

# INFLUENCE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY ON EFFECTIVE EDUCATIONAL PLANNING FOR SUSTAINABLE DEVELOPMENT OF THE EDUCATION SECTOR IN SOKOTO STATE, NIGERIA

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## **Abstract**

*The paper focused on the influence of information and communications technology on effective educational planning for sustainable development of the education sector in Sokoto state, Nigeria. Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. UNESCO takes a holistic and comprehensive approach to promoting ICT in education. Access, inclusion and quality are among the main challenges they can address. The Organization's Inter-spectral Platform for ICT in education focuses on these issues through the joint work of three of its sectors: Communication & Information, Education and Science. Three research questions and two hypotheses were stated and posed with 120 respondents, frequency, percentage and chi-square statistics were used in data analysis. The findings indicated that, there is no available ICT gadget in educational planning in Sokoto State, there is significant influence of ICT on effective educational planning in Sokoto state and there is no significant influence of ICT application in educational planning on Sustainable development in Sokoto state. Conclusion and recommendations were made to include, Training and retraining of educational planning need to be introduce and strengthen especially on the area of ICT usage and application in the planning of education in Sokoto state.*

## **Keywords:**

*ICT, Educational Planning, Sustainable Development*

## **1. INTRODUCTION**

Information and communications technology (ICT) is extensional term for information technology (IT) that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information. The term ICT is also used to refer to the convergence of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution and management [4].

Planning means to select among alternatives explores routes before travel begins and identifies possible or probable outcomes or action before the executive and his organisation committed to any [5]. The term covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, e.g. personal computers, digital television, email, robots. For clarity, Zuppo provided an ICT hierarchy where "all

levels of the hierarchy contain some degree of commonality in that they are related to technologies that facilitate the transfer of information and various types of electronically mediated communications". The theoretical difference between interpersonal communication technologies and mass-communication technologies have been identified. Skills Framework for the Information Age is one of many models for describing and managing competencies for ICT professionals for the 21st century.

The United Nations Educational, Scientific and Cultural Organisation (UNESCO), a division of the United Nations, has made integrating ICT into education part of its efforts to ensure equity and access to education. The following, taken directly from a UNESCO publication on educational ICT, explains the organization's position on the initiative. Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. UNESCO takes a holistic and comprehensive approach to promoting ICT in education. Access, inclusion and quality are among the main challenges they can address. The Organization's Intersectoral Platform for ICT in education focuses on these issues through the joint work of three of its sectors: Communication and Information, Education and Science.

It confirmed that despite the power of computers to enhance and reform teaching and learning practices, improper implementation is a widespread issue beyond the reach of increased funding and technological advances with little evidence that teachers and tutors are properly integrating ICT into everyday learning. Intrinsic barriers such as a belief in more traditional teaching practices and individual attitudes towards computers in education as well as the teachers own comfort with computers and their ability to use them all as result in varying effectiveness in the integration of ICT in the classroom.

The inclusion of ICT in the classroom, often referred to as M-Learning, has expanded the reach of educators and improved their ability to track student progress in Sub-Saharan Africa. In particular, the mobile phone has been most important in this effort. Mobile phone use is widespread, and mobile networks cover a wider area than internet networks in the region. The devices are familiar to student, teacher, and parent, and allow increased communication and access to educational materials. In addition to benefits for students, M-learning also offers the opportunity for better teacher training, which leads to a more consistent curriculum across the educational service area. In 2011, UNESCO started a yearly symposium called Mobile Learning Week with the purpose of gathering stakeholders to discuss the M-learning initiative.

Implementation is not without its challenges. While mobile phone and internet use are increasing much more rapidly in Sub-Saharan Africa than in other developing countries, the progress is still slow compared to the rest of the developed world, with smartphone penetration only expected to reach 20% by 2017. Additionally, there are gender, social, and geo-political barriers to educational access, and the severity of these barriers vary greatly by country. Overall, 29.6 million children in Sub-Saharan Africa were not in school in the year 2012, owing not just to the geographical divide, but also to political instability, the importance of social origins, social structure, and gender inequality. Once in school, students also face barriers to quality education, such as teacher competency, training and preparedness, access to educational materials, and lack of information management.

The term information and communication technology (ICT) is a convergence from information technology (IT) and communication technology (CT). According to Khan et al. [7] information communication technology (ICT) refers to technologies that provide access to information through communications. It is added that ICT stands for information and communications technology. Also, ICT is an umbrella term that includes any communication device, encompassing radio, television, cell phones, computer and network hardware, satellite systems and so on, as well as the various services and appliance with them such as video conferencing and distance learning. Information and communication technology (ICT) have been touted as potentially powerful enabling tools for educational change and reform. A more pertinent role of information and communication technology (ICT) is the transmitting, transferring, inculcating desirable goals and values through education that cannot be overemphasized in any society. In an educational system, ICT is a driving force in the process of transferring of worthwhile goals from a teacher to expected learners that would make them to be useful to themselves and the society at large. ICT is a new innovation that is yet to be properly unraveled in the educational system of the third world countries/least developed countries.

Educational planning strives to research, develop, implement and advance policies, programs and reforms within educational institutions. Educational planners might work at the local, national or international level to advance or improve education. While educational planning might center on pre-school and K-12 education, you could also work in postsecondary education as well. As an educational planner, you could work within educational institutions, government agencies, and private or not-for-profit organizations [6].

Kashyap [3] stated that administrators within schools or districts are commonly involved in educational planning. Planning is essential in the field of education entitled as "Educational Planning" which is a major requirement in the contemporary society. The complexities of the present scientifically developed and technologically advanced society have given special position to the need for planning in education.

Like planning in any field, educational planning has to explore the best possible means of making the greatest use of available resources leading to the maximum realization of the educational aims and objectives, both individual and social [5].

The educational planning may be defined as a systematic design of action for realization of educational aims and objectives

for individual and social development through maximum utilization of available resources. In practical perspective, educational planning is defined as a process utilized by an administrator while performing the role of a leader, decision-maker, and change agent and so on.

The planning is essential for development of every nation and according to which changes would have been brought in social, political, economic, cultural and educational sphere in a systematic and orderly manner. Simply speaking planning means to think before acting, and to act according to facts, not, conjectures or speculation.

The word development is a polysemous in nature. This buttress the fact, that different people in different discipline have different connotation to the word development. Development generically refers to an institutional change which is accompanied by increase in welfare, and fall in cost of living [1]. In other word, it is a reduction in unemployment, inequality and poverty for a given nation. It can also be seen, as the later stage of growth [1]. It is a term commonly associated with the third world countries or Least Develops Countries (LDC). Development is a term used to appreciate the need for institutional change from the primitive society to a more advance society in the less develop, least develop and even developing countries of the world.

Significance of Educational Planning on sustainable development to Dias and Posel [2]:

- To make every programme of an educational institution or organisation grand success.
- Proper educational planning saves time, effort and money as planning in every field is a time-saving an effort-saving and a money-saving activity.
- Educational planning is a sound method of solving educational problems by avoiding the trial and error method of doing things.
- Educational planning is essential for the best utilization of available resources.
- Educational planning checks wastage and failure and contributes to the smoothness, ease and efficiency of the administrative process in the field of education.
- Through proper planning in education, education can be the best means by which society will preserve and develop its future value system, way of life of an individual, knowledge, skills and applications, and culture of the country.
- Through proper educational planning, the means and ends of the society can be properly interacted through educational system. It implies that the educational system utilizes a large proportion of the country's educated talents and a major part of public expenditure.
- Educational planning is highly essential for preparing a blueprint or plan of action for every programme of an educational institution or organisation.
- Planning in education is necessary for making one's educational journey goal-oriented and purposeful.
- It is essential to maintain, sustain and enhance the thinking process of an individual, institution or organisation.
- Planning in education is necessary to highlight the universal aims of education required for every nation for its development in every respect.

- To bring total development of a nation in time, in which educational development is one among its various aspects.
- To reflect the modern developments like explosion of knowledge, advancement of science and technology, development of research and innovation while reformulating the aims and objectives of education in the light of the particular situation a country is facing.
- It explores and provides the best possible means of making the wide use of available resources leading to maximum realization of the educational goals.
- Educational planning facilitates gathering of educational experts, teachers, supervisors and administrators for taking decision in relation to the realisation of purposes of educational programme.
- Educational planning gives equal importance to the purposes of different classes of experts such as sociologists, economists, scientists, politicians, educationists etc.

When one consider sustainable development in any realistic way, the balancing act lies between how individuals need are satisfied and how well one preserve the ecosystem and all natural resources. This is not necessarily an easy equilibrium to achieve. However, without it, sustainability may evade its implementers. We have seen tremendous advances in the role of e-government, for example, and the abilities it gives to citizens to be more productive. This initiative needs to continue by integrating services across departments and ministries. It is not simple to determine and master the complexities surrounding socio-environmental challenges but sustainability is impossible without such comprehension. A fundamental concern to ICT supporting sustainable development is the recognition of the existing challenges in ICT itself and how well these demands can be resolved to enhance organizational and spatial integration [2].

## 2. OBJECTIVES

The main purpose of this study is to investigate the influence of information and communications technology on effective educational planning for sustainable development of the education sector in sokoto state, Nigeria. Specifically to find out the

- Availability of ICT gadget in educational planning in Sokoto State.
- Influence of ICT on effective educational planning in Sokoto state
- Influence of ICT application in educational planning on Sustainable development in Sokoto state.

## 2.1 RESEARCH QUESTIONS

To guide the study the following research questions were ask:

- Is there available ICT gadget in educational planning in Sokoto State?
- What is the influence of ICT on effective educational planning in Sokoto state?
- What is influence of ICT application in educational planning on Sustainable development in Sokoto state?

## 2.2 HYPOTHESIS

To guide the study the following hypothesis were modeled:

- There is no significant influence of ICT on effective educational planning in Sokoto state
- There is no significant influence of ICT application in educational planning on Sustainable development in Sokoto state.

## 3. METHODOLOGY

The study employed a descriptive correlational research design, with educational planners in the ministries and state universal basic education board in Sokoto state as the population, 120 respondents were selected as the samples for the study. A researcher designed questionnaire titled: ICT in educational planning for sustainable development were used in collecting data for this study, with three part, part A on the availability of ICT gadget and instruments, part B on the ICT usage in educational planning and part C on the Use of ICT in planning and sustainable development, four point Likert scales of strongly agree, agree, disagree and strongly disagree, where SA, A, D and SD stands for 4, 3, 2 and 1 respectively. The validity was obtained after a series of corrections by expert in research and statistics of the department of education, Usmanu Danfodiyo University Sokoto, and adjudged the instrument to have content validity and reliability was obtained using test re-test method that yielded 0.80 index. Pearson product moment correlation coefficient was used in analysing the data collected in this study.

## 4. RESULTS

$Q_1$ : Is there available ICT gadget in educational planning in Sokoto State?

Table.1. availability of ICT gadget in educational planning

ICT gadgets	Frequency	Percentages
Yes	42	35.8%
No	77	64.2%
Total	120	100%

From the Table.1 on the frequency and percentages of the respondents based on the availability of ICT gadget in educational planning in Sokoto State, the results indicated that 42 respondents amounting to 35.8% agreed with the statements and 77 respondents amounting to 64.2% disagreed with the statements.

$H_1$ : There is no significant influence of ICT on effective educational planning in Sokoto state

Table.2. Influence of ICT on effective educational planning in Sokoto state

Variables	N	Mean	Std. Deviation	chi-Cal	p-Value	Decision
ICT	120	23.04	11.32	.238	.000	H <sub>0</sub> Rejected
Edu plan	120	75.12	9.71			

From the result of Table.2, influence of ICT on effective educational planning in Sokoto state, chi-square = .238,  $p = .000$ . This indicates a significant influence of ICT on effective educational planning in Sokoto state, because the  $p$ -value is less than the chi-Cal at .05 level of significance. Therefore,  $H_1$  states that there is no significant influence of ICT on effective educational planning in Sokoto state was rejected.

$H_2$ : There is no significant influence of ICT application in educational planning on Sustainable development in Sokoto state.

Table.3. Influence of ICT application in educational planning on Sustainable development

Variables	N	Mean	Std. Deviation	chi-Cal	$p$ -Value	Decision
ICT App	120	43.04	9.32	.438	.000	H <sub>0</sub> Rejected
Sus. Dev.t	120	85.12	12.71			

From the result of Table.3, influence of ICT application in educational planning on Sustainable development in Sokoto state, chi-square = .438,  $p = .000$ . This indicates a significant influence of ICT application in educational planning on Sustainable development in Sokoto State, because the  $p$ -value is less than the chi-Cal at .05 level of significance. Therefore,  $H_2$  is no significant influence of ICT application in educational planning on Sustainable development in Sokoto State was rejected.

## 5. DISCUSSION

The study investigated the influence of information and communications technology on effective educational planning for sustainable development of the education sector in sokoto state, Nigeria. Findings revealed that 42 respondents amounting to 35.8% agreed with the statements and 77 respondents amounting to 64.2% disagreed with the statements based on the availability of ICT gadget in educational planning in Sokoto State, this also confirmed that there is no available of ICT gadget in educational planning in Sokoto State.

This finding agrees with other existing findings, for example, Akarowhe [1] opined that, Information and Communication Technology can contribute to universal access to education, equity in education, the delivery of quality learning and teaching, teachers' professional development and more efficient education management, governance and administration. UNESCO takes a holistic and comprehensive approach to promoting ICT in education. Access, inclusion and quality are among the main challenges they can address.

On the hypothesis one which state that, there is no significant influence of ICT on effective educational planning in Sokoto state. From the analysis on the influence of ICT on effective educational planning in Sokoto state, chi-square = .238,  $p = .000$ . This indicates a significant influence of ICT on effective educational planning in Sokoto state, because the  $p$ -value is less than the chi-Cal at .05 level of significance. Therefore,  $H_1$  which states that there is no significant influence of ICT on effective educational planning in Sokoto state was rejected. This finding agrees with other existing findings, for example; Kingsleys [4] is of the view that planning means to selects among alternatives explores routes before travel begins and identifies possible or

probable outcomes or action before the executive and his organisation committed to any. While ICT is defined as a broad subject and the concepts are evolving. The term covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, e.g. personal computers, digital television, email, robots.

On the hypothesis two which state that, from the analysis on the influence of ICT application in educational planning on Sustainable development in Sokoto state, chi-square = .438,  $p = .000$ . This indicates a significant influence of ICT application in educational planning on Sustainable development in Sokoto state, because the  $p$ -value is less than the chi-Cal at .05 level of significance. Therefore,  $H_2$  is no significant influence of ICT application in educational planning on Sustainable development in Sokoto state was rejected.

This finding agrees with other existing findings, for example, Kashyap [3] stated that administrators within schools or districts are commonly involved in educational planning. Planning is essential in the field of education entitled as "Educational Planning" which is a major requirement in the contemporary society. The complexities of the present scientifically developed and technologically advanced society have given special position to the need for planning in education. Like planning in any field, educational planning has to explore the best possible means of making the greatest use of available resources leading to the maximum realization of the educational aims and objectives, both individual and social.

## 6. CONCLUSIONS

Conclusion drawn from this study indicated that, Informational communication technology (ICT) is a tool of global educational development. The use of information communication technology in the third world countries has witness a number of pitfalls, despite relevant educational stakeholders' effort to savage the situation. Some of the possible solution insight as exaggerated by the researcher will serve as benchmark for ICT to be fully optimized in the educational system of these third world countries, for it to yield its lantern benefit in terms of making teaching/learning more effective which is a pivotal for manpower and national development. This also confirmed that there is no available of ICT gadget in educational planning in Sokoto State, there is also significant influence of ICT on effective educational planning in Sokoto state and finally concluded that, there is significant influence of ICT application in educational planning on Sustainable development in Sokoto state.

## 7. RECOMMENDATIONS

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

- There is need for the provision of basic and applied ICT equipment and gadget to all the educational planning departments and units in Sokoto state.
- Training and retraining of educational planning need to be introduce and strengthen especially on the area of ICT usage and application in the planning of education in Sokoto state.

- For sustainable development in education, Government as well as non-governmental agencies should come up with modalities in training and funding educational planning units, sections and departmental staffs with ICT gadgets and equipment.
- Educational planning in the Sokoto state should partner with ICT units for the training on the modern techniques of planning using ICT gadget and equipment.

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