

ICT INNOVATION IN EDUCATION AND EFFECTIVE MANAGEMENT OF SECONDARY SCHOOLS IN OGUN STATE

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Abstract

The study assessed information and communication technology (ICT) innovation in education and secondary school effective management in Ogun State. It was guided by three research questions. A descriptive survey research design was used in this study. A total of 145 teachers from public secondary school in Ijebu-Ode local government were selected as sample size. Stratified random sampling technique was adopted in selecting the sample size and this stratification based on gender (male and female teachers). A self-researcher designed instrument titled Innovation and Effective School Management Questionnaire (IESMQ) was used for data collection with 0.91 as reliability coefficient. Descriptive statistics of mean and standard deviation were used for answering research questions. The findings of the study revealed that Projectors, Blogging, Kahoot, Computer, Digital camera, Presentation software, Internet, Google classroom, Trello and Microsoft team were among ICT innovation in education needed for secondary school effective management in Ogun State. Teachers' does not really used ICT innovation in education for secondary school effective management in Ogun State. It was 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 teachers and students in through subsidies.

Keywords: ICT Innovation, Secondary School, Effective Management

Introduction

A secondary school or high school is an institution that provides secondary education and also usually included the building where this takes place. Secondary school also referred to the schooling offered after a primary school, and before higher, optional education. Management is a comprehensive effort to direct, guide and integrates human striving which is focused towards some specific ends or aims. It involved planning activities which are aim at fulfillment of the goals of a particular organization. In educational organization, the goals are teaching and learning. Effective management will then

refer to the extent to which both human and material resources in such an organization are effectively coordinated for the attainment of these goals of teaching and learning (Elujekwute, Habib & Ogundipe, 2021). However, it is those who actually coordinated the resources that can be referred to as educational managers, and what they do as management. Dare (2019) defined management as the careful and systematic utilization of human, material and financial resources for attainment of specific objectives of a given organization. Furthermore, Sanusi (2021) also defined management as intelligent arrangement and use of

scarce, materials and capital resources for the accomplishment of the objectives of any organized system. From the definition of Management highlighted above, it can be deduced that resources are very scarce and therefore, the limited ones available should be judiciously utilized and geared towards the attainment of organizational goals. Again, it could be said that in any educational organization, the major objective is to achieve educational goals. It is on this note that today secondary school need innovation in terms of equipment for carrying out their daily activities for effective management. Innovation such as Information Communication and Technology (ICT).

Information Communication Technology (ICT) has greatly affected the Nigerian educational system generally. No meaningful progress will be made in educational sector without adjusting to scientific innovations and discoveries. The National Policy on Education (2004) emphasized that the philosophy of education is to be geared towards self-realization of national unity, as well as towards social, cultural, economic, political, scientific and technological progress. But in the research conducted by Nworgu (2015), who discovered that education sector is trailing behind other sectors such as industrial, business, aviation and administration. This may be attributed to the fact that substantial numbers of our schools still lack ICT resource infrastructure while our teachers lack the necessary skills required for the application in our classrooms. Information technology is an organized combination of people, hardware, communication networks and data resources that collects, transfers and disseminates information in an organization. Information dissemination is very important in schools because, it is

one of the major means by which members work together. Information is any fact or set of specific decisions among alternative courses of action. The information potential of data is enhanced by refinements, which involves selection, processing, storing and reorganization of data into a useable form and transmission to the appropriate end users (Sanusi, 2021).

Information Technology occupied an important position in schools. This is because it made for smooth planning, directing, organizing, staffing and controlling within the educational organization. The ultimate aim of Information Communication Technology is therefore to develop a viable system to maximize the effective use of modern data approach to institutions management practices. It also aims at assisting management, and indeed operating personnel to produce timely and accurate information. It also answers the increasing needs of secondary schools as it allows the teachers to have access to all relevant organizational information which enables them to make quick decisions within a reasonable length of time. ICT involves the use of combination of technologies in generating information. These technologies could be referred to as ICT facilities, some of which are Computer, Electronic Mail (e-mail), Internet, World Wide Web (www), Electronic Notice Boards, Teleconferencing, Telephone, Close Circuit Television, Cable Television among others (Elujekwute, Habib & Ogundipe, 2021). The importance of ICT in secondary school cannot be overemphasized as it facilitates the development of education in various ways. It assisted the teachers to take students beyond classroom limits by creating virtual environments to

experiment and explore. Effective instructional delivery by the teachers is guaranteed as ICT assists them with effective and efficient tools to take care of the individual differences of the students. Moreover, it provides teachers opportunities for cooperation with colleagues through networking and Internet services. This will facilitate cross fertilization of ideas and improved the teaching skills of the teachers. According to Al-Ansari (2020), with the Internet, it is possible to access learning materials anywhere in the world

On the other hand, the use of educational application software assisted the students to work easily, make their writing easier and make them learn faster. ICT offers educational resources such as software packages and web pages, which present a fresh opportunity for teachers and students to maximize their efforts in acquisition of new skills. ICT increased the flexibility of delivery of education-so that learners can access knowledge anytime and from anywhere. It can influence the way students are taught and how they learn as now the processes are learner driven and not by teachers. This in turn would better prepare the learners for lifelong learning as well as to improve the quality of learning. In concert with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs (Moore & Kearsley, 2020). Students are starting to appreciate the capability to undertake education anywhere anytime and anyplace. One of the most vital contributions of ICT in the field of education is- Easy Access to Learning. With the help of ICT students can now browse through e-books, examination papers, previous year papers can also have an easy access to resource persons,

mentors, experts, researchers, professionals, and peers-all over the world. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments. According to Olorunsola (2017), wider availability of best practices and best course material in education, which can be shared by means of ICT, can foster better teaching. ICT also allows the academic institutions to reach disadvantaged groups and new international educational markets, as well as learning at any time, teachers are also finding the capabilities of teaching at any time to be opportunistic and able to be used to advantage.

Statement of the Problem

The researchers were of the opinions that traditional educational environments do not seem to be suitable for preparing learners to function or be productive in the work places of today's society. The use of technology and how technology can support teaching and learning in secondary schools in Nigeria have become essential in today's world. The functions of teachers in education process is of paramount interest especially when considering teaching and learning process as the acquisition of knowledge and skills by individuals to enable him become useful member of the society. However, availability of ICT innovation in public secondary school have been put into critical scrutiny by the stakeholders in education. Even, the management of school don't seem to be adopting ICT innovation in education for school routine activities and efficiency towards effective management. Based on the aforementioned challenges, it is expedient for the researchers to investigate the assessment of ICT

innovation in education and secondary school effective management in Ogun State.

Objectives of the Study

The main objective of the study was an assessment of information and communication technology (ICT) innovation in education and secondary school effective management in Ogun State. Specifically, the study examined the:

1. ICT innovation in education needed for secondary school effective management in Ogun State.
2. Extent to which teachers' used ICT innovation in education for secondary school effective management in Ogun State.
3. Trending issues facing secondary school effective management in Ogun State.

Research Questions

The following research questions guided this study:

1. What are the ICT innovation in education needed for secondary school effective management in Ogun State?
2. To what extent teachers' used ICT innovation in education for secondary school effective management in Ogun State?
3. What are the trending issues facing secondary school effective management in Ogun State?

Theoretical Framework

Policy Implementation Theory

The theoretical framework for this research was the Policy Implementation Theory. Eugene Bardach put out the hypothesis in 1977. The Policy Implementation Theory offers a thorough framework for understanding why ICT need to be

incorporated into education. This theory focuses on how policies are implemented, recognizing the obstacles and difficulties that could appear during implementation. According to the Policy Implementation Theory, attitudes and beliefs are important variables influencing the implementation of policies. Teachers' opinions, attitudes, and convictions may greatly influence how committed they are to ICT usage in their teaching subject to the availability. Teachers' attitudes and support are crucial for a policy to be implemented successfully. Teachers may be less motivated to actively engage if they have unfavorable opinions about the policy or doubt its efficacy, which might pose problems for its implementation. The Theory noted that resources and capacity are crucial for successful policy implementation. The number of funds provided to encourage female involvement in sectors connected to science and technology may have an impact on how successful the program is. For instance, the effect of the policy may be reduced if insufficient money or training is available to help female students. Additionally, a key component of effective implementation is the ability of schools to foster an atmosphere that is welcoming and encouraging for female students. The theory also highlights a number of issues that may prevent a policy from being implemented successfully. These may consist of:

1. A lack of clarity in the goals and directives of the policy, which causes uncertainty among stakeholders.
2. A lack of financing and resources to support policy efforts.
3. Opposition from educators, learners, or parents who could see the regulation as onerous or unnecessary.

4. Insufficient opportunities for teachers to pursue professional development and execute the policy effectively.
5. Administrative restrictions or roadblocks that impede the policy's advance.

Methodology

A descriptive research design of survey typed was used for the study. The population of this study comprised 476 teachers in public secondary school in Ijebu-Ode local government area of Ogun State. A total of 145 teachers from public secondary school in Ijebu-Ode local government were selected as sample size. Stratified random sampling technique was adopted in selecting the sample size and this stratification based on gender (male and female teachers). A self-researcher-designed instruments titled ICT Innovation in Education and Effective School Management Questionnaire (IESMQ) was used for this study. This questionnaire was used for the collection of data from teachers on ICT innovation needed for secondary school effective management, extent to which teachers' used ICT innovation for secondary school effective management and the trending issues facing secondary school effective management. The questionnaire requested responses on a four (4) – point scale format which is a modification of 5-point Likert scale. The responses rating scales are as follows: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). To ensure the face and content validity of the instrument (IESMQ), copies of the instruments was given to an expert in the Department of Educational Technology, Tai Solarin University of Education (TASUED) and later to the project supervisor for content correction after all the identified corrections have been

affected, the final drafts was used to gather the required data for the study. Reliability test of the instrument (IESMQ) was done using a test-retest method. In this case, copies of the instruments (IESMQ) was administered twice on 15 teachers in Ijebu-North local government area that are not part of the sample size within a week interval. The collected data from the dual administration of the instruments were compared using Pearson moment reliability statistic. Their respective reliability estimates were reported in order to ascertain the level of reliability coefficients as 0.91 and 0.89. Primary method of data collection was adopted in this study. Primary method includes the usage of questionnaire to collect data needed data for the study. Descriptive statistics of mean and standard deviation were used for answering research questions.

Results and Discussion of Findings

Research Question 1: What are the ICT innovation in education needed for secondary school effective management in Ogun State?

Table 1: Descriptive statistics on the ICT innovation in education needed for secondary school effective management in Ogun State

Items	Mean	SD	Remarks
Projectors is needed	2.67	.785	Agreed
Blogging is needed	2.89	.666	Agreed

Kahoot is needed	2.78	.701	Agreed
Computer is needed	2.61	.802	Agreed
Digital camera is needed	2.55	.725	Agreed
Presentation software is needed	2.84	.682	Agreed
Internet is needed	2.74	.677	Agreed
Google classroom is needed	2.88	.762	Agreed
Trello if needed	2.99	.673	Agreed
Microsoft team is needed	2.83	.783	Agreed
Cluster Mean	2.78		

Source: Field Survey, 2025

Table 1 revealed that cluster mean was 2.78 and the bench mark of

2.50. Since $2.78 > 2.50$, this implied that Projectors, Blogging, Kahoot, Computer, Digital camera, Presentation software, Internet, Google classroom, Trello and Microsoft team were among ICT innovation in education needed for secondary school effective management in Ogun State.

Research Question 2: To what extent teachers' used ICT innovation in education for secondary school effective management in Ogun State?

Table 2: Descriptive statistics on the extent teachers' used ICT innovation in education for secondary school effective management in Ogun State

Items	Mean	SD	Remarks
To what extent do you used projectors for teaching?	1.78	.897	Low Extent
To what extent do you used Blogging for teaching?	2.15	.824	Low Extent
To what extent do you used Kahoot for teaching?	2.23	.902	Low Extent
To what extent do you used Computer for teaching?	2.88	.773	Medium Extent
To what extent do you used Digital camera for teaching?	2.51	.804	Medium Extent
To what extent do you used Presentation software for teaching?	2.42	.776	Low Extent
To what extent do you used Internet for teaching?	2.39	.874	Low Extent
To what extent do you used Google classroom for teaching?	2.46	.905	Low Extent
To what extent do you used Trello for teaching?	2.48	.934	Low Extent
To what extent do you used Microsoft team for teaching?	2.33	.881	Low Extent
Cluster Mean	2.36		

Source: Field Survey, 2025

Table 2 revealed that cluster mean was 2.36 and bench mark of 2.50. Since, $2.36 > 2.50$, this implied that teachers' does not really used ICT innovation in education for secondary school effective management in Ogun State.

Research Question 3: What are the trending issues facing secondary school effective management in Ogun State?

Table 3: Descriptive statistics on the trending issues facing secondary school effective management in Ogun State

Items	Mean	SD	Remarks
Students Registration.	2.71	.902	Agreed
Managing Courses	3.11	.899	Agreed
Teacher Evaluation	3.17	.803	Agreed
Classroom Size.	2.99	.783	Agreed
Classroom Management	2.65	.700	Agreed
Poor Communication	2.81	.823	Agreed
Cluster Mean	2.91		

Source: Field Survey, 2023

Table 3 revealed that cluster mean was 2.91 and bench mark of 2.50. Since $2.91 > 2.50$, this implied that students' registration, managing courses, teacher evaluation, classroom size, classroom management and poor communication were among the

trending issues facing secondary school effective management in Ogun State.

Discussion of Findings

The findings of the study revealed that Projectors, Blogging, Kahoot, Computer, Digital camera, Presentation software, Internet, Google classroom, Trello and Microsoft team were among ICT innovation in education needed for secondary school effective management in Ogun State. Teachers' does not really used ICT innovation in education for secondary school effective management in Ogun State. Students' registration, managing courses, teacher evaluation, classroom size, classroom management and poor communication were among the trending issues facing secondary school effective management in Ogun State. These findings correlate with Ugwuda and Ugwuda (2023) revealed that the innovative technological devices such as projectors, smart boards, laptops, tablet computers, phones, voice synthesizers, 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. Elujekwute, Habib and Ogundipe (2021) revealed that ICT facilities are lacking in schools and teachers and students are to a little extent exposed to the use of ICT. Moreover, the study also revealed that perceived benefits of using ICT facilities in secondary schools in North-Central

States of Nigeria. The findings also corroborate with Ahmed, Datti and Abdulkadir (2021) showed that 26% of the teachers are using ICT applications for teaching and learning, while 74% of the teachers are not using ICT tools for teaching and learning. On the other hand, 34% of the students are using ICT applications for teaching and learning, while 66% of the students are not using ICT tools for teaching and learning. Ismaila, Ismaila, Olajide and Akinrinade (2021) revealed that there are no enough ICT facilities for teaching and learning. Also, the results of ANOVA showed that (i) there are no enough ICT facilities for teaching and learning; (ii) the students face challenges with the use of ICT facilities (iii) that the use of ICT facilities has effects on teaching and learning of the students and (iv) that teachers do have knowledge on the use of ICT facilities in the public high schools in Osun state. Onwukwe, Attamah, Ibrahim and Emmanuel (2020) found out that most schools have ICT facilities but they are underutilized by the teachers and students. This is as a result of over population in most schools and limited ICT facilities available. Oguche and Haruna (2020) revealed that computer is used for innovative assessment to a little extent, the internet is also used for online assessment to a little extent, etc. Osaheni, Odaro-Ekhaguebo and Akpoduado (2018) show that majority of the teachers in the staff school do not use Information and Communication Technology as pedagogy for teaching. The teachers also have negative attitude towards Information and Communication Technology. Olokooba, Okunloye, Abdulsalam and Balogun (2017) showed that many challenges such as unavailability of computer laboratory, lack of instructional software, the inefficiency of

teachers' technical knowledge, irregular power supply and poor maintenance of computer systems are the constraints in use of ICT facilities by social science teachers. Aworanti (2016) found that poor computer literacy level among teachers and students, dearth of ICT skilled personnel, inadequate ICT infrastructures and lack of fund among others are the major challenges of ICT in Nigeria educational assessment system.

Conclusion

Having assessed of information and communication technology (ICT) innovation in education and secondary school effective management in Ogun State, the following conclusions were drawn based on the findings of the study that:

1. Projectors, Blogging, Kahoot, Computer, Digital camera, Presentation software, Internet, Google classroom, Trello and Microsoft team were among ICT innovation in education needed for secondary school effective management in Ogun State.
2. Teachers' does not really used ICT innovation in education for secondary school effective management in Ogun State.
3. Students' registration, managing courses, teacher evaluation, classroom size, classroom management and poor communication were among the trending issues facing secondary school effective management in Ogun State.

Recommendations

Based on the findings of the study, the following recommendations are provided:

1. 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 teachers and students in through subsidies and loan facilities.

2. Provision of ICT facilities, the public high schools should be equipped with adequate ICT facilities (not only computers) that cut across all levels of high school in order to enhance modern methods of impacting knowledge to students.
3. Government should provide mass and functional ICT facilities that are accessible by teachers and students and the price of ICT facilities should be subsidized so as to make it easier for its acquisition.
4. Government should revisit the curriculum and incorporate the use of ICT facilities, among others.
5. The study also recommended provision of constant power supply, adequate security etc. as measures to encourage the use of ICT for innovative assessment in secondary schools in Ogun State-Nigeria.
6. The study recommends that Government should be committed to full implementation of ICT in secondary schools by way formulating policies and implementing the existing one if any with all sincerity.
7. The study therefore recommends that Government should be committed to full implementation of ICT in secondary schools by providing the necessary infrastructure, equipment; formulate policies and implementing the existing one if any.

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