mean ratings of the computer educators and students on the availability of e-Learning tools in secondary schools in Surulere, Lagos State.

Ho_2:There is no statistical significance difference between the mean ratings of the computer educators and students on the teachers' perceived usefulness of e-Learning for instructional delivery

Ho_3:There is no statistical significance difference between the mean ratings of the computer educators and students on teachers' perceived ease of the use of e-Learning tools

for instructional delivery

Methodology

The study adopted a descriptive survey research design, which is more appropriate for studies dealing with people's opinion, beliefs, attitude, motivation and behavior (Osuala, 2005). The study was carried out in four secondary schools in Surulere, Lagos State and the secondary schools include: Onitolo Community Junior and High School, Akintan Junior and High School, New Era Girls Junior and Senior Secondary School and Gbaja Junior and Senior Secondary School.

The population of the study comprised of 20 computer teachers, teaching in these four secondary schools and 500 students was used as the respondents for the study. Random sampling technique was use to select 50 students from the four secondary schools in the study area. A structured questionnaire was used as the instrument for data collection and the questionnaire items were generated based on the three (3) research questions formulated to obtain information from computer educators of the secondary schools involved.The questionnaire was divided into two parts: Part One was for information about the

respondents, while Part Two was subdivided into 3 sections A, B and C, each corresponding to the research questions. Section —A‖ items (1-10) where related to finding out the availability of e-Learning tools in the secondary schools, Section —B‖ items (11-20) where related to finding out teacher's perceived usefulness of eLearning in instructional delivery and Section —C‖ items (21-30) where related to finding out teacher's perceived ease of using e-Learning tools in instructional delivery. All the 30 items were arranged under a 4-point scale of Strongly Agreed (SA) which was assigned 4, Agreed (A) assigned 3, Disagreed (D) assigned 2 and Strongly Disagreed (SD) assigned 1.

The instrument was face validated by five lecturer, two from the department of Computer & Robotics Education,University of Nigeria, Nsukka, two from Lagos state University and one from University of Jos. The instrument was assessed to ensure clarity and appropriateness of the questionnaire items. The instrument was subject to reliability test, using Cronbach alpha method to determine the internal consistency which yielded a coefficient of 0.82. The questionnaire was administered by the researcher to the computer teachers of the various secondary schools used.Quantitative data were analyzed using descriptive statistics from the Statistical Package for the Social Sciences (SPSS). The data collected from the respondents were analyzed using mean and standard deviation and t-test.

Results

Research Question 1

To what extent are e-Learning tools available in Secondary Schools in Surulere, Lagos State?

Ho_1: There is no statistical significance difference between the mean ratings of the computer educators and students on the availability of e-Learning tools in secondary schools in Surulere, Lagos State.

Table 1: Mean Ratings and T-test Analysis of the Responses of Respondents on the Extent of Availability of e-Learning Tools in Secondary Schools in Surulere, Lagos State.

S/N	ITEM STATEMENT	X	SD	R	P value	R
1	School has a working server	1.36	0.64	LE	0.17	NS
2	School has a working router	2.07	1.14	LE	0.92	NS
3	School has network cables	2.53	1.27	HE	0.44	NS
4	Students use laptops	2.04	0.70	LE	0.44	NS
5	Educators have personal computers	2.92	1.22	HE	0.94	NS
6	School has internet connection	2.72	1.15	HE	0.24	NS
7	School has a projector	2.78	1.26	HE	0.50	NS
8	There is a content management system	2.19	0.76	LE	0.71	NS
9	School has working electronic boards	2.03	0.47	LE	0.81	NS
10	There is a Learning Management System (LMS)	2.01	0.81	LE	0.56	NS

Key: X = Mean, SD = Standard Deviation, LE = Low Extent, HE = High Extent, NS = Not significance, R = Remarks

The data presented in Table 1 had their means ranged from 1.36 to 2.92, this shows that the range rating for items 1, 2, 4, 8-10 is lesser than 2.50, then items 3, 5, 6, 7 are above 2.50. This signifies that most of the tools needed for e-Learning are not available in secondary schools in Surulere, Lagos State.

Table 1 also shows the t-test scores of computer educators and students on the tools needed for eLearning in secondary schools in Surulere, Lagos State. The analysis shows that 10 identified items the tools needed for e-Learning in secondary had their pvalues ranged from 0.17 to 0.92 which are all greater than 0.05 level of significance There is no statistical significance difference between the mean ratings of the computer educators and students on the availability of e-Learning tools in secondary schools in Surulere, Lagos State.

Research Question 2

What is the teachers' perceived usefulness of eLearning for instructional delivery?

Ho_2: There is no statistical significance difference between the mean ratings of the computer educators and students on the teachers' perceived usefulness of e-Learning for instructional delivery.

Table 2: Mean Ratings and T-test Analysis of the Responses of Respondents on the Teachers' Perceived Usefulness of e-Learning for Instructional Delivery.

S/N	ITEM STATEMENT	X	SD	R	P value	R
11	E-Learning enables quality delivery of lesson	3.79	0.41	SA	0.18	NS
12	E-learning is useful for Self-assessment	3.84	0.37	SA	0.97	NS
13	E-learning Keeps learners engaged	3.79	0.41	SA	0.32	NS
14	E-learning gives instant grading and feedback	3.74	0.56	SA	0.99	NS
15	E-learning reduces stress of work to be done by the teacher	3.79	0.41	SA	0.32	NS
16	E-learning enhances Communication	3.84	0.37	SA	0.38	NS
17	E-learning motivates learners to study	3.74	0.45	SA	0.82	NS
18	E-learning Tracks learner's progress	3.79	0.41	SA	0.17	NS
19	E-learning Enhances fast response to assignment and projects	3.84	0.37	SA	0.39	NS
20	E-learning Facilitate online Contact between teacher and learner	3.89	0.31	SA	0.07	NS

Key: X = Mean, SD = Standard Deviation, SA = Strongly Agreed, D = Disagreed, NS = Not significance, R = Remarks

The data presented in Table 2had their means ranged from 3.74 to 3.89. This shows that the average rating for items 11-20, are above 2.50 which implies that e-Learning was perceived by teachers as a useful tool for instructional delivery.

Table 2 also shows the t-test scores of computer educators and students on the Teachers' Perceived Usefulness of e-Learning for Instructional Delivery. The analysis shows that 10 identified items on the Teachers' Perceived Usefulness of e-Learning for Instructional Delivery had their p-values ranged from 0.91 to 1.26 which are all greater than 0.05 level of significance There is no statistical significance difference between the mean ratings of the computer educators and on the Teachers' Perceived Delivery.

Research Question 3

What is the teachers' perceived ease of use of eLearning tools for instructional delivery?

Ho_3: There is no statistical significance difference between the mean ratings of the computer educators and students on teachers' perceived ease of the use of e-Learning tools for instructional delivery.

Table 3: Mean Ratings and T-test of the Responses of Respondents on the Teachers' Perceived Ease of Use of e-Learning Tools for Instructional Delivery.

S/N	ITEM STATEMENT	X	SD	R	P value	R
21	It is easy to operate the server	2.32	0.47	D	0.53	NS
22	It is easy to operate a router	2.42	0.50	D	0.77	NS
23	It is easy to set up a Local area network	2.37	0.68	D	0.01*	S
24	Internet is user friendly	2.47	0.69	D	0.12	NS
25	It is easy to set up electronic board	2.26	0.80	D	0.35	NS
26	I find it easy setting up a server	2.16	0.60	D	0.11	NS
27	It is easy setting up a projector	2.42	0.60	D	0.98	NS
28	It is easy to install LMS (Learning Management System)	2.21	0.53	D	0.44	NS
29	It is easy to operate electronic board	2.42	0.60	D	0.25	NS
30	It is easy to set up a router	2.47	0.61	D	0.16	NS

Key: X = Mean, SD = Standard Deviation, SA = Strongly Agreed, D = Disagreed, NS = Not significance, R = Remarks

The data presented in Table 3 had their means ranged from 2.16 to 2.47. This shows that the average rating for items 21-30 is less than 2.50 which implies that teachers' perception about e-Learning is that the tools required for running e-Learning are not easy to use or operate.

Table 3 also shows the t-test scores of computer educators and students on the Teachers' Perceived Ease of Use of e-Learning Tools for Instructional Delivery. The analysis shows that 10 identified items on the Teachers' Perceived Ease of Use of eLearning Tools for Instructional Deliveryhad their pvalues ranged from 0.11 to 0.98 which are all greater than 0.05 level of significance There is no statistical significance difference between the mean ratings of the computer educators and on the Teachers' Perceived Ease of Use of e-Learning Tools for

Instructional Delivery.

Discussion of the Findings

The discussion is organized under the following heading:

Availability of e-Learning Tools for Instructional Delivery: Result displayed in Table 1 showed thatmost of the e-Learning tools needed for instructional delivery are not available in secondary schools in Surulere. These findings are in line with Mac-Ikemenjima (2005) and Jegede &Owolabi (2003) that there are shortages of e-Learning facilities needed for instructional delivery. Similarly the findings agree with the research reports of Ololube, Ubogu&Egbezor (2007) that ICT infrastructures/ eLearning facilities are not available for instructional delivery in secondary schools.

Teacher"s Perceived Usefulness of e-Learning for Instructional Delivery: The result in Table 2 shows that e-Learning is very useful for instructional delivery. This finding agreed with the views of Brown et al (2008) and Judahil et al (2007) who reported that e-Learning offers teachers several ways of interacting with learners and gives them instantaneous feedback. Singh (2001), also reported that e-Learning systems enables improved communication among students and between students and instructors.

Teacher"s Perceived Ease of Use of e-Learning Tools: The findings in Table 3 showed that most teachers find it difficult to setup and use e-Learning tools. This finding agrees with the view of Jadhil et. al. (2007) that it is important for those who embrace e-Learning for teaching and learning to possess a variety of skills in Information and Communication Technology.

Conclusion

From the findings of the study, e-Learning is very important for instructional delivery, because it offers teachers a variety of ways of interacting with learners, but is not fully used for instructional delivery in secondary schools in Surulere, Lagos because some of the e-Learning facilities are not available in the schools and the teachers also find it difficult to handle the required tools for e-Learning.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The Ministry of Education should use the findings of this study as bases for organizing seminars, conferences and workshops for retraining of computer teachers on the use of tools required in e-Learning.
2. E-Learning facilities and equipment should be provided in secondary schools so as to improve teaching and learning. This supports the theories of Vocational Technical Education that effective training will take place when the training jobs are carried out in the same way, with the same operations and the same tools and machines as in the work place itself.

References

Adaji, T. O., Salawu, I. O. & Adeoye, F. A. (2008). eLearning and Distance Educationin Nigeria. *The Turkish Online Journal of Educational Technology (TOJET), Volume 7 Issue 4 Article 7.*

Brown, C., Thomas, H., Merwe, A. & Dyk, L. (2008). The Impact of South Africa's ICT Infrastructure on Higher Education. *Available at http://sun025.sun.ac.za*

Dutta, S. & Bilbao-Osorio, B. (Eds.) (2012*). The Global Information Technology Report 2012: Living in a Hyper-Connected World.* Geneva: World Economic Forum and INSEAD.

Huynh, R. (2017). The Role of e-Learning in Medical Education. *Academic Medicine: Journal of the Association of American Medical Colleges, Vol. 92 Issue 4, p. 430.*

Jegede, P.O. & Owolabi, A. J. (2003). Computer Education in Nigerian Secondary Schools: Gaps between Policy and Practice. *Meridian: A Middle School Technology Journal, 6(2) 1 – 11. Retrieved from http://www.ncsu.edu/meridian/sum2003/nige ria/nigeria.pdf.*

Juhadil, N., Samah, A.& Sarah, H. (2007). Use of Technology, Job Characteristics and Work Outcomes: A Case of Unitary Instructors. *International Review of Business Research Papers, 3(2), 184-203.*

Mac-Ikemenjima, D. (2005, April). E-Education in Nigeria: Challenges and Prospects. *A Paper Presented at the 8th UN ICT Task Force Meeting. Dublin, Ireland.*

Markus, B. (2008). Thinking about e-Learning. *FIG Workshop, ITC, Enschede.*

Ololube, N.P., Ubogu, A.E., & Egbezor, D. E. (2007). ICT and Distance Education Programmes in a Sub-Saharan African Country: A Theoretical Perspective. *Journal of Information Technology Impact, 7(3), 181194.*

Osuala, E. C. (2005). *Research Methodology.* Enugu: New Generation Books.

Singh H. (2001). Building Effective Blended Learning Programs. *Educational Technology 43(6):*

51- 4.

Stosic, Lazar. (2015). The Importance of Educational Technology in Teaching. *International Journal of Cognitive Research in Science, Engineering and Education (IJCRSEE), 3, 111-114.*

Tagoe, M. (2012). Students' Perceptions on Incorporating e-Learning into Teaching and Learning at the University of Ghana. *International Journal of Education and Develop.*

Wagner, D. A. (2005). *Monitoring and Evaluation of ICT for Education: An Introduction.* Monitoring and Evaluation of ICT in Education Projects: A Handbook for Developing Countries. Washington, DC: World Bank/InfoDev.