

## Evaluation of the Extent School Access Programme (SAP) Facilitates Teacher's Application of ICT in Teaching their Various Subjects in South-East Nigeria

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**Abstract:** The major aim of this study was to evaluate the extent to which the School Access Programme (SAP) facilitated teacher's application of ICT in teaching and learning of their various subjects. One research question was formulated and one hypothesis tested at 0.05 level of significance. The population of the study was 4,141 teachers derived from 183 secondary schools that benefited from the school access programme in South-East Nigeria in 2017/2018 session. A 7 item observation schedule was the instrument used for the collection of the data of the study. Simple random, stratified proportion and cluster random sampling techniques are the sampling techniques used in the study. Mean, standard deviation and student t-test were used for data analysis of the study. It was found that the School Access Programme (SAP) facilitated teacher's application of ICT at a low extent.

**Key words:** Evaluation, programme evaluation, podcast, satellite communication, collection, stratified

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### INTRODUCTION

Teachers all over the world are faced with the challenges of transferring appropriate and adequate knowledge and skills to their students. The teaching process is diversified and dynamic and it is only experienced and skilful teachers with sound knowledge of various teaching methods and as well as the capability of application of various teaching devices that can communicate effectively with their students. The knowledge and skills needed by students continue to change with the dynamic nature of the society. The societal needs and aspirations change over time and in relation to the demand of the labour force. The labour force in the present dispensation requires force application of ICT. The application of ICT was not widely in use many years ago as it is in the present world. ICT is widely used in engineering departments, hospitals, military and police sector and education agencies. However, medical doctors, engineers, military and police officers apply ICT in the discharge of their duties. The level of production and the speed at which such production is carried out is higher and easier. This means ICT is making dynamic changes in the society. It is influencing every aspect of human life which the teaching-learning process is inclusive. Application of ICT in the teaching-learning process has changed the total scenario of the teaching-learning process. ICTs are making a major

impact on the teaching approaches and ways students are learning (Sudipta, 2015). The teaching-learning process is no longer limited within the boundaries of classrooms. The educational institution worldwide are integrating ICT with the teaching-learning process to provide knowledge and skills potential enough to enable students to meet up with the challenges of educational environments. Jeelani affirmed that "it is only through education and the integration of ICT in the teaching-learning process that teachers can teach students to be participants in the growth process in this era of rapid change". The application of ICT in the teaching-learning process will enable the students to have self-paced learning through various tools such as assignments, class works and computers. The application of ICT in the teaching-learning process will make the teaching-learning process more productive and meaningful. ICT will help to facilitate communication between teachers and students and such effective communication keeps students updated in knowledge and skills enhance teacher's capability and ability. Application of ICT in the teaching-learning process creates live contact between teachers and students through an e-mail chat session. Application of ICT in the teaching-learning process promotes active learning, sharing of ideas discussions and also provides immediate feedback. The activities involved in ICT application in teaching-learning process paced learning and allows effective mapping learning pathways. ICT can store,

retrieve and process e-content both fast and accurate. ICT represents one of the current application of technology towards the teaching-learning process. According to UNESCO, ICT is a scientific, technological and engineering discipline and management techniques used in handling information in application and association with social, economic and education agencies. ICT-based teaching and learning encourage several innovations in teacher education. Appropriate use of ICT in teaching and learning can transform the whole teaching-learning process leading to a shift in both content and teaching methodology. ICT also has the potential to transcend the barrier of time. This means that the role of ICT can make education to be democratic and by this education services will be made available to students in the remote part of the world. This integration of ICT in education will make education to be more affordable and accessible. Furthermore, the integration of ICT in the teaching-learning process will make the learner to generate ideas, share knowledge in the performance of a given task and this will allow them to develop their capabilities, skills and potentials. In an ICT based instruction teachers role will be more challenging dynamic and different from the traditional classroom teaching. In the new role, the teacher will be like a director or facilitator because it is the ICT that enhances the quality of teaching and learning by arousing inquiry, curiosity and exploration. According to Clark (2006), ICT will allow the individual to engage in self-paced learning which takes care of learners ability and attitude. Application of ICT in instruction will also allow students to learn at their strength and ability.

Also, one of the major advantages of the use of ICT in the classroom has been to prepare students for the future workforce. These students will be equipped with recent ICT-skills that will enable the students to perform at the optional level at the workforce (Mathur, 2005). The application of ICT in instruction will help students to be familiar with online networking. Students and teachers will be familiar with the role of e-Moderator, e-Learning, websites, Google, Yahoo, Gmail and Wikipedia. The modern concepts of ICT will help students to cope with the challenges of digital information and technology through the development of digital literacy resources (Nasrin, 2006). ICT aided learning is not in the application of ICT competency in teaching. The learning process, powerpoints, animation and graphics can be used to enhance the learning of content and doing, so will explain complex processes of the instruction. This will enable students to understand the key concepts of the topic of the lesson. However, the application of ic requires the use of emerging learning technologies as described.

**Blog:** A blog (weblog) is a type of website maintained by an individual with regular entries of commentary,

documentation of activities or events, graphics and video. Most blogs are interactive allowing people to leave comments. The ability of readers to leave a comment in an interactive format is an essential part of a blog. Most blogs are textual while others focus on photographs, videos, music and audio.

**Integrated learning module:** The integrated learning module is a focused class delivered over internet connectivity. The course content is integrated and comprehensive thereby creating a unique perspective on course themes without the repetitive requirements of separate stand-alone courses. The subject in focus and the language used to enhance the understanding of the subject are integrated. Blogs can be used to inform students of classroom requirements, post, handouts, notices, home works and assignments or acts as a question and answer board. It provides conversation between mates in distance places and it also provides channels of information and knowledge from anywhere anytime (Chaka, 2008).

**Podcast:** This is a series of media files (either audio or video) that are released and downloaded through web syndication. The mode delivery differentiates podcasting from other means of accessing media files over the internet. A list of all the audio or video files currently associated with a given series and kept centrally on the distribution server as a web feed and the listener or viewer cannot access the files except with special client application known as a podcaster which can access this web feed.

**Wikis:** Wikis is an online collaborative writing tool. A wiki is a collaborative web space where anyone can add and edit the content that has already been published. Wikis are designed to help group published. Wikis are designed to help group collaborative, share and build online content and it is useful for learners who are separated by time and space Nasrin (2006).

**Satellite communication:** The first satellite communication called Early Bird was launched in 1962. Two big satellites-Intelsat and Intersputnik started operating in 1965 and 1971, respectively.

**Video conferencing:** Video conferencing also called teleconferencing is a two-way communication system. It is the use of television (vision), sound technology as well as computers to enable people in different locations to see, hear and talk with one another. It can also enable people to meet in a conference room or booths with equipped television designed for that purpose.

**World Wide Web:** The World Wide Web known as WWW is one of the internet resources developed to help publish organize and provide access to information on the

internet. The web was first developed in 1989 by Tim Berners Lee while working in European particle physics laboratory in Switzerland.

**RFID technology:** Radio frequency identification is one of the wireless means of communication which uses electromagnetic fields to transfer data contained in tags. The tag has to be tracked down and identified and such tags contain electronically stored information.

**Web 2.0:** The term Web 2.0 was coined by Tim O. Web 2.0 describes World Wide Web sites that use technology beyond the static pages of earlier web sites. Web 2.0 does not replace www but it is accumulative changes in the way web pages are made and used. It allows users to interact, collaborate and chat with each other synchronously and asynchronously.

**Computer-aided instruction:** Computer-aided instruction involves a set of programmed instruction packaged to facilitate the teaching-learning process. The computer-aided instruction is designed to develop certain skills among the students. The computer is used to engage students in a dialogue over the subject matter of the instruction. In addition, the computer is used to present the instruction, drill the key concepts for student's memorization and to practice the skills needed for the potential development of the students. In the process of delivery of the instruction with a computer, the teacher has the obligation of acting as a computer engineer, system operator and lesson writer (Ihebereme, 2008).

**Computer assisted learning:** This is the use of the computer to support the training of students. Computer-assisted learning covers a range of computer-based packages which aim at the provision of interactive instruction in any school subject and it predates the internet. Computer assisted learning could be sophisticated expensive and can take a wide scope unlike computer-aided instruction which is meant for a short period and narrow aspect of a subject matter of instruction (Iwiyi, 2007). LCD project Liquid Crystal Display is a type of video, images or data on a screen in the version of a slide projector. LCD portrays light from a metal lamp through a series of dichloric filters that separate light to three polysilicon panels (red, blue and green) component of the video signals. It is used to aid the teaching-learning process in the classroom for displaying images and chart (Onu, 2005).

**Powerpoint presentation:** Powerpoint has become an integrated part of many instructional settings. Powerpoint is very useful in large classes and in courses that are geared towards information exchange. Powerpoint will make the classroom instruction to be more interactive and effective (Nwachukwu, 2004).

Furthermore, teachers all over the world are the managers of classroom activities. Classroom management includes appropriate handling of high technical equipment that facilitates the teaching-learning process. Teachers should be updated in both knowledge and skills to enable them to transfer appropriate skills and knowledge to students. With the acquisition of required skills and knowledge by students, they can handle digital tools and resources which will help them to achieve a high academic standard. Teachers need to equip our students with ICT to enable them to meet emerging trends. We must empower our youths with the latest technology to tap the latest skills which will enable them to explore their hidden potentials. There is considerable hope that technology can expand and improve education in all levels with special reference to the design and content of instructional materials, classroom delivery, assessment and feedback. For effective application of ICT in teaching-learning process, both teachers and students are expected to be conversant and versatile with necessary ICT connectivity involved in the teaching. Also, apart from the teachers being sound and disposed to all the necessary ICT skills, there must be a formidable ICT platform obtainable in Nigerian secondary schools before the application of ICT skills could be carried out in the teaching and learning of various subjects in South-East Nigeria. The mandatory subjects taught in Nigerian secondary schools are English language, Christian religious studies, mathematics, biology, chemistry, physics, civic education and economics. English language and mathematics are compulsory for both sciences and arts students. The application of ICT is necessary to improve the social-economic development of the nation. In order to apply ICT effectively in the teaching-learning process of these subjects, the Federal Government of Nigeria, through the Universal service provision fund introduced the School Access Programme (SAP) by Anonymous (2007). School access programme is an ICT joint together established by Universal Service Provision Fund (USPF) to stimulate. ICT and software applications in Nigerian public secondary schools. The programme is established to assist both teachers and students to acquire ICT skills. The programme will help teachers to facilitate the application of ICT in the teaching and learning of their various subjects. The application of ICT in the teaching and learning process using the School Access Programme (SAP) as an ICT platform will make the teaching and learning process more interactive and effective, motivate students towards their lesson, help students to interact with teachers, peers and expert on various issues outside the classroom enable students to get information needed for their educational improvement quickly, help teachers to evaluate joint together progress and proficiency in certain skills, to remove the monotony of traditional classroom system, encourage contacts between students and networking tools, blogs, wikis, text messages etc.,

especially, those students who are shy. The programme is designed to address critically the problem of application of ICT in teaching and learning of different subjects at our secondary school levels Okoro (2012). Therefore, the cardinal objective of the programme is to facilitate the effective application of ICT in the teaching and learning of various subjects by the teachers at the secondary school levels in Nigeria. However, apart from key functions addressing the problem of application of ICT in teaching of various subjects in our schools, the programme is a great asset in our school administration, revenue generation, youth empowerment and contributes extensively in the packing of school exams.

Furthermore, the establishment of a good programme is one thing but the major factor is the proper implementation of the programme for sustainability and to realize the programme outcome. A programme includes any organized activities such as media campaigns, service provisions, educational services and public policies. Programme evaluation is the systematic application of scientific methods to assess the design, implementation, improvement or outcome of the programme. Programme implementation is the conversion of human inputs to outputs (Stake, 2004). There is no empirical evidence to show the extent to which the School Access Programme (SAP) facilitates teachers application of ICT in teaching and learning of their subjects in secondary schools in the South-East of Nigeria. The programme needs evaluations to determine the extent to which the programme is functioning at the optional level. The programme needs to be evaluated to know whether the programme is operating. In accordance with its guidelines and design, the programme needs to be evaluated to determine whether it needs expansion, refocus, new policies or direction. It needs to be evaluated to determine whether it is facilitating teacher's application of ICT in teaching their various subjects in South, East Nigerian. The non-availability of empirical data to confirm the event to which SAP facilitates teachers application of ICT in teaching and learning of their various subjects suggest the need for the investigation of this study.

**Statement of the problem:** The introduction of School Access Programme (SAP) in Nigerian secondary schools is a good development to the educational system of the country and also a good step towards speedy economic development of the nation. However, for more than, 11 years, the school access programme has been in existence without evaluation to determine the extent to which the programme facilitates teachers application of ICT in teaching and learning of their subjects in South-East Nigeria. Lack of empirical evidence to show the existence to which the school access programme facilitates teacher's application of ICT in teaching and learning of their various subjects constitutes a critical

problem. Therefore, the problem of the study is to what extent does the school access programme facilitate teachers application of ICT in teaching and learning of their various subjects in South-East Nigeria.

**Purpose of the study:** The purpose of the study was to determine the extent to which the school access programme facilitates teacher's application of ICT in teaching and learning of various subjects in South-East Nigeria.

**Significance of the study:** The study will be of immense value to the ministry of education, government programme planners, programme developers, teachers, students, school heads and the society at large. The findings of the study will enable the Ministry of Education to ascertain the extent to which school access programme competently facilitated teacher's application of ICT in South-East Nigeria. Such ascertainment will enable the ministry to determine the components of the programme that needs innovation, refocus or expansion. The findings of the study will enable the government to determine the areas the programme needs financial assistance and the best way the government can give such financial assistance. Such financial assistance could be directed towards expansion or innovation of the programme. In addition, the findings of the study will enable programme developers to ascertain whether the implementers of the programme in accordance with the blueprint or the design of the programme to achieve the desired specifications of the programme the implementers of the programme should adhere to the specifications outlined in the design of the programme. Furthermore, the findings of the study will enable programme planners to ascertain the extent to which implementers of the programme achieved the desired objective of the programme-facilitating teacher's use of ICT in teaching and learning of their various subjects in South-East Nigeria. The findings of the study will help teachers to have an assessment index of themselves. This will enable them to determine the extent the school access programme facilitated the use of ICT in teaching their subjects. The findings of the study will enable the school heads to determine the subjects that teachers can apply ICT in teaching the students in their various schools. Such discoveries will enable them to put up suggestions on what to do with the outstanding subjects. The findings of the study will enable students to determine the level of their performance in their subjects as a result of teacher's application of ICT in teaching them most of the subjects. They will compare their academic achievement without application of ICT in teaching them with the present situation: the findings of the study will enable the society to determine what happened to school access programme and how best to contribute positively towards the expansion and refocus of the programme.

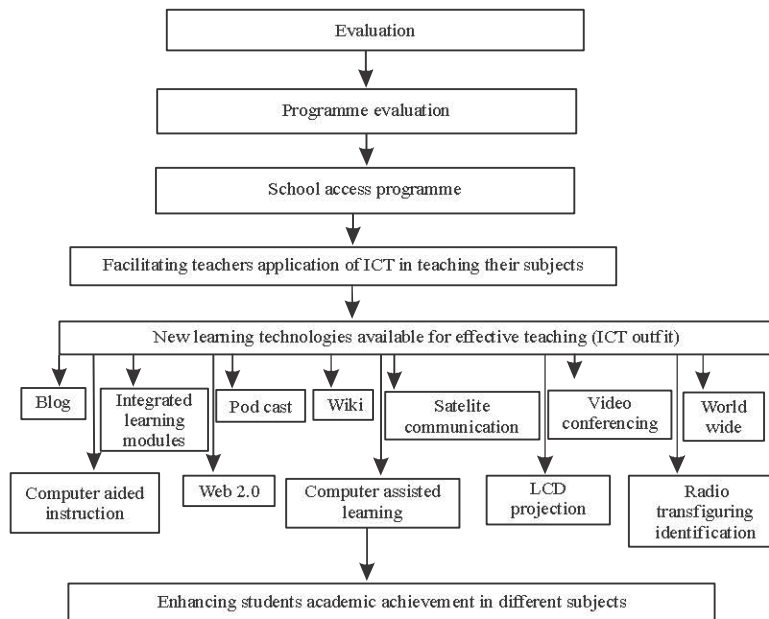


Fig. 1: The overall critical component

**Scope of the study:** The content scope of the study is the evaluation of the extent school access programme facilitated teacher’s application of ICT in teaching and learning of the various subjects. The geographical scope of the study is South-East Nigeria.

**Research question:** The research question stated below guided the study. To what extent does the school access programme facilitate teacher’s application of ICT in teaching and learning of their subjects in South-East Nigeria.

**Hypothesis:** There is no significant difference between the mean rating of teachers in urban and rural schools on the extent SAP facilitates teacher’s application of ICT in teaching and their learning of their various subjects in South-East Nigeria.

**Conceptual framework:** Figure 1 is the overall critical component of the study in a pectoral form. It consists of evaluation, programme evaluation, ICT application in teaching, types of new learning technologies available for effective teaching and the results of such application which is student’s high academic performance in their subjects (Fig. 1).

## MATERIALS AND METHODS

The study employed an evaluation design. The evaluation design is a strategy or structure designed by an evaluator to determine the overall effectiveness of a

programme by comparing the objectives proposed in the programme as against the achieved objectives using an appropriate programme evaluation model (Campbell and Stanley, 2004). The design was considered appropriate and suitable in addressing the problem of the study because it addressed the research question of the study and also enabled the researcher to collect accurate and reliable data.

The study was carried out in the South-East of Nigeria (Anambra, Abia, Enugu, Ebonyi and Imo State). The population of the study consist of 4,141 teachers comprising of 2196 female teachers and 1945 male teachers in 183 secondary schools that benefited from school access programme in South-East Nigeria in 2017/2018 session.

The sample techniques used in this study are simple random sampling techniques, stratified proportionate random sampling technique and cluster random sampling technique. Simple random sampling technique was used to draw two urban and two rural schools making a total of 4 schools for the direct observation of the study. Also, simple random sampling technique was used to draw 5 male and 6 female teachers from each of the two urban schools and 4 male teachers and 5 female teachers from each of the two rural schools making a total of 40 teachers for the direct observation of the study. Cluster random sample technique was used to draw two states (Enugu and Ebonyi State) out of 5 states. Cluster random sampling technique was used to ensure the bridge of time frame and to avoid excess waste of fund in covering the entire five states.

Furthermore, the instrument used for the collection of the pertinent and relevant data of the study is observation schedule which consists of section A and B. Section A was designed to request information on the personal characteristics of the respondent while section B which is a 7 item instrument was designed to measure the extent to which the school access programme facilitates teachers application of ICT in teaching their subjects in South-East Nigeria. The instrument was rated on 4 points Likert scale of very great extent, great extent, low extent and very low extent. Also, the instrument was given to three experts to validate. The instrument was administered to teachers and they were requested to teach their subjects with the application of ICT. They were monitored, observed and the extents to which they can apply ICT in teaching their subjects were recorded. The exercise lasted 3 days in each of the four schools used for the study. Finally, the scores generated from the exercise were analyzed with the mean, standard deviation and student t-test.

**RESULTS AND DISCUSSION**

**Research question:** To what extent does the school access programme facilitate teacher’s application of ICT in teaching and learning of their subjects in South-East Nigeria.

The result in Table 1 revealed the extent to which the school access programme facilitate teacher’s use of ICT in teaching their various subjects. From the Table, items 1-7 had their mean values ranged from 2.02-2.41. These values were within the real limit of 1.50-2.49. However, the cluster mean value of 2.24 indicates that the extent to which SAP facilitates teacher’s use of ICT in teaching their various subjects is to a low extent. The standard deviations of the 7 items ranged from 0.72-0.87; indicating that the respondents were not far from the mean or one another in their use of ICT in teaching their various subjects.

**Hypothesis:** There is no significant difference between the mean ratings of teachers in urban and rural schools on the extent SAP facilitate teacher’s use of ICT in teaching their various subjects.

Result in Table 2 shows the t-test for independent samples assuming equal variance. The results from the test shows  $t(38) = 0.342, p < 0.05$ . Hence, the null hypothesis of no significant difference is retained, since,

the p-value (0.002) is  $< 0.05$  level of significance. The researchers, therefore, concludes that there is a significant difference between the mean ratings of teachers in urban and rural schools on the extent SAP facilitates teacher’s use of ICT in teaching their various subjects.

The study revealed that the SAP facilitated teacher’s application of ICT in teaching their subjects at a very low extent. SAP did not effectively facilitate the use of ICT in teaching English language, Mathematics, Biology, Physics, Chemistry, Civic education and other various subjects. The standard deviation on the extent to which SAP facilitates teacher’s application of ICT in teaching their subjects indicates that the response score of teachers cluster around the mean. This means that the teachers were uniform in the application of ICT in teaching their subjects. The hypothesis on the extent SAP facilitates teachers application of ICT in teaching their subjects revealed that there is a significant difference between the mean rating of teachers in urban and rural schools on the extent to which SAP facilitated teachers application of ICT in teaching their subjects. The research of Groyne-Atwater (2011) which centred on professional development in Mid-Atlantic was effectively implemented. The present study contradicts the result of the reserach Gognne-Atwater (2011); the school access programme did not effectively facilitate teacher’s application of ICT in teaching their subjects in South-East Nigeria. The implementers of the programme (ICT teachers) should put an adequate and appropriate measure to ensure that teachers learn the process of application of ICT in teaching, so that, they can effectively apply it in teaching their subjects. The federal and state governments should also monitor ICT teachers to ensure that they carry out the implementation process of the programme effectively.

Table 1: Mean and standard deviation on the extent SAP facilitates teacher’s use of ICT in teaching their various subjects

Items	Items statement	Mean ( $\bar{X}$ )	SD
<b>School access programme facilitate the use of ICT in teaching and learning of:</b>			
1	English language	2.32	0.72
2	Mathematics	2.13	0.76
3	Biology	2.41	0.87
4	Chemistry	2.02	0.83
5	Physics	2.31	0.85
6	Economics	2.23	0.78
7	Civic education	2.27	0.74
8	Cluster mean	2.24	0.79

Table 2: t-test analysis of the significant difference between the mean score of teachers in urban and rural schools on the extent SAP facilitates teacher’s use of ICT in teaching their various subjects

Location	N	Mean	SD	df	t-values	Level of sig.	Sig. (2-tailed)	Decision
Urban	22	2.38	0.39	38	0.342	0.05	0.002	Rejected
Rural	18	2.10	0.38	-	-	-	-	-

## CONCLUSION

The conclusion was that the school access programme did not effectively facilitate teacher's application of ICT in teaching their subjects in South-East Nigeria. The implementers of the programme (ICT teachers) should put an adequate and appropriate measure to ensure that teachers learn the process of application of ICT in teaching, so that, they can effectively apply it in teaching their subjects. The federal and state governments should also monitor ICT teachers to ensure that they carry out the implementation process of the programme effectively.

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