

INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) AND TEACHING-LEARNING CAPACITY: THE CLASSROOM MANAGEMENT INTERCONNECTIVITY

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ABSTRACT

This paper is a desktop study that adopts a theoretical approach of the classroom management interconnectivity between information and communications technology and Social Studies in the Educational Institutions of both secondary and tertiary institutions. The paper discusses classroom management interconnectivity between information and communications technology and social studies. ICT is understood as a complex of artifacts, techniques, and knowledge for solving human problems involving information and its communication. One major feature is the employment of electronics rather than mechanical means for storing, processing, and communicating social studies information. It is noted that when communication is hampered in the administration of any organization, the entire organization suffers, when it is accurate, thorough, and timely, the organization can move so effectively and efficiently towards goal achievement. The paper, therefore, examines the specific objectives of ICT, the major terminologies, the relevance of ICT, challenges, and way-outs of the challenges. It is therefore recommended that Social studies education must engage in constant self-development in information and communications technology, orientation courses, and symposium, conferences, debates, seminars should be encouraged and emphasis should be laid on the teaching of values of ICT. Finally, it is recommended that federal and state governments should ensure a sustainable supply of electricity to all institutions of learning in both rural and urban areas.

Keywords: Information and Communications Technology, Social Studies, Classroom Management, Educational Institution, Interconnectivity.

INTRODUCTION

Ibrahim, Adamu, and AbdulKarim (2017) noted that the world is gradually shifting to the computer era, for that teaching and learning are moving with the current trend. Computers offer exciting approaches to teaching that were not even dreamt of many years ago, but the extent to which the educational potentials of computer technology will be realized remains to be seen. Computer technology according to Ibrahim, Adamu, and AbdulKarim (2017) has caught the attention of many researchers, educators, and computer-based instructional applications that are considered effective alternatives to traditional teaching methods. In whatever society man lives, he must relate to his fellow men and women, the part of the world he lives, social and physical environments. Through science, a man attempts to understand nature, and through technology, he uses his understanding to tame nature to serve his purpose. ICT according to Bamiro, Oluleye, and Tiamiyu

(2005) is a product of science and is understood as a complex of artifacts, techniques, and knowledge for solving human problems involving information and its communications. One main feature in it is the employment of electronic rather than mechanical means for storing, processing, and communicating information. According to Adu (2015), ICT is the convergence of computer systems with telecommunication network to acquire, process, store, retrieve and transmit data and information which then encompasses information storage tools such as compact Disc, Read-only Memory (CD-ROM), magnetic tapes, computer files, databases, and network internet-based tools and technologies. The system and tools were developed because of the need to adequately manage the information being generated at an explosive rate.

This could be ordinarily termed as the use of technology to handle information and aid communication in Social studies, just like any course of study. Information without being communicated is meaningless in impacting development. What is then important is the need to identify the driving force-computer, computer software, and the need to make more efficient decisions that impact development in a relevant way. No nation can develop to its fullest and keep pace with modern social trends in science and technology without effective and efficient ICT education, thus the need for its application in Social studies is the melting pot of the social science, Arts, law, sciences, and even education subjects. And for it to be properly taught by the teacher as well as assimilated by the learners, there is an absolute need for the application of ICT (Edinyand & Ihejiamazu 2011). The entire world is fast-moving into becoming a global village where the language of information technology is so vital and essential in all areas of human endeavour. ICT has brought about new ways of doing old things in all spheres of human activities. Effective and efficient utilization of ICT in the developed world has greatly improved research in all areas of human endeavour: agriculture, education, security, science and technology, economy, communication, health, trade, etc. it is of great importance to take the advantage of ICT in social studies as we prepare for a globally competitive society. Akinola (2015) agrees that ICT gives a significant improvement in the gravity of research, teaching, and learning. Akinola (2015) then suggests that social studies teachers are not only to equip students with this accelerated technology but also to harness their power to improve the standard of social studies education they can offer to them.

Realizing the import of ICT, Babalola (2010) noted that during the 32nd ministerial council meeting of the National Council on Education in 1997, the Federal government of Nigeria decided to introduce computer education into the nation's secondary school system. The National committee on computer education was then inaugurated with aim of "Planning for a dynamic policy on computer and literacy in Nigeria as well as devising clear strategies and terminologies to be used by the federal and state government in introducing computer education". The general objectives are to: bring about computer literate society in Nigeria by mid-1990; enable present students to appreciate and use the computer in various aspects of life and future employment. The modalities and strategies for achieving the policy objectives are training teachers and associated personnel, provision of hardware facilities for curriculum development; Software developments and evaluation, and maintenance of hardware and peripherals.

Adu (2015) noted that "If communication is hampered in the administration of any organization, the entire organization suffers; when it is accurate, thorough and timely, the organization can move effectively toward goal achievement. In line with this, Babalola and Awolola (2016) posited that a communication process that would yield results in school security

and management of social studies in the classroom must be inclusive and not exclusive. It should be a collective process that involves all the stakeholders in the school system situation. The essence of information and communications technology (ICT) cannot, therefore, be overlooked because of support activities involving the creation, storage, manipulation, and communication of information together with the related methods, management, and application in the social studies classrooms. ICTs enable teachers to record, store, process, retrieve, and transmit Social studies information. Ayelagbe and Loto (2013) cited in Babalola and Awolola (2016) encourages the use of modern technologies such as computers, telecommunications facsimile, and microelectronics.

The purpose of ICT in a secondary school as highlighted by Babalola and Awolola (2016) are as an object of study in the context of information and communications technology and computer literacy, as a medium through which students and teachers can have online access to an off-site collection of electronically stored information, as a medium through which computer-mediated communication CMC can occur and as a medium for the distance delivery of Social studies course and other structured educational experiences. However, Babalola and Awolola (2016) highlighted some specific objectives of information communication technology in the following ways: To ensure that information and communications technology are readily available to promote efficient natural development; To guarantee that the country development maximally and contributes genuinely by providing the global solution to the challenges of the information; To empower Nigerians to participate in software and ICT development; To integrate information and communications technology (ICT) into the mainstream of education and training stages of information requirements for classroom managers.

Adu and Galloway (2015) observed that information and communications technologies have been used in education for many purposes such as for memory retention, skill acquisition, understanding of the subject matter, independent study, and motivation. It can as well be used to promote the use of modern methods of teaching which includes among others cooperative learning which could include cooperative learning peer grouping dramatization through play and problem-solving. ICT also helps to promote cordial relationships and good working rapport between the teacher and the students. ICT is presently playing a significant role in the development of our global society. Adu (2015) observed that the development ranges from Computer application in business, education, transport, government, medicine, sport, researches to mention but a few. ICT has shaped the way we live, work, and play, have made information available at our fingertips and globalization has linked us together with the use of ICTs. All spheres of lives have been so changed dramatically via ICTs. Social, economic, political, and human development has become the epitome of useful living in our present society today. In the education sector, ICTs have brought an enormous renaissance to social studies, research, and teaching methods. It is facilitating cordial relationship and interaction among teachers, lecturers, and learning materials with the help of gadgets like smartphones, Ipads, internet services, iPad blackboard, v-drive to mention but a few.

Adelabu and Adu (2015) believed that the emergence of information and communications technology (ICT) has transformed the way we access, process, exchange, store, retrieve and disseminate information within organizations and or across the globe, whether it is in the vocal, pictorial, textual numeric or macro-electric base. However, globally the evolution of ICT dates back to 1823 when Charles Babbage invented the Analytical Engine and the design, according to Caselli (1999) but cited in Adelabu and Adu (2015) comprised of four components for performing the basic functions of input, output, processing, and storage. Adelabu and Adu (2014) indicated

that the modern development of innovative technologies has provided new possibilities for teaching professions, but at the same time has placed more demands on the teacher to learn how to use these new technologies in their teaching. However, according to Adelabu and Adu (2014), ICT encompasses a range of technologies and application systems of microprocessors that have had a profound impact on the society and its way of life. The revolution of ICT is drastically influencing the nature of learning and the production of knowledge and therefore transforming the globe in an unprecedented way. This has helped to facilitate the paradigm shift from the traditional instructional, traditional, and pedagogical method to a more modern and innovative technology-based teaching and learning methods.

According to Adelabu and Adu (2015), ICTs have become key facilities in educational methodology and curriculum delivery globally. It has been seen as an indispensable tool for the development of quality teaching and learning in the social studies classroom. ICT is fundamental for the preparation of students in meeting the innovation in the global arena. Adelabu and Adu (2015) noted that ICT has the potential to improve and accelerate skills, motivate and engage students in learning to create economic viability for workers, helps to relate experiences to work practices contributes to radial changes in school, fortifies teaching and provides opportunities for connection between the school and the entire world. Adu and Mireku (2016) identified other job skills referred to as 21st-century skills such as digital-age literacy, information literacy, and global awareness, which learners can acquire via the use of ICT in Social Studies. ICT tools offer new opportunities to develop some of the critical early literacy skills, the fundamental developments, which will affect many numbers of low literate learners in the rural settings to take advantage of educational opportunities presented to them through formal education. Adelabu and Adu (2015) identified that telecom conferencing, email, audio conferencing, television lessons, radio broadcast have been used presently for different purposes and according to Adeyemo et al (2015), cited in Adu and Mireku (2016) these are also thinking tools that educators could use to interact into teaching and learning strategies to encourage independent learning.

Ojo and Adu (2018) observed that a skilled teacher uses various teaching and learning technologies such as video, camera, fax machine, computer, internet and multimedia equipment that are now being used by teachers to enhance teaching and learning process through presentation of latest ideas and innovation that could be used to assist both the teachers and students to interact with adequate knowledge that is required of a student to properly retrieve, retain and analyze for decision making in a conducive school environment. Ojo and Adu (2018) noted that high schools in Nigeria must strive to meet common 21st-century challenges of providing the students with an education that is viewed by the general society as both relevant and valuable and that teaching and learning must be driven by ICTs for the purpose of effectiveness. Viewed from another development, Ojo and Adu (2018) stated that teachers in the high school will become the facilitators of learning, collaborators, coaches, mentors, knowledge navigators, and co-learners and not merely dispense knowledge.

Adeyemo, Adu, and Adelabu (2015) noted that ICTs are increasingly developed as tools to enhance the learners' capacity in the field of formal education to perceive, communicate and understand as observed in the great increase in online learning programs and also the use of the computer as a learning support tool in the classroom. It is therefore paramount that there is a need to improve the academic learning of instructors, they are so saddled with the responsibilities of training students in diverse skills and knowledge necessary for them to establish, survive and

contribute to the development of their immediate environment and society at large. Adu and Galloway (2015) noted that ICTs have been used in the classroom for many purposes such as memory retention, skills acquisition, understanding of the subject matter, independent study, and motivation. It can as well be used to promote the use of modern teaching methods such as cooperative learning, peer group, dramatization, role play, problem-solving to mention but a few. Information and communications technology is not only for skill acquisition but is used to prepare students on the methodology of using ICT, in the pedagogy of school-based teaching in preparation for school experience. The usefulness of ICT in classroom accordingly to Adu and Galloway (2015) are as follows:

- **Networking Resources:** ICT has brought to the classroom video presentation, PowerPoint presentation, video conferencing which many people adopt, this reduces paperwork, risk of traveling, and promotes more exposure to the recipient across the globe.
- **Creation of Learning Spaces:** Students can share valuable information among themselves. The teacher educator uses these resources of ICT to communicate vital information to the students and the use of the internet has been used to widen the horizon of both the students and the teacher educator. Internet resources promote learning and reduce stress. E-mails are used to teach some modules in schools. Students are familiar with the topic before the time and e-mail increases the communication skills of the users.
- **Collaborative Learning:** Students interact among themselves via a collaborative method. Collaboration is a student's centered method of teaching that gives the students more understanding of content knowledge. This method develops student intellectual capacity and enhances curriculum development and implementation. ICT, therefore, plays a key role in bringing together learning tasks and group assignments with methods and steps to follow by the students to solve the tasks collectively.
- **Learning Autonomy:** ICT gives teacher educators the varieties of choices in terms of methods to use for any given assignments. The use of ICT reduces the influence of the teacher educator thus making them become facilitators and students' study independently to a greater extent using tablets, the smartphone, and I-pad for academic work. It is then quite imperative for teachers' educators to update their knowledge to meet the test of time and could be done through professional development activities such as in-service learning, on the job training, workshops, seminars, symposia, and conferences. The topic was specifically designed to investigate the classroom management interconnectivity between information and communications technology and Social Studies in Educational Institutions in both secondary and tertiary institutions. The study is expected to make suggestions and recommendations that could enhance management and attainment in the 21st-century educational institutions. Specifically, the focus was mainly on stages of information required, characteristics of the information system, the relevance of ICT in Social Studies, challenges of ICT, the establishment in Nigerian Social Studies classrooms, and way out of the predicaments.

REVIEW OF LITERATURE

The paper which is a desktop review succinctly discuss the following

Observation and Discussion

Management information and communication become vital to social studies classrooms because it is required for need assessment (objectives/problem identification) logistics and planning, resource utilization, operational control, measurement, and evaluation of results. There are three general levels of information management as identified by (Nwankwo, 2014). They are:

- **Strategic Planning Levels:** This is the level where both the short and long term goals are defined, the needs are assessed and the future projected. Here, plans and policies are drawn up and the resources, techniques for executing the plans, and policies are stipulated. Strategic planning functions are undertaken by the top management such as permanent secretaries, directors in ministries of education, vice-chancellors, rectors or provost, principals, Education Boards, etc.
- **Operational Management Level** – Here, the procedures and actual implementation of organizational activities and programs are carried out. The activities here must foster the corporate objectives plans and policies established at the strategic planning and policy level. The information and communication flow of this level must be directed to middle management to perform executive activities.
- **Operational Control** – The detailed routine or day to day plans and programs are defined, executed, supervised, evaluated, and reported. The flow of information at this level is to the front-line staff otherwise known as supervisors. To further understand the component parts and the characteristics of the information system (input, process, control, and output) is very essential to understand the following terminologies:
- **Systems Environment:** The system environment is so important because it is the source of the input and in some cases the destination of the output Nwankwo (2014). Other terminologies according to Akinloye (2015) are as follows:
- **Input:** Social studies education as an open system has inputs from the environment in the form of human (students, academic and non-academic staff(s); material (fund, equipment, facilities, and constraints (values, policies, objectives).
- **Processing:** The system helps to transform inputs into new products required by society such as providing necessary training for students and providing services to society. The processing activities of inputs in the school are carried out by the teachers with the support of school environmental factors coupled with the assistance of student home background.
- **Output:** The result of the school processing system is the output of the educational system in the form of trained qualified school teachers and graduates with these appropriate skills, knowledge, and values. The outcome (products) of the processing (through-out) is then expected in the external environment of the school to provide services needed by society. Any open system has a dual task of maintaining itself and serving the external environment.
- **Storage:** Information system data processing results are frequently placed in storage to be used as input and data for later processing at another date. The information systems

memory is a compendium of databases kept in readiness of recall and use as may be desired.

- **Feedback:** This has to do with the regulatory process through which information about inputs and its transformation with output is connected back into the system. This enables the system to correct any devalues from the course. Secondary schools receive feedback regarding its activities through student yearly results released by WAEC and NECO performance and general performances, comments from the parents, community, and labor market.
- **The cycle of Events:** This is the process of input, transformation, and output from the basic cycle of a repetitive pattern of events in the system. In an open system like a school of which Social studies is a by product, the input-output function is continual or cyclical. The yearly circle of events in the school system includes admission and registration of students, teaching, learning activities, examination, and graduation, then followed by fresh admission and registration of students.
- **The System and Subsystem Viewpoint:** Organization is seen as a system that is made up of interrelated and interdependent parts. A change whether slight or major in any of the sub-systems will bring about changes in others. The school like any other organization is seen as a complete system with its internal division and sub-division of which Social studies is part of subdivision; it is also a subsystem of the larger society.
- **Dynamic Internationalism:** There is a dynamic process of interaction between an organization and its structure. Instead of replacing the formal structure of authority, responsibility, communication, the open system simply adds and emphasizes the interaction process that occurs within the structure and between the organization and its external environment.
- **Multidimensionality:** This sees each problem as multidimensional that is being caused by several factors
- **Research Energy Conversion Process:** The schools, where Social studies is undertaken, like any other organization imports some form of energy from the external environment and reorganize concerts or transform the imported energy into some finished product forms. It then exports some products into the environment and re-energizes the system from resources in the environment thus rendering the patterns of activities of the energy exchange a cycle of events.
- **Negentropy:** This is the tendency of the system to rundown or to fight against death and liquidation. Every system has certain occasional forces that tend to disrupt its normal functions. This system equally can develop its own 'anti-biotic' to counteract the effect of such disruptive forces. Measures like regulations, discipline, auditing, query, and inspection are either for standard or accountability ensures that negative forces are adequately controlled to ensure normally.
- **Information Input, Negative Feedback, and Adaptability:** The constant interaction between a system and its external environment enables the organization to build a self-adjusting mechanism through negative information on feedback about performance which is then used to correct deviation from expected results. Organizations use information about

their performance to control their activities and adjust themselves to changes in their environment to survive and remain viable.

- **Dynamic Homeostasis:** The organization operates like a life cycle in which dynamic equilibrium under changing conditions. This is because organizations adjust themselves to the changes taking place in its environment; it can maintain a steady-state or dynamic balance in which there are some constancies in energy exchange and in the relation between the parts so that from time to time, the organization is not exactly the same as before but a highly similar one.
- **Diversification:** All the schools tend to create other subsystems from their existing departments which later subdivide into other departments for better management, supervision, and for staff promotion.
- **Equifinality:** No matter how much diversification in the school system, each segment is otherwise known as the school subsystem for example Social studies pursue the same ultimate goal of the main system. As a result, the educational system at any level, the individual classroom, department, facilities, schools, colleges, Universities even the management personnel each reflects on its objectives and functions of the ultimate goal of the educational system in which they operate as parts or sub-systems.
- **Choice:** Classical and neo-classical approaches take both negative and positive views towards the role of the individual in the organization. The system theory merely describes and seeks to understand organizational phenomena leaving the choice of objectives and methods of the individual manager.
- **Synergism:** This explains the capacity of an organization as a total system to achieve more and better output than the sum of the output of its parts would be if each part were to function independently and individually.

THE RELEVANCE OF ICT IN SOCIAL STUDIES

The purpose of telecommunication in secondary schools according to Babalola and Awolola (2016) stated the reasons for using telecommunication in secondary schools as follows: as an object of study in the context of information technology, informatics and computer literacy as a way through which students and teachers could have online access to off-site collections of electronically stored information, as a medium through which computer-mediated communication (CMC) can take place and as a medium for the distance delivery of courses and other relevant structured educational experiences. Babalola and Awolola (2016) listed out some objectives of ICT to the teaching and learning of Social studies. First, to ensure that information and communications technology (ICT) resources are readily available to promote efficient natural development in Social studies. Secondly to guarantee that the country benefits maximally and contributes meaningfully by providing the global solution to the challenges of the information. Thirdly, to empower students to participates in software and ICT development. Fourthly, to empower the youths with information and communications technology (ICT) skills and prepare them for global competitiveness in Social studies and finally to integrate information and communications technology (ICT) into the mainstream of Social studies and training.

Obadara and Adenaike (2008) noted that as new sectors are emerging in any of them are based on the use of ICT products and services, including the internet. All these increasing demands for new skills and competencies which could include personal skills and ICT competencies. Social studies and training need to respond to these latest demands: both those related to ICT and those related to changing work organization. Electronic networking provides opportunities for learners to assist each other more actively, for learners to be more active in the training and Social studies process and for formal non-conventional teaching methods to be utilized. To apply ICT in Social studies training, trainers must master these technologies and be systematically trained. Teaching methods in Social studies need to be updated to accommodate the teaching of new developments in ICT, new types of organization of schools should be devised to take full advantage of ICT and the individual needs to learn self-learning methods in Social studies. New training is needed to provide trainers and individuals with these skills. Enterprises may have to provide ICT facilities or support schemes for workers. For the use of ICT at home or in general in schools or other training centers to promote the diffusion of ICT skills and access in society.

Information and communications technology (ICT) is an umbrella term that includes all technologies that are being manipulated and are used for dissemination of information. According to Amosun (2016), when he noted that globalization and the development of modern technologies in developed nations of the world have actually brought about an unprecedented transformation in ICT in Nigeria and other African nations. The discovery of GSM in Nigeria for instance has revolutionized communication and other areas of ICT devices in the country. Presently, the use of ICT and modern technologies are visible in the classrooms and other sectors of society to the extent that our society today revolves around information technology. ICTs have great potentials for teaching learning and research in Social studies. According to Adu (2015), the interrelationship is as follows: Information and communications technology have made the work of a Social study teacher a lot easier, faster, and less stressful. Through computer-based teleconferencing, a single teacher of Social studies can teach over a thousand students in various classrooms simultaneously. Social studies teachers can also visit specialist websites on the World Wide Web (www). Adu (2015) noted that the WWW is the fastest search tool on the internet and has become the most popular way of locating and retrieving Social studies information.

The dynamism of information and communications technology has created a completely new world of learning Social studies. Concepts such as web-school, web teachers, online learning modules, and courses provide limitless opportunities for skill acquisition and development. Adu (2015) captures this scenario much more appropriately. Computer-assisted learning shall become the vogue while instructions in basic techniques of face to face interaction would diminish soonest. Lectures could be conducted online than in lecture rooms. The emphasis would be getting students started at their own pace on computer-assisted learning programs.

Adu (2015) again argues that information technology could fundamentally affect research conferences and publishing. The emergence of cyberspace and electronic publications show how information can beget information and now, one site could lead to another in any others. Information technology provides the researcher in social studies with information without any restriction of time, space, or even format. Large information is obtained from a single CD-ROM. A researcher in Social studies can visit the libraries of universities of Oxford, Harvard from his desktop to conduct literature and searches for relevant data to his work. The researchers can

download, print, and even order online needed materials. With these, researchers can obtain any information on almost all subjects from all over the world.

Information and communications technology provide the medium for cultural transmissions, skills acquisition, preparation for working life, peer group relations in Social studies. Neater lifestyles have been assimilated by oriental nations through contact with the internet. Music, dances, dressing, and mannerism in Social studies are made life through high profile internet-based programs that project pictures, maps, cities, and towns. Computer learning packages and the web can offer a variety of opportunities for learning Social studies, ranging from non-interactive content provision to highly interactive student-centered learning experiences. Social studies researchers could use web for communication amongst themselves via e-mail, newspaper and discussion, lists, video conferencing for both local and global communications, and telecollaborative projects (Ojo and Adu 2018).

ICT Education aims at skill importation to the social studies learner. Internet-based learning environments assist the learner to acquire skills in specific deserved disciplines. Hence, one can become a Microsoft certified engineer by applying, studying, and writing the examination online. ICT included education prepares the educated person for life long experience in the chosen profession. Information technology aids this preparation in a variety of ways. The internet for example provides an avalanche of information on job opportunities. There are web-based job agencies that match job seekers' curriculum vitae with employment vacancies. One can also prepare to work in an organization or city by obtaining necessary information about the organization or city from the appropriate website (Babalola and Awolowo 2016).

Information technology has always fulfilled the social functions of the caretaking of youths, especially for working-class parents. The provision of boarding facilities, from primary to university levels, releases the energy of parents to achieve other professional goals and aspirations. Through a deliberate combination of learning and leisure, educational institutions provide an enabling environment for young people to grow and develop into responsible adults and citizens. Information technology institutions and professionals have the required ICT tools, techniques, and creativity to get young people excitingly engaged (Adu, 2015).

Internet-based facilities and services have opened the wide-ranging possibility for professional communication, cooperation, and peer group contact. Adu (2015) noted two main areas where the internet promotes peer-group relations: Listserv e-mail can be used as a tool for sharing information swiftly and on a wide-scale by using listserv. Here, every research sent to the listserv is distributed to all members of the listserv. Through listserv jobs, shareholders, meetings, and conferences could be posted. The second one is the Newsgroups. This does not send messages to members' e-mail addresses. Instead, members have to go to the newsgroup to read the mail.

The rebuilding process of developing countries must begin now if they are to remain relevant to the international educational system. This is because of the fact that developed nations' educational system is being operated on the wheel of strong information technology support systems. Secondly, this lies in the area of computer literacy and this is the basic computer skill necessary to operate and survive in the current information technology revolution. Social studies graduate without computer literacy will become uncertainly absolute both personally and professionally. Various institutions of learning according to Babalola (2010) have started to adopt

ICT to improve classroom practices such as admission, instructional process, examination and supervision, socialization process, graduation process, and absorption or transition process.

Quality of education depends on the characteristics of students admitted to the institution of learning. So, the interaction of digital advances in the process of admission will minimize resources and efforts, improve learning outcomes, and enhance the internal and external efficiency of the Social studies learning system. The process can further be made faster by adopting by integrating the online registration into the process by using a database that is driven by the website portal. By adopting a mobile registration system in which the mobile telephone is used to track admission and by authenticating candidate identities using fingerprint scanning.

Quality instruction in Social studies classrooms depends on both out-of-school and school factors. The school factors are teachers, libraries, textbooks, time available for teaching, learning and teaching curriculum, and teaching-learning technology. Some of the useful advances in technologies that could be used to improve the instructional process are; electronic instructional software, electronic presentation equipment such as interactive whiteboard, projectors, audio-visual compact disk (CD/DVD) tapes, audio and television learning. In fact, many institutions of learning both secondary and tertiary have integrated the modern teaching-learning technologies into the processes of academic, professional, and practical instruction. Also, efforts have been made at the institutional levels to integrate modern technologies of ICT to the libraries and textbooks production or web-based modules. In fact, these concepts are already being incorporated into the accreditation criteria at the tertiary levels in the country (Adu and Galloway 2015).

Excellence in the examination paper, moderation, invigilation, and security depends on the availability of enough resources as well as teachers who are ethically sound to handle the examination and supervision process. The advance in technologies could be used to facilitate examination and supervision of Social studies in the following ways: online testing and examination portal, mobile examination, the security of the examination process through monitoring of activities of students and examiners by the use of audio, visual equipment and the use of biometric identification. The socialization process involves co-curriculum activities such as unionism associations, clubs, games, sports, and excursions. Excellence in socialization is pivotal to education since learners and teachers are expected to connect very well with the community. Institutions of learning where Social studies is a discipline that could promote social skills through a functional portal and building of a website to encourage remotely monitored e-group, e-club, and e-association among students. However, it is a common knowledge now that some students at the tertiary level in the country have internet mentors, friends, and pals (Adelabu and Adu 2015).

Obviously, the advances in computer and information technologies can speed up the graduation process with increased accuracy. Institutions of learning could adopt the online transcripts, school management software, and grading modules in dealing with graduation matters. Some institutions of learning in Nigeria have web-based methods of releasing examination results to their graduates who usually buy “pin cards” to gain access to their results. Excellent Social studies classes can be determined by the nature of observation of graduates into the labor market or the smoothness of transition to the next level of education. To achieve these, institutions of learning could use advances in information and communications technology to improve the nature of absorption and or the smoothness of transition of school teachers and graduates to the next upper level of education. Some of the technologies may include enrolment management software, online registration, and online tracking of school leavers and graduates (Adu and Mireku, 2016).

Information and communications technology (ICT) according to Akinola (2015) are designed for processing Social studies data, for exchanging information and for using the information to improve knowledge. This position implies that ICTs are the sure quintessential tools for research and researchers in all fields are expected to arm themselves with the knowledge and skills of how to use them to boost their research productivity. The process of conceptualizing and designing research requires the synthesis and application of ideas via communication with different information sources which could be people, institutions, and documents. ICT facilitates such processes by providing fast modes of communication with people individually and in institutions. An increasing proportion of the documents that must be consulted during research are now available in networked computer systems or in computer media such as CD-ROM.

The e-mailing mode of communication has found important applications in the area of fast and cheap information service, documentary delivery and data exchange, bulletin boards, listeria, computer conferencing, and distance education. The internet browsing facility has also found important applications in the areas of remote logging, and file transfer protocol (FTP), World Wide Web (WWW), and online searching. Internet facilities are now used in libraries for inter-library information requesting (e-mail) document delivery (by the file attachment facility), current awareness services (through bulletin boards and lists), and database searching (online of remote, databases). In Social studies research, internet facilities have been used in mediating long-distance computer conferences, discussion, working groups, and long-distance educations. (Adu, 2015).

CHALLENGES OF ICT ESTABLISHMENT IN NIGERIAN SOCIAL STUDIES CLASSROOMS

Babalola (2010) identified the challenges of power, low teacher readiness, financial constraints, narrow access to computer and internet in the rural areas. Electricity plays a significant role in the socio-economic and technological development of every nation. Hence, electricity poses serious challenges in developing countries like Nigeria. Electricity generation, transmission, and distribution have been openly acknowledged by government officials in Nigeria as a major challenge to the country's development. The cost of maintaining a generator could become unsustainably very high that institutions of learning depending on it often prefer to use the traditional classroom practices which due to its maintenance cost appears to be more cost-effective than the modern one.

The second challenge is the issue of low teachers' readiness. Most of the teachers who were trained under the old dispensation found the new teaching technologies very difficult and resist them. Another very important issue is the cost of purchase and maintenance of equipment. The issue of cost is a vital one in a country where poverty is prevalent. Considering the poverty level in Nigeria, it is obvious that the average Nigerian family would find it difficult to acquire a set of computers or subscribe to the internet regularly. However, there is a limit to what the government can do on education in the face of competing demand from other sectors of the economy. It was almost impossible for some state government to sustain their computer education programs owing to financial constraints.

Computer maintenance has remained very problematic since the inception of the Nigerian National computer policy in 1988. Babalola (2010) found that although the national policy

provides for routine repairs and maintenance to be carried out, public school computers were hardly ever maintained while private schools' computers are being regularly maintained.

Closely linked to the high poverty level in Nigeria are the twin issues of slim access to computer and internet facilities especially in the rural areas. Many secondary schools in rural areas lack laptops, projectors, video recorders, talking books, and floor robots. Almost all the children and youth living in rural areas in Nigeria have no access to computer and internet facilities and they compete with their counterparts in the cities. Hence the implication of this could lead to a wide digital gap and the wider socio-economic disparity between the rich urban students and poor rural students.

Isah (2014) also highlighted the challenges of infrastructure, policy implementation challenges, planning and data problems, ICT curriculum, complex educational structure, politics, and personnel challenges.

- **Funding Education and ICT:** Isah (2014) observed that a distinction was made between the rural and urban educational provision in terms of cost and quality. It was fundamentally targeted at general education and also digital education. To fund ICT in secondary schools, there will be a special fund to be provided that will enable the government to do that. The absence of these funds may have prevented adequate planning for the administration of ICT in schools.
- **Infrastructure:** In a document by Isah (2014), the importance of ICT for developing nations was well emphasized. He emphasized the role of infrastructure that comparison was effected between the cost of ICT infrastructure among developed and developing nations. The challenges on the pathway of developing nations were so clearly spelled out that it takes quite some understanding to get the point. He pointed out clearly that the cost of a band within sub-Sahara Africa is ten times the cost in the developed world. Also, personnel for maintenance is lacking while facilities that could facilitate the utilization of ICT is wanting. Many Nigerian secondary schools are yet to be connected to electricity from the mains while it is practically impossible to purchase a generator for a good ICT foundation. With this, most schools are forced to grapple with most such challenging factors like hardware, software, electricity, funds, personnel, etc. among others such as political influence and power politics.
- **Policy Implementation Challenge:** There seems to be a wide dichotomy between the type of education provided between standard public and private secondary schools. In the city of residence of this researcher in Nigeria, it could be seen that education provided by the standard private sector far outweighs the education provided by the public sector in Nigeria in terms of quality but access to the various types of education is a function of cost, choice, and means.
- **Planning and Data Problems:** Despite concerted efforts, planning has been a severe problem for schools, colleges, universities, and governments in Nigeria and other developing countries. In the case of Nigeria, plans have never really succeeded due to the absence of data and this makes nonsense of any plan. The absence of accurate and updated data has been a problem for Nigerians.
- **ICT and MIS Curriculum:** Isah (2014) observes that in Nigeria, there was an ICT policy. But as of today, Nigeria cannot effectively boast of an ICT policy. Also, the failure of the

objective of the government to attain its ICT policy that required that all government employees must be ICT compliant by the year 2002 has brought other issues in its wake. Another objective which the government pursued vigorously towards the end of the last millennium was for all government business to be conducted electronically. All these failed due to many of the factors already disused as challenges. To appear to combat these challenges, government both state and federal must introduce specific subjects into the Nigerian secondary school curriculum that are examinable such as ICT. This should be followed by the building of a well-equipped computer laboratory with adequate personnel.

- **Complex Educational Structure and Politics:** Arising from the 1999 constitution the education sector has been decentralized in such a way that it is on the concurrent legislative list. It implies that education is provided by federal, state, local government, and private sectors. This automatically removes the unity of command. With the current democratic structure in place in Nigeria, there appears freedom with the Nigerian education laws from states and local governments and in terms of the private sector government services only as a regulator. With this, most state governments might not share the vision of the government in power on educational issues especially in the area of implementation. Again, private schools appear more focused due to the private initiative concerning profit.
- **Personnel Challenges and Equipment Maintenance:** Isah (2014) explained that when teachers are sent for in-service training, their main concern most time is the financial allowances allotted to the exercise and hence in most cases the objectives of the programs are not met. ICT has become very evident between the last two decades of the 20th and 21st centuries. As at today in Nigeria, though ICT is introduced into the curriculum of pre-service teachers, teachers in service who are at leadership positions do not have such skills. Absent skills include computer operation possession of a valid e-mail address for communication or being able to log into the World Wide Web, it is quite unfortunate today, a visit to most schools will show teachers completely devoid of knowledge of the ICT inclusive of universities and cutting across gender. In addition to this, the adulteration of ICT products in Africa and Nigeria to gain access has further exacerbated the issue. Fake ICT products find their ways through the ports into the Nigerian markets with unwary consumers bearing the brunt of the unethical grade of businessmen.

WAY OUTS OF THE PREDICAMENTS

- **Planning for ICT:** The planning must take cognizance of school location, infrastructure, and funding.
- **Personnel and Maintenance:** The personnel is core issues to the success of any ICT program and the personnel to man the core aspect especially instructions and engineering aspects must be on the ground. The government and other education providers should then begin a vigorous process of teacher re-orientation and re-education for the new ICT world.
- **Flexible ICT Curriculum:** The curriculum of the ICT should be flexible especially at it concerns effectiveness. The curriculum precedes implementation, while the government should serve as a financier, regulator, and the provider of the curriculum. The private sector

should be allowed to partner with the government in the provision of facilities and implementation.

- **Infrastructural Acquisition and Safety:** The absence of critical infrastructure is a significant problem in Nigeria's educational system. Computer laboratories must be part of plans that are synergized at all levels to ensure safe housing and accommodation at all levels as inclusive of federal, state, local government, and private sectors. A core challenge today is the problem of electricity in Nigeria which must be provided also with other infrastructural lacking in schools

CONCLUSION

Information and Communications Technology (ICT) has so dramatically affected the world both positively and negatively in and out of school is now changing the teaching and learning of Social studies. ICT in schools is changing from relatively simple devices to more complicated, sophisticated, and engaging environments. Information and Communications Technology and Social studies provide an effective support system to enable education to fulfill its social and system functions. Social studies must be rebuilt on the foundation of strong information and communications technology infrastructure. Computer and internet literacy are strongly essential for all cadres of Social studies if they are to remain relevant in the future. Educational planners in Social studies and policymakers must accord information and communications technology a priority of place in our future development plan. Premised on this, it will lay a solid foundation for the socio-political and economic development of the nation. In addition to this, ICT at primary and secondary school levels will usher Nigeria into the committee of established nations in the nearest future. If ICT is successfully implemented in Nigerian primary, secondary and tertiary institutions, a marked departure from previous failures in educational plan implementation would have been achieved.

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RECOMMENDATIONS

Social studies educators must engage in constant self-development in information and communications technology. Social studies of the future need this skill to appropriately guide their students. They should continuously use computer software in teaching the subject as it guarantees improvement in students' achievement and retention at large.

Government ministries at federal, state, and local levels should train Social studies teachers on the application of information and communications technology. Special attention needs to be accorded to computer literacy and operation in the secondary schools and relevant computer-assisted instructional packages should be developed for use within the Nigerian school system

The government should provide a personal computer to Social studies teaching, research, and senior administrative staff of the Nigerian primary, secondary, and tertiary institutions where Social studies is being taught. To do this, federal, state and local government ministries of education should provide for the purchase of computer and other ICT materials. The social studies curriculum of our educational set up needs a radical overhaul to make ICT focused and friendly. This is important if they will produce the necessary ICT skills. Curriculum planners such as the Nigerian Educational Research and Development Council (NERDC) should consider a review of the curriculum for Social studies in secondary schools to incorporate computer-assisted instruction.

It is also recommended that federal governments should ensure a sustainable supply of electricity to all institutions of learning both in the urban and rural areas before embarking on the implementation of any policy on ICT education. This should be treated as a must-do precursor in the process of interacting advances in ICT into the Social studies teaching-learning process. The private sector should be actively encouraged to provide internet facilities within the reach of more pupils and students. To encourage this, the government should provide rural electrification and internet facilities in rural areas to enhance the application of ICT in the Social studies classroom in these often-neglected areas of the country.

Non-governmental organizations and philanthropists should be reoriented and involved in providing the necessary ICT facilities needed for both private and public educational institutions. Orientation courses via symposia, conferences, debates, seminars should be encouraged, mounted for teachers and emphasis should be laid on the teaching of values of ICT. Social studies departments at all levels should be well funded so that students' interests in information communication technology ICT can be raised effectively and efficiently. Higher institutions' libraries where Social studies is being taught should be fully automated to be part of cyberspace libraries. This is because it could be so amazing how libraries of higher institutions hope to support teaching, learning, and research without adequate access and connectivity.

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