EXTENT OF INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN ENTREPRENEURSHIP EDUCATION AMONG VOCATIONAL AND TECHNICAL EDUCATION LECTURERS IN COLLEGES OF EDUCATION

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Abstract

The study is to determine how far information and communication technology has been integrated into the study of entrepreneurship education among vocational and technical education lecturers. Three specific purposes and three corresponding research questions and one null hypothesis guided the study. A survey research design was adopted for the study. The population of the study is a total of 66 vocational and technical education lecturers. The instrument has 17 items, four point modified Likert scale. The instrument was validated by three experts one from Ebonyi State University, Abakaliki and two from Enugu State College of Education (Technical) Enugu. Test-re-test method was used to ascertain the reliability of the instrument. A reliability coefficient of 0.76 was obtained using Pearson Product Moment Correlation Coefficient. This figure was adjudged high enough to be reliable for the study. Data were collected by the researchers and analyzed using SPSS package to determine the mean and standard deviations of the items responded to, while t-test was used to test the hypotheses at 0.05 level of significance. The result show that integrated of information and communication and technology are to a low extent. The null hypothesis was sustained.
Key words: Entrepreneurship; Information; Communication; Technology;

Introduction

Entrepreneurship education is one of tools Vocational and Technical Education (VTE) students require for gainful employment, become self reliant and employers of labour after school. It is a process through which the entrepreneurial and managerial capabilities of potential entrepreneurs are developed. Olawolu and Kaegon (2012) explained that entrepreneurship education prepares youths to be responsible and entering individuals, who become entrepreneurs or entrepreneurial thinkers by exposing them in real life learning experiences where they will be required to think, take risks, manage circumstances and incidentally learn from the outcome. According to Gidado and Akaeze (2014) entrepreneurship education is all about learning on identification of business opportunities; creativity and innovativeness; bearing risk to utilize opportunities or implement new plans; good management skills and wealth creation. It involves learning of a variety of business related competencies such as improvements of decision-making skills or skills to access information and using different ICT tools for creating a better working space (De-Faoite, 2003).

Hamberg, Bucksch and Brien (2015) said that Entrepreneurship education programmes should offer all students the tools to be creative, to solve problems efficiently, to analyze business ideas objectively, and to communicate, cooperate, lead, develop and evaluate projects. This is relevant to vocational and technical (VTE) students because of the situation of the society today. VTE students can learn to set up their own businesses if they can test their ideas in an educational, supportive environment.

With the rapid evolution of technology, information age has become an opportunistic environment for entrepreneurs and has played a significant role in our day to day lives. Okereke and Okoroafor (2011), asserts that entrepreneurial education and Information and Communication Technology (ICT) skills have been acknowledged world wide as a potent and viable tools for self-empowerment, job and wealth creation. ICT refers to the whole range of technologies involved in information processing and electronic communication. It is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phone, computer and network hardware and software, satellite system among others.

According to Iloanusi and Osuagwu (2009) ICT is the processing and maintenance of information, and the use of all forms of computer, communication, network and mobile technologies to mediate information. According to them, communication technologies include all media employed in transmitting audio, video, data or multimedia such as cable, satellites, fiber –optic, wireless (radio, infra-red, Bluetooth, Wifi). While networking technologies include personal area network (PAN), campus area network (CAN), intranet, extranets, local area network (LAN) and the internet. To them, Computer technologies includes all removable media such as optical disc, disks, flash memories, video books, multimedia, projectors, interactive electronic boards and continuously emerging state-of-art PCs. While mobile technologies to comprise mobile phone, palmtops etc. these technologies has information as their material objects. ICT can also be referred to as the physical structure of network of computer based system (hardware, software and media) for the purpose of organizing, processing, communicating, assessing, presenting storing retrieving and simplifying information when needed and in a form it is needed. In support of this, Tinio (2003) saw ICT as diverse set of technological tools and resources used to communicate, and to create, disseminate, store and manage information which includes computer, internet, broadcasting technologies (radio and television), and telephony. The involvements of the above listed portrayed ICT as very important tool to learning and make graduates become self reliant.

Observations show that ICT helps lecturers to be more confident in teaching process, help to increase their writing skills and help the lecturers present information in different forms during teaching proper. It also gives rise to greater problem solving and critical thinking skills, as well make lecturers prepare students to become independent learners. With this no doubt ICT application in education enhances the delivery and access to knowledge and improves the economy for sustainable development and VTE is not an exception to the improvement it provides. ICT in education also encourages critical thinking and offers unlimited means of achieving greater goals in VTE. No wonder Umoru and Nnaji (2015) maintained that ICT in Vocational Education areas are the modern facilities introduced into the industry to enable the educators educate the learner to be proficient and profitable in the contemporary society.

Integration of ICT into entrepreneurship education in vocational and technical education in the developed world, notably metamorphose the lecturers to perform credibly well and more

efficiently with greater success. In view of this, European Commission (2007) noted that ICT improve students entrepreneurially by making them develop competencies in decision making, making business planning solutions, database, and promoting other entrepreneurship skills only when the students are prepared to face the world of work with ICT. Hamberg, Bucksch and Brien (2015) affirmed that Information and Communication Technologies (ICT) affects entrepreneurship education because new technologies support the development of new entrepreneurship forms. ICT have the potential to improve lecturers' competences and skills, to motivate and engage lecturers, to help them to link knowledge to work practices. It is therefore necessary to determine the extent of integration of ICT in entrepreneurship education among vocational education lecturers in Colleges of Education in Enugu State, Nigeria.

Purpose of the study

The purpose of the study is to investigate the extent of integration of Information and Communication Technology in Entrepreneurship education among vocational and technical education lecturers in Colleges of Education. Specifically, the study will investigate the:

1. Extent of integration of information technologies in teaching entrepreneurship education among vocational and technical education lecturers in colleges of education.
2. Extent of integration of communication technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education.

Research Questions

These research questions were posed to address the problem of this study:

1. What is the extent of integration of information technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education?
2. What is the extent of integration of communication technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education?

Hypothesis

1. There is no significant difference in the mean ratings of male and female respondents on the extent of integration of information and communication technologies in teaching

entrepreneurship education among vocational and technical education lecturers in Colleges of Education.

Methods

The descriptive survey research was used in this study. The population of the study comprised of all lecturers of Vocational and Technical Education in Colleges of Education in Enugu State totaling 66. A four-scale point questionnaire of 17 items was selected. The instrument was validated by three experts one from Ebonyi State University, Abakaliki and two from Enugu State College of Education (Technical) Enugu. Test-re-test method was used to ascertain the reliability of the instrument. A reliability coefficient of 0.76 was obtained using Pearson Product Moment Correlation Coefficient. This figure was adjudged high enough to be reliable for the study. Data were collected by the researchers by sharing the copies of the questionnaire to the respondents in their respective schools. Mean and standard deviation were used for analyzing the research questions while t-test was used to test the hypotheses at 0.05 level of significance. When the mean value of an item was 2.50 and above it was regarded as Agreed and therefore high extent and items with mean value below 2.50 were regarded as Disagreed and is low extent. For the hypothesis, when the t-calculated value is less than the t-table value the hypothesis will be accepted but when the t-calculated is equal or greater than the t-table value the hypothesis will be rejected.

Results
Research Question 1.

What is the extent of integration of information technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education?

Table 1: Mean of respondents on the extent of integration of information technologies in teaching entrepreneurship education among vocational and technical education lecturers. N = 66

S/N	Items	Mean	Decision
1	Students listen to the radio in the lecture hall for educational purposes.	1.88	Low extent
2	Video Tapes are used for class work recordings.	1.98	Low extent
3	CD-ROM is used in the class.	2.89	High extent
4	DVDs are in use in the computers.	3.28	High extent
5	Internet is freely used for classroom work.	2.28	Low extent
6	Audio Conferencing is used for class work.	2.07	Low extent
7	Lecturers use videoconferencing for teaching the students	1.50	Low extent
8	Overhead Projectors are regularly in use for teaching.	2.56	High extent
9	Telephone is highly utilized for teaching entrepreneurship in business	2.32	Low extent

	education.		
	Grand mean	*2.31*	*Low extent*

Data in Table 1 show that there is low extent to the integration of information technologies in teaching entrepreneurship education among vocational and technical education lecturers in colleges of education in items 1,2,5,6,7, and 9. But for items 3,4 and 8 the integration is high with 2.89, 3.28 and 2.56 respectively. But generally there is low integration of information technologies in teaching entrepreneurship education with a grand mean of 2.31.

Research Question 2.

What is the extent of integration of communication technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education?

Table 2:   Mean of respondents on the extent of integration of communication technologies in teaching entrepreneurship education among vocational and technical education lecturers.

N = 66

S/N	Items	Mean	Decision
10	Audio Conferencing equipment is scarce in the classrooms for teaching.	3.39	High extent
11	Videoconferencing is frequently used for class teaching.	1.81	Low extent
12	The lecturers make use of Audiographics during teaching.	2.08	Low extent
13	Students and lecturers us mobile telephones for teaching conversation.	2.23	Low extent
14	Students are allowed access to school internet facilities during class.	2.24	Low extent
15	Students are allowed one to a Computer desktop each during class work.	2.51	High extent
16	Lecturers paste lecture information on the school electronic bulletin board.	2.10	Low extent
17	Your school allows students to use the school Computers for learning without the teacher.	2.26	Low extent
	Grand mean	*2.32*	*Low extent*

Data in Table 2 above indicate that the integration of communication technologies in teaching entrepreneurship education is also low in all the items except for item 15 with mean score 2.51. Item 10 have a high mean response but it is a negative questionnaire and therefore is of low integration. What it shows is the equipment is scarce and therefore is not well integrated.

Hypothesis 1: There is no significant difference in the mean ratings of male and female respondents on the extent of integration of information and communication technologies in

teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education.

Table 3:   t-test analysis of the mean ratings of male and female respondents on the extent of integration of information and communication technologies in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education

S/N	ITEM	N	GENDER	X	SD
1	Students listen to the radio in the lecture hall for educational purposes.	18	Male	2.00	0.76
		48	Female	1.96	0.96
2	Video Tapes are used for class work recordings.	18	Male	2.05	0.56
		48	Female	1.92	0.65
3	CD-ROM is used in the class.	18	Male	3.21	0.77
		48	Female	2.56	0.59
4	DVDs are in use in the computers.	18	Male	3.24	0.98
		48	Female	3.31	0.75
5	Internet is freely used for classroom work.	18	Male	2.13	0.87
		48	Female	2.43	0.56
6	Audio Conferencing is used for class work.	18	Male	1.82	0.97
		48	Female	2.33	0.98
7	Lecturers use videoconferencing for teaching the students	18	Male	1.23	0.78
		48	Female	1.76	0.86
8	Overhead Projectors are regularly in use for teaching.	18	Male	2.50	0.83
		48	Female	2.61	0.56
9	Telephone is highly utilized for teaching entrepreneurship in business education.	18	Male	2.32	0.67
		48	Female	2.31	0.76
10	Audio Conferencing equipment is scarce in the classrooms for teaching.	18	Male	3.12	0.68
		48	Female	3.65	0.61
11	Videoconferencing is frequently used for class teaching.	18	Male	1.27	0.91
		48	Female	2.36	0.87
12	The lecturers make use of Audiographics during teaching.	18	Male	2.42	0.76
		48	Female	1.73	0.68
13	Students and lecturers us mobile telephones for teaching conversation.	18	Male	2.07	0.87
		48	Female	2.39	0.78
14	Students are allowed access to school internet facilities during class.	18	Male	2.35	1.01
		48	Female	2.12	0.98
15	Students are allowed one to a Computer desktop each during class work.	18	Male	1.87	0.87
		48	Female	2.34	0.91
16	Lecturers paste lecture information on the school electronic bulletin board.	18	Male	2.81	0.98
		48	Female	3.01	1.02
17	Your school allows students to use the school Computers for learning without the teacher.	18	Male	1.96	0.67
		48	Female	2.16	0.78

Table 4

Gender	N	X	SD	Df	P	t-cal	t-crit	Decision
Male	18	2.26	0.82	64	0.05	-0.0096339	1.943180	Not significant
Female	48	2.41	0.78					

The result in Table 4 above show acceptance of the null hypothesis that there is no significant difference between the male and female responses on the integration of information and communication technology in teaching entrepreneurship education among vocational and technical education lecturers in Colleges of Education. This is evident in the fact that t-calculated is less than t-table value as given in the decision rule above.

Discussion of results

The basis of the findings of this study reported here as indicated above in tables show that there is low integration of information and communication technologies in teaching entrepreneurship education among Vocational and Technical Education lecturers in Colleges of Education. The result also indicated that the responses of male and female do not differ significantly. Thus, this was supported by Ololube (2006), which shows that there is poor integration of ICT in teacher education programs. It is obvious in Yusuf (2005), that most lecturers in Nigeria do not have the needed experience and competence in the use of computers either for educational or industrial purposes. This is evident from the study in the fact that integration of ICT to vocational and technical education was poor. It is a known fact that the products of the teachers are the students and thereby if the teachers are not good the tendency is that they transfer what they are made up of to the students and the re-cycle continues, as such making a dangerous case for the feature.

In Yusuf's study it was concluded that there was no significant difference between male and female teachers in the use of computers, their levels of proficiency in computer operations, and in their use of common software. Moreover, Computer education introduced into the Nigerian schools since 1988 has largely been unsuccessful as a result of lecturers' incompetence because empirical studies according to Yusuf have recognized that teachers' ability and willingness to

use ICT and integrate it into their teaching is largely dependent on the poor quality of professional ICT development they receive.

Therefore, since the qualities of entrepreneurship education training through ICT integration are not effective, technologically lecturers will find it difficult to meet the global transformations in science and technologies. It demonstrates that the existing curriculum designed for vocational and technical education students training in Nigeria does not include the practical usage of ICT materials such as computers and their software, slides, overhead projectors etc. Even if it is included, it is only based on theoretical paradigms. To this effect integration becomes difficult and as such users hardly come in contact with ICT instructional materials, as such lacks the necessary skills in ICT.

Conclusion and Recommendations

The changes in the global sector as regards social systems, economic, and technological systems of the past years are making education and training for all more crucial than ever. The school system needs trained individuals who will come into the system with the systematic mindset of innovation and creativity. Nevertheless, educational systems to varying degrees globally are struggling to afford opportunities for all, to provide their graduates with the necessary entrepreneurial knowledge and skills for evolving marketplaces and sophisticated living environments. To meet these challenges, countries like Nigeria has to focus concomitantly on expanding access, improving internal efficiency, promoting the quality of teaching and learning, improving system management and improving on the teaching of relevant entrepreneurship skills during education training, making these practical oriented exercise rather than theory based.

The following are recommended:

1. Vocational and technical education lecturers should be given enough ICT training if much is desired to be achieved in the integration of ICT in entrepreneurship.

2. Schools should be equipped with the necessary ICT training facilities, to enhance proper integration in the education system.

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