APPLICATION OF INNOVATIVE TECHNOLOGIES IN TEACHING AND ASSESSMENT OF POLITICAL SCIENCE COURSES IN COLLEGES OF EDUCATION IN ENUGU STATE

[1]Dr. Ugwuda, Sylvanus Ochetachukwu
Department of Social Science Education, University of Nigeria, Nsukka
sylvanus.ugwuda@unn.edu.ng

[2]Eze, Ngozi Eucharia (Ph.D.)
Department of Educational Foundations, University of Nigeria, Nsukka
ngozi.ezeh@unn.edu.ng

Abstract

The study examined the innovative technologies applied in teaching and assessment of political science courses in colleges of Education in Enugu State, Nigeria. The study adopted the descriptive survey research design. Three research questions guided the study. The population of the study was 410 respondents which comprised 68 lecturers and 342 students in colleges of Education in Enugu State. The sample for the study was 24 lecturers and 60 students, total 84; selected through the proportionate stratified sampling technique from the four (4) Colleges of Education in Enugu State. The instrument for data collection was a structured questionnaire titled 'Questionnaire on Application of Innovative Technologies in Teaching and Assessment of Political Science Courses (QAITTAPSC)' designed by the researchers on a four-point likert scale. It was validated by experts and the coefficient reliability was 0.80 which was considered high for the study. The data collected was analyzed using the Statistical Package for Social Sciences (SPSS). The results of the study revealed that the innovative technological devices such as projectors, smart boards, laptops, tablet computers, phones, voice synthensizer, digital textbooks, digital libraries and e-learning devices had positive significant impact in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. The findings of the study also indicated that proper funding by the school authorities; and periodic training on the part of lecturers for effective use of innovative technological devices for teaching and learning were major ways to improve the application of innovative technologies in teaching and assessment of Political Science courses in Colleges of Education. Based on the findings, the researchers recommended that government and non-governmental bodies should ensure that basic Information and Communication Technology (ICT) resources namely: desktop computers, laptops, iPads and other mobile devices be made available and accessible to all lecturers and students in Colleges of education through subsidies and loan facilities. The study further recommended that, lecturers and students of Political Science Education should be exposed to regular practical training sessions in ICT applications as a means of improving their proficiency in manipulation of innovative educational technologies.

Key words: Innovation, Technologies, Teaching, Assessment, Political Science Courses.

Introduction

One of the prominent areas in education, which had attracted the attention of educationists since ages, is the process of making the teaching-learning situation easy for both the teachers and the learners. Through innovations the responsibility of the class teacher is to help students attain maximum achievement in their learning tasks; thus, several competencies are expected from the teacher of which, the ability to use appropriate instructional strategies and innovations in teaching are considered to be crucial in achieving this goal. An aspect of this innovation in teaching is the application of modern technologies which is the strongest factor shaping the educational landscape today. Many school districts are showing support for increased levels of technology applications in the classroom by providing hardware such as laptop computers, palmtops, notebook computers and tablets computers; enhancing internet connectivity, and implementing programs designed to improve computer literacy for both teachers and students in computer age.

The adoption of innovations in education offers the educational institutions the opportunity of making improvements in the methods of teaching. This is because it is when innovations are widely adopted that the reforms desired in the educational sector will be achieved. It is generally accepted that, any move in education to accommodate new knowledge, remove obsolete ones and adopt multidisciplinary orientation is likely to be an innovation in education (Udu, 2018). The current innovation is the use of Information and Communication Technology (ICT) resources.

Information communication technology (ICT) can be defined as the study and the use of computers, microelectronic devices for storing and transferring of information. It can also mean the development, design, study, implementation and management of computer related information (Nwanyanwu, 1999). According to Nwana (2008 & 2012), ICT is the science of information processing which deals with the use of computers and other electronic devices to collect, process, store, retrieve and transmit or disseminate information to any part of the world. Across disciplines, technology offer unique opportunities to teachers to research, create, present and communicate effectively. ICT offers a new way to reach out to the world. ICT provides opportunity for the innovative teaching and ideas that the teacher could use for immediate feedback and offer students opportunity to get an alternative answer based on the feedback given to them.

The Federal Government of Nigeria in the National Policy on Education (FRN, 2014) is mindful of the importance of Information and Communication Technology (ICT) in the world of today hence, its integration in the school curriculum at all levels of education in the country. The document states that government will provide the necessary ICT infrastructures and training needed in the secondary schools. However, visits of the researcher to a number of Colleges of Education in the area of study and indeed schools in other areas showed that there is no significant sign that this lofty government policy has been implemented in a country that prides education as its' biggest industry. The study therefore sought to examine the level of availability of ICT resources and their actual use in teaching and learning situation. New innovative technologies when adopted and

Integrated in teaching and learning of political science courses will greatly influence a better understanding of the structures, and an easy grasp of the relationship between politics and state (Eilks and Byers, 2009).

Despite the fact that Information Communication Technology (ICT) has aroused controversies from its adherents and opponents, it has continued to be looked at, from the perspective of classroom teaching-learning process as an effective innovation. Our society today is reliant on technology for so many things namely: e-commerce, e-banking, e-taxation, e-bills payment, e-election using bevas machines, e-research, social media, e-school admission, e-registration and e-examination among others. It stands to reason that as political science courses prepare students to be productive members of society using ICT resources, educational institutions should pay more attention than ever to utilization of information communication technologies. This study examined the essence of ICT applications in teaching political science, instructional improvements related to the use of ICT in political science, the objectives of ICT implementations in our educational system, the causes of low ICT application in teaching political science education courses and finally the place of ICT in solving the problems of teaching and learning of political science. Innovative technologies are the new electronic technologies used for information processing, storage and retrieval .The following are the aims and objectives of ICT applications in education according to Aduwa-Ogiegbean and Iyamu, (2005:7*):*

> *to implement the principle of life-long learning/education; to increase a variety of educational services and medium/method; to promote equal opportunities to obtain education and information; to develop a system of collecting and disseminating educational information; to promote technology literacy of all citizens especially for students; to develop distance education with national contents; to promote the culture of learning at school through the development of learning skills, expansion of optional education, and open source of education; and to support schools in sharing experiences and information with others.*

Political science lecturers in colleges of education can use ICT in lecture delivery to facilitate the process of learning for the students. ICT could also be utilized to stimulate economic, social, political and scientific issues or problems of interest to political science courses for improved performance. To build bridges between the learning engagements for students through classroom lectures and their individual study outside of classroom put together, all of the innovative technologies are believed to support teaching and learning, and similarly help students to engage deeply with the instructional content (Mahaffy, 2014). Hence, this study sought to examine the current situation in the application of these new technologies for teaching and learning in the colleges of education in Enugu state. Examining lecturers' application of innovative technologies in teaching is to enable Nigerian school system produce world class graduates at all levels of the education system that could compete favourably with graduates of other countries of the world in the labour market and other spheres of life. This study was significant and timely since government

and other stake-holders have made efforts at procuring innovative technologies for use in teaching and learning in these colleges of education. Thus, the problem of the study put in question form is 'what are the innovative technologies lecturers apply in teaching and assessment of political science courses in colleges of Education in Enugu State? The study also examined the challenges associated with the application of the identified innovative technologies in teaching and assessment of political science courses in the colleges of Education in Enugu State.

Purpose of the Study

The general purpose of this study is to ascertain the innovative technologies applied in teaching and assessment of political science courses in colleges of Education in Enugu State. Specifically, the study intends to identify the:

1. Innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State.
2. Challenges in the application of innovative technologies in teaching and assessment of political science courses in Colleges of Education in Enugu State.
3. Ways to improve the application of innovative technologies in teaching and assessment of political science courses.

Scope of the study

The study was delimited to the application of innovative technologies for teaching and assessment of political science courses in colleges of Education in Enugu state. The population scope of the study comprised all the political science Education lecturers in the colleges of Education. The area scope of the study is Enugu State of Nigeria.

Research Questions:

The following research questions guided the study.

1. What are the innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State?
2. What are the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State?
3. What are the ways to improve the application of innovative technologies in teaching and assessment of political science courses in Colleges of Education in Enugu State?

Method

The research design for this study is descriptive survey. This is because a group of respondents could be studied by collecting and analyzing of data collected from a few that will represent the entire population (Nworgu. 2015). This is the most appropriate for the purpose of this study because it aims at collecting data on and describing the data collected in a systematic manner.

The area of study of this study is Enugu State. The state hosts four Colleges of Education namely, Federal College of Education Eha-Amufu; Enugu State College of Education

Technical (ENCET) Enugu; College of Education, Nsukka and Our Saviour Institution of Science, Arts and Technology (OSISATECH), Enugu. The area is well known as an academic environment because of the large number of tertiary institutions most of which offer political science courses.

The population of this study (410) comprised of 68 lecturers and 342 students of Political Science Education in Enugu State Colleges of Education. The sample for the study is 84 respondents made up of 24 lecturers and 60 students selected through the proportionate stratified sampling technique.

The instrument that was used for data collection in this study is a questionnaire titled, "Questionnaire on Application of Innovative Technologies in Teaching and Assessment of Political Science Courses (QAITTAPSC)" in the Colleges of Education in Enugu State. The Questionnaire consists of two sections; section A and section B. Section A is the personal information of the respondents. Section B consist of 3 clusters, cluster A, B and C which covers the three research questions raised to guide the study. It has four response modes viz: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

The instrument was given to three experts in Political Science Education for validation. Their comments, suggestions and corrections helped to improve the quality of the instrument. The reliability of the instrument was determined using Cronbach alpha. This was considered appropriate because the items in the instruments were not dichotomously scored. The internal consistency reliability yielded for the clusters. The instrument has an overall reliability co-efficient of 0.80 which indicated that the instrument is highly reliable for the study.

Results
The result is presented according to the research questions.

Research Question One: What are the innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State?

Table 1: Mean responses of respondents on the innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State.

S/N	ITEMS	SA 4	A 3	D 2	SD 1	$\sum$FX	X	Decision
1.	Projectors.	24 96	20 60	10 20	6 6	60 182	3.0	Agreed
2.	Smart boards.	17 68	22 66	9 18	12 12	60	2.8	Agreed
3.	Laptops, tablets, phones.	20 80	19 57	14 28	7 7	60 172	2.9	Agreed

S/N	ITEMS	SA 4	A 3	D 2	SD 1	∑FX	X	Decision
4.	Voice synthesizer	15 60	20 69	14 28	11 11	60 168	2.6	Agreed
5.	Digital textbooks.	18 72	19 57	13 26	10 10	60 165	2.8	Agreed
6	Digital Libraries.	10 40	25 75	12 24	13 13	60 148	2.5	Agreed
7	Internet and e-mail	21 84	16 48	14 28	9 9	60 169	2.8	Agreed
	Grand Mean						**2.8**	**Agreed**

Data in table 1 shows the mean responses on the innovative technological devices employed in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. The respondents agreed with all the items as the items had a cluster mean ratings equal to and above 2.50. The grand mean rating was 2.8 which is also above the criterion mean. Based on this, the researchers concluded that the innovative technological devices employed had a positive significant impact in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. The mean score of 3.0 which was the highest mean rating score indicated that, the adoption of projectors in teaching and assessment of political science courses in Colleges of Education in Enugu State is of high importance.

Research Question Two
What are the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State?

Table 2: Mean responses of respondents on the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State.

S/N	ITEMS	SA 4	A 3	D 2	SD 1	∑FX	X	Decision
8.	Poor perception of Information Technologies (ITs) among teachers	22 88	20 60	16 34	2 2	60 184	3.1	Agreed
9.	Inadequate Information Technologies (IT) facilities in schools.	15 60	21 63	13 26	11 11	60 160	2.7	Agreed
10.	Frequent electricity interruption.	15 60	20 69	14 28	11 11	60 168	2.6	Agreed
11.	Inadequate Information Technologies (IT) manpower in the schools.	21 84	19 57	11 22	9 9	60 172	2.9	Agreed

12.	High cost of Information Technologies (IT) facilities.	18 72	19 57	13 26	10 10	60 165	2.8	Agreed
	Grand mean						**2.8**	**Agreed**

Data in table 2 shows the cluster mean responses on the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. All the items had a cluster mean ratings above 2.50. The grand mean rating was 2.8 which was also above the criterion mean. Based on this, the researchers concluded that; poor perception of ITs among teachers inadequate IT facilities in schools, frequent electricity interruption, Inadequate IT manpower in the schools and High cost of ITs facilities are the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. The mean score of 3.1 which was the highest mean rating score implies that, Poor perception of ITs among teachers was the greatest challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State.

Research Question Three　　What are the ways to improve the application of innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State?

Table 3: Mean responses of respondents on the ways to improve the application of innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State.

S/N	ITEMS	SA 4	A 3	D 2	SD 1	∑FX	X	Decision
13.	Steady Power Supply.	15 60	20 60	14 28	11 11	60 159	2.6	Agreed
14.	Computer education and regular assistance to the lecturers on the use of technologies in teaching and learning.	20 80	30 90	8 16	2 2	60 188	3.1	Agreed
15.	Proper funding by the school authorities.	23 92	12 36	10 20	15 15	60 162	2.7	Agreed
16.	Periodic training on the part of lecturers for effective use of innovative technology devices for teaching and learning.	17 68	21 63	13 26	9 9	60 166	2.8	Agreed
	Grand mean						**2.8**	**Agreed**

Data in table 3 shows the mean responses on the ways to improve the application of innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. The respondents agreed with all the items as they had cluster mean score above 2.50. The grand mean rating was 2.8 which is also above the criterion mean. Based on this, the researchers concluded that, the corresponding listed items that had mean scores of 2.5 and above were the major ways to improve the application of innovative technologies in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. The mean score of 3.1 which was the highest mean rating score entails that, computer education and regular assistance to the lecturers on the use of technologies in teaching and learning process is the best way to improve the application of innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State.

Summary of the Findings

Table 1: shows the cluster mean responses on the innovative technological devices employed in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. This indicates that; projectors, smart boards, laptops, tablets, phones, voice synthesizers enhancements/Sound system, digital textbooks, digital libraries, internet and e-mail are the innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State. The grand mean was 2.8. Based on this, the researchers concluded that the innovative technological devices employed had a positive significant impact in teaching and assessment of Political Science courses in Colleges of Education in Enugu State.

Table 2: showed the response on the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. From the questionnaire items 13, 14, 15, 16 and 17 with the mean score of 3.1, 2.7, 2.6, 2.9 and 2.8 respectively had a mean rating above 2.5. Based on this, the researchers concluded that; Poor perception of ITs among teachers inadequate IT facilities in schools, frequent electricity interruption, inadequate IT manpower in the schools and High cost of ITs facilities are the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State.

Table 3: showed the response on the ways to improve the application of innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. From the questionnaire items 18, 19, 20 and 21 with the mean score of 2.6, 3.1, 2.7 and 2.8 respectively had a mean rating above 2.5. Based on this, the researchers concluded that, the corresponding listed items that had mean scores of 2.5 and above were the major ways to improve the application of innovative technologies in teaching and assessment of Political Science courses in Colleges of Education in Enugu State.

Discussion of Findings

The main purpose of this study was to determine the innovative technologies applied in teaching and assessment of political science courses in colleges of Education in Enugu State. With the use of survey research method, at the end of the analysis, the following results were found:

The first research question was analyzed in table 1. The result showed that the innovative technological devices employed had a positive significant impact in teaching and assessment of Political Science courses in Colleges of Education in Enugu State. This finding implies that projectors, laptops, tablets, phones, voice synthesizer, digital textbooks, digital libraries internet and e-mail are the innovative technological devices employed in teaching and assessment of political science courses in Colleges of Education in Enugu State. This finding supported the work of Lau and Sim (2008) who stated that the advancement in the innovative technological devices namely: computer, internet and e-mail have aided and improved teaching and learning especially in the education system. The findings also agreed with Masters (2004) who reported that, technological resources such as desktop computers, laptops, tablets, smart phones, projectors and e-libraries have been useful for teaching and learning in an online environment. Again, the finding is in tandem with Nwana, Ofoegbu and Egbe (2017) who reported that e-learning facilities namely; digital library, multimedia projectors, internet facilities and ICT parks are being utilized to a high extent in colleges of education in Anambra State, Nigeria.

The second research question was analyzed in table 2. The result showed that there are challenges militating against the teaching and assessment of Political Science courses in Colleges of Education in Enugu State. This implies that the teaching and assessment of Political Science courses in Colleges of Education is not without hindrances as the subject has not been fully taught both in theoretical and practical dimensions. This finding agreed with the work of Chioke and Ige (2016), who reported that lack of qualified or skilled professionals; lack of conducive atmosphere for teaching and learning of political science education; poor funding of school system; and laxity in encouraging modern political science teaching techniques were the major challenges facing the teaching and assessment of Political Science courses in Colleges of Education in Nigeria.

The third research question was analyzed in table 3. The result showed that poor perception of ITs among teachers, inadequate ICT facilities in schools, frequent electricity interruption, inadequate IT manpower in the schools and High cost of IT facilities are the challenges in applying innovative technologies in teaching and assessment of political science courses in colleges of Education in Enugu State. This finding is similar to Amedu (2014) who found that e-learning facilities viz: electronic board and internet connected – computers among others are not available for the teaching of home-economics. Again, the finding is in line with Agboola (2016) who reported that ICT resources are not available for teaching and learning in many schools. The study found that government-related factors, school-related factors and lecturer-related factors are some of the challenges in the

implementation of innovative technologies in teaching Political Science Education curriculum in colleges of Education in Enugu State, Nigeria.

Conclusion

The effective use of innovative technologies in the implementation, teaching and assessment of Political Science Education courses in the institutions of higher learning cannot be overemphasized. Institutions of Higher Learning were the worst hit in the period of the covid-19 pandemic especially the Colleges of Education in Enugu State, Nigeria. That was the need for this study to establish the challenges and solutions to the implementation of the innovative technologies devices. The findings of the study revealed myriads of challenges which are government-related, school as well as lecturer-related factors. However, full support of the lecturer in terms of educational resources and in-service training in ICT were the keys to the successful implementation of the curriculum. Necessity has birthed the call for innovation and inventiveness in education. This presupposes the introduction of novelty into existence with the aim of solving a particular problem. It is therefore of paramount importance that Nigerian colleges of education benefit from these instructional innovations so as to ensure the attainment of those devices, qualitative teaching and learning experiences across the curricular. To achieve remarkable transformation in the teaching and assessment of Political Science Education courses, the innovative desires demand infusion and copious implementation, adhering meticulously to the tenets and rungs of the projected trends without withering and inkling towards dilly-dallying. Moreover, innovation should be construed as bits and pieces of growth and development of the teaching subject under discussion and in the various secondary schools in the country.

Recommendations

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

1. The government and non-governmental bodies should ensure that basic ICT resources namely: desktop computers, laptops, iPads and other mobile devices are made available and accessible to all lecturers and students in education through subsidies and loan facilities.
2. The Colleges of Education management through the ICT department should ensure that broadband facilities are readily available in the college campuses to enhance the use of e-learning platforms for teaching and learning.
3. Government should ensure adequate funding of tertiary education in general and Political Science Education Departments in particular for effective teaching and learning.
4. The government should carryout comprehensive infrastructural review and upgrade within tertiary institutions for effective teaching and learning.
5. Lecturers and students of Political Science Education should be exposed to regular practical training in ICT use as a means of improving their proficiency in manipulation of innovative educational technologies.

References

Aduwa-Ogiegbean, S. E., & Iyamu, E. O. S. (2005). Using information and communication technology in secondary schools in Nigeria. *Educational Technology & Society,* 8 (1), 104-112.

Agboola, B.M. (2016). Resources availability and implementation of universal basic education (UBE) programme in Ikot-Abasi education zone of Akwa-ibom state, Nigeria. *Sky Journal of Educational Research,* 4(6), 53-59.

Amedu, S.O. (2014). Assessment of the use of e-learning facilities by home-economics teachers in Delta State. *Journal of Educational Practice,* 5(16), 207-212.

Eilks, I. & Byers, B. (2009). Innovative methods of teaching and learning chemistry in High Education. RSC Publishing, 978-1-84 755-958-6.

Federal Republic of Nigeria (FRN, 2014). *National Policy on Education. Lagos*: NERDC press.

Lau, B. & Sim, C. (2008). Exploring the extent of ICT adoption among secondary teachers in malaysia. *International Journal of Computing and ICT Research,* 11(11), 19-26.

Mahaffy, P. G. (2014). Interactive simulations and other visualization in new technologies. *https:/pubs.acc.org.*

Masters, K. (2004). Encouraging equitable online participation through curriculum articulation. *Journal of Computers and Education,* 2(1), 319-332.

McDonnell, C. (2013). Applying technology to enhance chemistry education: chemistry is All around us. Network Conference Initiatives in Chemistry Teaching Training 29th November, 2013, Canada.

Nwana, S.E. (2008). Information and Communication Technology (ICT) in education: The place of teleconferencing. *Journal of Adult Education Studies (JAES),* 3(1), 86-91.

Nwana, S.E. (2012). Challenges in the application of e-learning by secondary school teachers in Anambra State, Nigeria. *African Journal of Teacher Education (AJOTE),* 2(1), 1-9

Nwana, S.E., Ofoegbu, T.O; & Egbe, C.I. (2017). Assessment of the use of e-learning resources by lecturers in colleges of education in Anambra State, Nigeria. *Advances in Social Sciences Research Journal,* 4(18), 97-101.

Nwanyawu, O. J. (1999). Current trends in social studies instruction. Abeokuta: Goad Educational Publishers.

Nworgu, B.G. (2015). Educational research: basic issues and methodology. Nsukka: University Trust Publishers.

Reachlvy, (2017). TBI Blogs: 7 Brilliant innovations that teachers can use to make their classrooms more engaging. Retrieved on December, 2018 from *https://www.thebetterindia.com/101112/innovations-introduced-enhanceeducation-system*

Ubogu, F.N. (2013): Trends in digital library services in academic libraries in South Africa: Library portals and ETD System. Conference Proceedings of 44th Annual National Conference of NLA held in Abuja, Nigeria.

Udu, D. A. (2018). Innovative practices in science Education: A Panacea for improving secondary school students' academic achievements in science subjects in Nigeria. *Global Journal of Educational Research,* 17: ISSN 1596-6224.