The Utilization of Information and Communication Technology (ICTs) for effective teaching of social studies in secondary schools in Delta State

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There is a universal recognition of the need to use information and communication technology (ICTs) in the educational systems of Nigeria in teaching social studies in secondary schools in Delta state as we are in the era of digitalization where the free flow of information via satellite and the internet hold sway in global dissemination of knowledge in diverse subject area. Nigeria is way slow in embracing the integration of ICTs for teaching in secondary school curriculum. A great deal of instructional and administrative work in secondary schools in Delta state is still carried out manually. This is as a result of lack of high cost of computer hardware and software for their application, weak infrastructures, selfish political ambition of individuals, diversion of fund for other purposes in schools, inadequate skilled ICT professionals/teachers, lack of appropriate organizational recognition, unwillingness of teacher to adapt to new trends of teaching, inadequate fund to acquire furniture, textbooks, befitting classroom, cost of subscription to the internet on a regular basis are stumbling block on the adoption of ICTs in secondary schools in Delta state. In this modern society, schools need ICTs to aid their teaching and learning and educational management so as to meet up with the technological development of the 21st century. In the foregoing findings, the following recommendations were made: that the schools should make sure they have a web page, provide different kinds of computers and Internet access to students, make provision for school to purchase standard software package to manage the creation of course web pages, recruit staff with ICT skills to assist instructors with educational technology, Make provision for classrooms designed for multimedia presentations, special funds of professional recognition for innovative uses of technology in teaching be given to schools in order to have colleagues working on grants that support electronic teaching, the institution should have a plan for on-line course materials, the use of the Internet should be made compulsory to staff and students, and the on-line materials should be made accessible to all staff and students. This paper therefore examines the need for the utilization of ICTs for effective teaching of social studies as a subject in secondary schools in Delta state.

Key words: Information and Communication Technology (ICTs), effective teaching, social studies, secondary schools, Nigeria.

INTRODUCTION

The training of teachers in different subject areas as a discipline involves various methods of approach and operations. The discipline social studies, centres on systematic study of the principles and skills pertinent to all aspects of operations, resources and administration. As new concepts of learning have evolved, teachers are expected to facilitate learning and make it meaningful to individual learners rather than just to provide knowledge and skills. Modern developments of innovative technologies has provided new possibilities for teaching professions, but at the same time have placed more demands on teacher to learn how to use these new technologies in their teaching (Robinson and Latchem, 2003) These challenges ask teacher to continuously retrain themselves and acquire new knowledge and skills while maintaining their job (Carlson and Gadio, 2002) Then what can be done to help teacher meet these challenges? Indeed, we are left with no option other
than to train them.

The integration of ICTs in teaching of social studies as a subject in secondary schools came as a burning need on how to improve on the physical, social, political, cultural, scientific and technological environment that we live in. Social studies as a subject is relatively new in Nigerian Schools. Though social studies has been in use since 1905 in America, but the subject was accorded official recognition in the report of the committee on social studies of the commission on the re-organization of secondary Education on the national Education Association of the united states: therefore in 1916, the earliest definition of social studies emerged. It was defined as those whose subject matter relates directly to the organization and development of human society and to man as a member of social groups 1916(Cross 1958).

Preston (1963) noted that social studies are those portions of the social sciences that are selected for use in teaching. Michaelis (1956) writing on the concept of social studies, stated that it embraces materials which are related to human relationships drawn from history, geography, political science, economics, anthropology, sociology, science and the arts. Children build competence in basic social processes and skills essential in democratic living. To this end, Ololobou's(1986) posited that social studies is anchored on effective citizenry of an organized, integrated study of man and his environment, both physical and social, emphasizing cognition, functional skills and desirable attitudes and actions. Social studies is a response towards a goal-oriented education that is geared towards sensitizing young people to solving personal and community related problems that require the use of ICTs hence this research.

It is universally accepted that social studies students need the chance to develop faith, self-expression and confidence. Also they need the ability and skill to learn about themselves, the societal problems and the wider communities in which they live. Social studies education has the following objectives to attain:

i. Creating an awareness and understanding of our evolving social and physical environment as a whole in its natural, man-made cultural and spiritual resources together with the rational use and conservation of those resources for national development.

ii. Developing a capacity to learn and to acquire certain basis skills including not only those of listening, speaking, reading and writing and of calculation, but also those skills of hand and head, together with those of observation, analysis and inferences which are essential to the forming of sound social, economic and political judgment.

iii. Ensure the acquisition of that relevant body of knowledge and information which is an essential pre-requisite to personal development as well as to a positive personal contribution to the betterment of mankind

iv. Developing a sympathetic appreciation of the diversity and inter-dependence of all members of the local community and the wider national and international community.

v. Developing in students positive attitudes of togetherness, comradeship and co-operation towards a healthy nation, the inculcation of appropriate values of honesty, integrity, hard work, fairness and justice at work and play as one’s contribution to the development of the nations.

vi. Promotion of an understanding of the social problems of their locality and finding possible solutions to them.

vii. Development of the ability to think reflectively and come to independent conclusions.

viii. Creation of awareness that discipline is essential for an orderly society and

ix. Demonstration of flexibility and willingness to accept necessary changes within a system. that is, education, government, or law, for the good of all.(Federal Republic of Nigeria,1977, Adaralegbe 1981, Aina Adeyoyin, Obilo and Ahmadu 1982).

Osakwe and Itiedjere (1993) stated that the objectives of social studies education in Nigeria may be categorized into three broad areas namely, information learning, skills attitude and values learning. Writing further, they said that there is no general consensus as to the goals of social studies, but that there is a general notion that social studies has some influence on the beliefs, and values of its learners and that it invariably produces good citizens for the overall development of the nation.

The Role of social studies Education in National Development in Nigeria as stipulated by (Okobiah 1984)

The Indispensable Role of social studies education in National development can be delineated thus:

(i) The prime concern of social studies education is the production of effective citizens. Effective citizenships connotes, among other things:

- Sensitivity to one’s environment
- Active participation in the polity
- Democratic-oriented mind and practices
- Willingness to assume and perform civic responsibilities.
- Obedience to the laws of the land
- One equipped with intellectual skills essentials for rational decision-making and sound judgment
- Dogged defense of one’s rights
- Ability to understand, respect and accommodate other individuals
- Habits essential for effective social living
- Positive relationship with the political class
- Harmonious co-existence with other members and groups in one’s polity;
- Possession of nationalist and patriotic spirit geared towards societal improvement.

These citizenship ideals, norms and values essential for National development are inculcated by social studies
education. The study on Madubuike (1985) has confirmed this. It is only effective and productive citizens, who are products of social studies education, who would in the predominant climate of selfism and in the midst of Nigerians mad hunt for materialism, contemplate to contribute to national development.

(ii) Social studies education, more than any school subject, emphasizes affective learning. Okobia (1984:96) lends import to this when he quipped that: "...as far as social studied....(is) concerned, the other skills become important as far as they hope in facilitating the development of....values...." Some of the indispensable values and attitudes for national development which social studies education inculcates in the learners are co-operation, dedication, hard work, interdependence, tolerance, true sense of nationhood, loyalty, commitment, unity of purpose, patriotism and integrative nationalism.

What are ICTs

Information and communication technologies (ICTs) is a term which is currently used to denote a wide range of services, applications, and Technologies, using various type of equipment and software, often running over telecom networks (Heathcote, 2000). ICTs include well known telecom service such as telephone and fax. Telecom service used together with computer hardware and software from the basis of a range of other service, including email, the transfer of files from one computer to another, and in particular, the internet, which potentially allows all computers to be connected, thereby giving access to source of knowledge and information stored on computers worldwide (Heathcote 2000). Its Application includes videoconferencing, teleworking, distance learning, management information system, stock taking; technologies can be said to include a broad array ranging from 'old' technologies such as radio and TV to 'new' ones such as cellular mobile.

There is now a great deal of evidence that the diffusion of Information and Communication Technologies (ICTs) over recent decades has helped to enhance the relative demand for skilled labour (Berman, Bound and Machin, 1998; Acemoglu, 2002). Indeed, the skill-biased nature of the ICT 'technological revolution' is one reason why pay-offs to ICT investments at firm and industry level have taken time to develop, in contrast to some previous new technologies such as assembly-line equipment and organization which were complementary with low-skilled labour and thus capable of being implemented relatively quickly (Caselli, 1999). While many studies of the relationship between ICTs and skilled teachers are in demand since the mid-1990s, there has been a tending focus on the impact of ICT utilization. This has therefore highlighted the role of highly-educated or skilled workers in facilitating early adoption of new technologies (Nelson and Phelps, 1966; Welch, 1970; Schultz, 1975; Bartel and Lichtenberg, 1987). In a recent study of the relationship between information technology and the demand for educated workers at industry level in the US, Chun (2003) distinguishes carefully between the adoption and use effects of information technology and finds that both have contributed substantially to the increased relative demand for college graduates.

ICT as aids to teaching and learning of social studies in schools

The role of Information and communication technology in teaching and learning of social studies is rapidly becoming one of the most important and widely discussed issues in contemporary education policy (Rosen and Michelle, 1995). Most experts in the field of education agreed that when Information and communication technology is used in the teaching and learning processes, it will improve and boost the ego of the schools to a large extent. To this end, Poole (1996) has indicated that computer illiteracy is now regarded as the new illiteracy. This has actually gingered a new and strong desire to equip schools with computer facilities and qualified personnel necessary to produce technologically proficient and efficient students in developed countries of this world. Singapore schools provide a rich diversity of experiences to help students grow holistically. Apart from the academic curriculum, students can develop themselves in music, arts and sports through co-curricular activities. Participation in community service is part and parcel of school life. These help nurture in students qualities such as creativity, confidence and perseverance which are life skills essential in a rapidly changing world. These form integral part of social studies curriculum (Rosen and Michelle, 1995). It is known that good teachers and school leaders form the cornerstone of Singapore's education system. Education software is becoming sophisticated, as such it is dynamic, hyperlinked, multimedia in nature, and interactive. ICT has allowed learning to take place in many modes: online, self-paced, personal or collaborative. Many popular educational software products have enjoyed wide acceptance. An edutainment approach is often used in making lessons more lively and fun, especially for young children. ICT applications for education are also made for classroom management, timetabling, activity planning, personnel administration, and communications with parents. In Singapore, the Ministry of Education keeps a repository of teaching and learning resources for sharing among schools.

E-learning encompasses learning enhanced and delivered by ICT. ICT for delivering learning is very similar to ICT for e-commerce or e-business. E-learning may imply self-study, instructor-led events or small group collaboration. Software for e-learning of social studies includes:

- Asynchronous Web-based Software (for example, Blackboard(TM))
The first generation of e-learning systems included only authoring tools. The second generation included classroom management systems, along with lesson content management systems. Together, this came to be known as Learning Management Systems (LMS). Third generation systems introduced real-time virtual classrooms. The advantages of e-Learning include reduction in cost and time, the ability to overcome distance, and the convenience of sharing material and courseware. E-learning makes globalization of educational quality an achievable reality. To individual learners, e-learning provides benefits such as multimedia richness and efficiency, and the possibility of self-paced study anytime, anywhere. Teachers benefit from the ability to update and distribute materials easily.

Integrated Virtual Learning Environment, (IVLE,) is a learning management system used in the National University of Singapore (NUS). IVLE which can be used as well by teachers in teaching social studies in secondary schools in Delta state offers a wide range of features such as discussion forums, chat rooms, class group setups, bookmarks, calendars, work-bins and project tools. Lecturers at NUS use IVLE tools to communicate with students and manage course material. For instance, a work-bin is used for uploading lecture notes and receiving assignment submissions from students; announcement boards are used to disseminate information effectively; and discussion forums allow communication and knowledge sharing among tutors and students, with everyone on an equal basis. This is usually shown in screenshots of IVLE home, work-bin and discussion forum in IVLE during the process of such exercise. In a learning environment such as IVLE, together with a wide selection of professionally developed educational software and a reliable central depository management system, teachers are directly teaching facts less and less and are telling students more and more the method of learning. Teachers are becoming facilitators in the learning environment. ICT enables interactivity and the reach of its network. It facilitates the learning by collaboration, interaction and participation in virtual teams. The content of education will shift further away from rote learning towards discovery, research and collaboration. Apart from improving their teaching methods, ICT gives teachers access to master teachers or mentors through computer networks. A mentor can conduct a workshop which teachers anywhere can participate in as long as they are connected. World-class universities like MIT are already making their lesson packages available on the Internet. This work adopted the Welliver’s Instructional Transformation Model (Welliver 1990) that institute teachers progressing through five hierarchical states in order to integrate ICT effectively. Table 1 below shows these five states.

The Welliver model presumes that integration of ICT proceeds in a linear manner from the initial familiarization with the technology to the utilization of technology, then moves towards the beginnings of manipulation and eventually to more innovative ICT usage.

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Table 1: Welliver’s instructional transformation model for ICT usage in teacher education

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Every educator looks at integrating technology and its challenges from a different perspective. They tend to focus solely on how it affects them in terms of their workload, impact on students, their current skills/knowledge, time management, motivation and vision. It is the author's belief that the barriers to efficient technology integration can be overcome through effective leadership, training and a commitment to enhancing teaching and learning using technology. Shelley (2004, pp. 6.10-6.11) argues that with proper training in using technology teachers:
- Create relationships between active learning and active teaching
- Develop an appreciation and an understanding of the potential of technology
- Learn to be authors of multimedia software
- Develop leadership skills and become role models for successful integration.
- Understand the power of technology integration
- Design integrated curriculum activities
- Learn the benefits of technology in the classroom
- Develop ownership of the technology through authentic experiences
- Learn to motivate students with technology
- Achieve success by becoming informed and reflective decision makers
- Become advocates for technology integration

These criteria for effective use of technology suggest that there are a number of complex interactions between the user and the technology and that these interactions are not explicitly linear, as suggested by Welliver. ICTs and Teachers of social studies Education: “If a country is to be corruption free and become a nation of beautiful minds, I strongly feel there are three key societal members who can make a difference. They are the Father, the Mother and the Teacher.” - Dr. A.P.J. Abdul Kalam, Former President of India

The knowledge revolution and role of the teacher
Burnett (1994) posited that “the pace of technological revolution and emergence of a knowledge society can change the traditional role of the teacher and the students”. Traditionally, the teacher used to be the source of knowledge for the students. There is some cooperation among students to explore new knowledge. In many cases, the teachers do not possess adequate knowledge to supplement the view of the student and the main source of knowledge remains limited to text book. Therefore the development of ICTs changes the epic centre of knowledge. At present, in a number of cases the student is more informed than the teacher. Furthermore, there is likely to be confusion in the teachers mind about his/her new role in relation to the use of these technologies that is, teachers find themselves in a situation where they are no longer the principal source for delivery of information. In the new phase of the knowledge revolution, the source of knowledge has shifted from a one source to a different source. In other words, we can say that there is a decentralization of the knowledge source. This has an overall impact on the development of learning abilities among the children. There is a need to facilitate training on ICTs for teacher both at the pre-service level and in service level.

ICT - a solution for the improvement of the expertise of teacher
ICT enabled distance education is poised to rule the world. This would not only strengthen the elementary education needs of the country but would also increase the dependence of education on ICT. Technological development always warrants transition to newer technologies by jeopardizing the cost effectiveness of the distance education programme. Retaining the already existing technologies for a considerable period of time and subsequently embracing new technologies should have fine balancing, so as to improve also the quality of education. India is one among the few countries in the world, which has not allowed the expenditure on education to shrink over the years. The increase in expenditure on elementary education alone over the last four Five Year Plan periods has been more than the increase in expenditure on education as a whole. With all the inputs around, there is only hope for enhancing the quality of education at the elementary stage (Visscher, Wild, Smith, and Newton, 2003).

Role of Teacher in Enhancing Learning Achievement of the student
Education, as we know is instrumental in ensuring that the future generation is well informed and competent. Unfortunately, because the quality and accessibility of education varies so greatly between regions, the school system of our country often fails to deliver the level of education necessary to ensure such competency. Many schools have limited resources for buying books, stationery, furniture and other classroom materials. Teachers lack adequate qualification and training to engage their students in learning. Their lesson plans are most often outdated or irrelevant. These jeopardize the available quality of education. ICT enabled distance education, to a great extent, can combat this problem. Because the present day distance learning is ICT-enabled, most of the programmes include computer and Internet training to facilitate the use of essential technology.

The acquisition of fundamental ICT skills among teachers and students helps knowledge sharing, thereby multiplying educational opportunities. However, all teachers are not willing to introduce new technologies to themselves first and subsequently to their students. In order to implement ICT-driven distance education programmes, the teachers must first understand and be comfortable with the technologies. They must be given opportunities for acquisition of a new knowledge. This can begin by promoting computer-training programmes for teachers. Monetary incentives can be offered as means of motivation. The use of ICT can effectively enhance learning where traditional models have failed. While these technologies offer advantages, they also pose challenges. Several studies have been conducted in the west about the use of ICT in Middle and High School students. One such study is by Martin Carnoy which is entitled Education: Possibilities and Challenges-2004-05 Academic Year. According to him, ‘Using ICT as a supplement to improve test score results, may, however, be seen to be more effective than traditional teaching one, hence is much more applied.’ He also comments about the use of ICT for teacher and administrator
training. ‘Private firms such as Sylvan quickly saw the potential of ICT as an in-service training medium for teachers, and this now forms an important part of Sylvan’s extensive ICT learning systems... An entirely different approach to teacher improvement is web access to course content, lesson plans and network to other teachers. This database or content, approach is used by Net Schools and the IBM foundation. Both these organizations focus on using ICT as teacher training for course content rather than improving pedagogy.’ (UNESCO, 2000) It can be seen that Distance Learning Technologies have been employed in the education of teachers both at pre-service level and at the in-service level. UNESCO has published a summary of case studies conducted in nine countries in different parts of world and most of these studies reflect the necessity of having multi-prong strategies for teacher education and to improve their expertise. For example, 'in China television has been tremendously used for teacher education. In India, there is a multimedia approach for teacher education. In UK, due to heavy shortage of teachers of Mathematics and Science, the Department of Education invited tenders...the Open University was successful in this and the result was Open University’s Post Graduate Certificate of Education (PGCE) programme, where ICT plays a large role in enabling interaction between students, tutors, regional support centres and programme providers.

ICTs and Teacher Education
There are varieties of approaches to professional development of teachers in the contextual usage of ICTs in education. Professional development to incorporate ICTs into teaching and learning is an ongoing process and should not be thought of as one ‘injection’ of training. Teachers need to update their knowledge and skills as the school curriculum and technologies change. Two aims of teacher training are fundamental: teacher education in ICTs; and teacher education through ICTs.

Teacher education in ICT
The most obvious technique for professional development for teachers is to provide courses in basic ICTs knowledge and skills. It is necessary for teachers to become skilled in operating the new technologies and in exploiting them effectively as educational tools. Teachers must master the use of information – skills of research, critical analysis, linking diverse types and sources of information, reformulating retrieved data – if they are to teach their pupils to develop these same skills. There is need for more emphasis placed on training in pedagogy, as opposed to the current trend in many education systems where the major focus is on specialized knowledge in specific curricular subjects. Teachers must be adequately equipped with more didactic competencies so as to assume their new role as experts in the learning process.

Teacher Education through ICTs
ICTs can support effective professional development of teachers. Using ICTs as tools for training of teachers is as important as introducing the basics of ICTs to the prospective teachers. As sources of information and expertise, as well as tools for distance communication, ICTs can offer many new possibilities for teacher education. Teachers may through the regular use of these technologies. Use of new media, new rules of communication – even a new language – have to be learned.

Role of ICT in bringing efficiency of delivery mechanisms
Westera and Sloep (2001) stipulated that “Efficient delivery mechanisms is an important component of overall school management”. As such, ICTs can provide the efficiency of delivery mechanisms of educational services by supplementing conventional delivery mechanisms in the following manners:
- Technology’s capacity to reach learners in any place and at any time has the potential to promote revolutionary changes in the educational paradigm. This means eliminating the premise that learning time equals classroom time. Students can be encouraged to revisit the lessons/topics to reinforce learning without active intervention by teachers.
- Another illustration of efficiency is the domain of virtual laboratories. All school systems want to provide labs because science is empirical. But few schools have furnished them with equipment and supplies and fewer yet are willing to risk using them. Technology allows for video and digital demonstrations as well as digital simulation of laboratory activities in a very real manner; but without the risks and costs associated with laboratory experiments. Simulations will not replace hands-on activity completely. Rather, they prepare the learner to conduct real-life experiments in the same manner as flight simulations prepare the student pilot for test flying.
- Multimedia-enabled learning modules can be developed by a group of master teachers and instructional designers, which can then be shared with all schools to assure quality standards of learning delivery.
- Concerns about costs are always raised in discussions related to technology. Depending on the technology used, startup costs can be high but economies of scale are significant. That is, the more the technology is used that is, when more students use the product, the unit costs of producing educational content are decrease proportionately. Trade-offs must be considered as well when evaluating technology’s initial costs. Since over two decades ago, ICT was introduced into classroom practice and it has gained much attention and ever growing confidence in its effectiveness.

ICT is believed to be more than the core of the Information Society. It is supposed to be paramount to
the education of knowledge workers (Pelgrum, 2001). Although benefits of ICT use in education have been acknowledged (for example Hayes, 2005; Vichitvejpaisal et al., 2001; Higgins, 2003; Meijer, van Eck, and Felix, 2008) teachers do not seem to integrate it into their teaching activities (Cuban, 2001; Varank, and Tozoglu, 2006; Yang, and Huang, 2008) and, thus, the use of digital learning materials (DLMs). Failure to motivate teachers to use DLMs could make the development of such materials seem less rewarding or attractive. The lack of newly developed materials could in its turn lead to an increased underuse of DLMs, hereby completing a vicious circle. In the Netherlands, the Wikiwijs initiative aims at disclosing open DLMs for use in all strata of education. The effectiveness of this initiative depends largely on the actual use of DLMs in education. Therefore, important determinants of using ICT in education and the lack of ICT in classroom practice will be further investigated in the context of teacher’s usage of DLMs. More precisely, concerning DLM use basing on the Integrative Model of Behavior Prediction (IMBP: Fishbein, 2000; Fishbein and Yzer, 2004; Yzer, Capella, Fishbein, and Hornik, 2004).

Developing a theoretical model of Digital Learning Materials (DLMs) usage based on the Integrative Model of Behaviour Prediction (IMBP)

The IMBP constitutes the theoretical framework on which this current study is based. This model integrates the “theory of planned behaviour” (Ajzen, 1991), the “social cognitive theory” (Bandura, 1986), and the “health believe model” (Janz and Becker, 1984) and contains a number of critical factors which determine educational ICT use. A discussion of the IMBP will be followed by a brief review of literature in support of the application of this model in the domain of the advancement of the integration of ICT in teachers’ pedagogical practices. In the IMBP, dispositional variables are key determinants with respect to a specific behaviour, here teacher’s usage of DLMs in education. Although the model takes into account organizational variables, the main focus of the IMBP is on individual level characteristics. Attitude, self-efficacy and perceived norm are the most important dispositional variables in the IMBP. When combined, these factors are conjectured to influence behavioural intention which, in turn, is related to the actual behaviour.

According to the model, the intention-behavior relationship may be moderated by environmental variables (such as the non-availability of DLMs or the proper ICT infrastructure) and by teacher’s actual ICT knowledge and skills. Furthermore, IMBP considers the positive and negative outcome beliefs teachers have should they use DLMs (for example, DLMs give more variations during class and DLMs require more class preparation) to be antecedent variables of attitude. The antecedent variables of subjective norm concern teachers’ normative beliefs that important people (for example colleagues and parents) may think that they should use DLMs. Finally, self-efficacy antecedent variables concern the convictions (that is, the efficacy beliefs) teachers have that they can use DLMs and that they can overcome the impediments to use DLMs. An adaptation of the IMBP for the current domain (that is, the advancement of the integration of ICT in teachers’ pedagogical practices). This shows that the variables are grouped into proximal, distal and ultimate variables. Proximal variables include all the dispositional variables and, therefore, the terms dispositional and proximal are interchangeable. The distal variables encompass all the variables at the level of teachers’ characteristics and school organization, and the ultimate variables the determinants at the level of local, regional, and governmental organization.

A comprehensive review of the literature by Mumtaz (2000) resulted in a number of contextual as well as some dispositional variables influencing teachers’ use of ICT. Contextual variables include the environmental variables (in IMBP moderating the relationship between behavior intention and actual behavior), the distal, and ultimate variables (in IMBP, the effects of these variables are mediated by the dispositional variables), but exclude the individual level characteristics. The most influential contextual variables according to the Mumtaz study were access to resources, quality of the ICT infrastructure, perceived ease of use, incentives to change, support and collegiality in the school and school and national polices. Individual level characteristics found to be of importance were commitment to professional learning and background in formal computer training. A more recent study by Tondeur, Valcke and van Braak (2008) attempting to integrate both school and teacher level characteristics in an explanatory model of ICT use, found that gender and previous computer use were significant predictors of the adoption of ICT for pedagogical use. Contextual school level characteristics and contextual environmental variables found to be of importance were similar to the previously cited study (Mumtaz, 2000) and included availability of ICT (hardware and an Internet connection in the classroom), schools’ openness to change, presence of a school ICT policy and availability of ICT support. In a recent review of antecedents of laptop use among educators (Moses, Khambari, and Luan, 2008), it was found that gender, lack of time, technology competence as well as administrator and ICT support are important predictors of actual ICT usage. Moreover, this study also acknowledges the impact of attitude. Other authors (Cuban, 2001; Teo, Lee, and Chai, 2007; Kersaint, Horton, It has been argued that technology for teachers of social studies as a professional development is not a panacea – it is only a tool (Haddad 2002). To use this tool effectively and efficiently, teachers of social studies need visions of the ‘technologies’ potential, opportunities to apply them, training and just-in-time support, and time to experiment.
Only then can teachers of social studies be informed and confident in their use of new technologies (Bowes, 2003). Computer technology is becoming both more useful and more cost effective for many fields of teaching. And yet only you, the teacher, can determine whether these methods will prove effective in your classroom. Whatever you decide, remember that technology complements, but does not fundamentally alter, the elements of teaching (Uddin, 2003).

ICTs are a major in shaping the new global economy and producing rapid changes in the society. Within the last decade, the new ICT tools fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education—where and how learning takes place and the roles of students and teacher in the learning process (Bowes, 2003). Teachers education institution may either assume a leadership role in the transformation of education or be left behind in the swir of rapid technologies change. For education to reap to its full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies.

Teachers of institutions and programs must provide the leadership for pre-service and in-service teacher and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country (Bowes, 2003). To accomplish these goals, teachers of institution must work closely and effectively with primary and secondary school administrators, politicians and other important agencies, teacher unions, business and community organizations, and other important stakeholders in the educational system. Teachers of education institutions also need to develop strategies and plans to enhance the teaching—learning process within teacher education programs and to assure that all future teachers are well prepared to use the new tools for the learning (Bowes 2003). To this end, Bowes lay credence that “This is more crucial because the young generation is entering a world that is changing in all spheres’ scientific and technological, political, economic, social and cultural. The emergence of the ‘knowledge-based’ society is changing the global economy and the status of education (Bowes, 2005).

These new possibilities exist largely as the result of two converging forces. First the quantity of information available in the world—much of if relevant to survival, and basic well-being—is exponentially greater than that available only a few years ago, and the rate of its growth is accelerating. A synergistic effect occurs when important information is coupled with a second modern advance—the new capacity to communicate among people of the world. The opportunity exists to harness this force and use it positively, consciously, and with design, in order to contribute to meeting defined learning need (European Commission, 2001)

Using ICTs Resources for Teaching: Computers and related electronic resources have come to play a central role in education. Whatever your feelings about what some have called the digital revolution, you must accept that many, perhaps most, of your students are fully immersed in it. At the very simplest level, you will rarely receive a paper or other assignment from a student that has not been written with the help of a computer. Most of your students will have considerable experience with the Internet and will, whether you like it or not, make use of it for much of their academic work. Many of them will be accustomed to using e-mail as a normal form of communication. But it is not just students who find electronic resources valuable.

Teachers can benefit from these resources as well, by employing a series of useful tools. We stress the word “useful” because electronic resources complement, but seldom replace, more conventional teaching techniques. Electronic tools can make classes more efficient; lectures more compelling, informative, and varied; reading assignments more extensive, interesting, and accessible; discussions more free ranging and challenging; and students’ papers more original and well researched. Only you, however, can judge if these techniques advance your own teaching goals (Dymond, and Oestmann, 2002).

Five Promising Uses of New Technology

Of the many electronic teaching techniques that instructors have found useful, we have chosen five that we believe seem particularly likely to help significant numbers of teachers. All of these techniques demand an investment of time if they are to succeed, and your willingness to use them should be balanced carefully against other, perhaps more important, teaching priorities. But for each technique, there are both simple and complex ways of proceeding, and we will try to make clear the respective advantages and disadvantages. The five ways in which we suggest teachers consider using ICTs resources involve tasks that you will usually have to perform in any case. New technologies can help you perform them better and more easily:

**Administration:** The routine administration of courses (advertising a class, providing copies of the syllabus, assigning discussion sections, and getting out course news) can be more efficiently handled with a course home page, electronic discussion groups, and e-mail lists. These tools can also dramatically improve the continuity and the community aspects of courses, helping students to engage with and learn from each other and even from people outside the course.

**Readings/sources:** The Web and CD-ROMs provide a wider variety of secondary and primary sources (including visual and audio sources) than has previously been
available. With your guidance, your students can now gain access to materials that were once accessible only to experts because they were too cumbersome to reproduce for classroom use or too expensive for students to purchase. By taking their own paths through these sources, students can bring their own evidence and arguments into lectures and discussion sections, as well as write on a wider range of research topics.

**Papers/presentations:** Rather than performing assignments and taking exams from the teacher alone, students can perform more independent exercises in publishing, exhibit building, or assembling and presenting teaching units and other materials for their peers. A web archive of several terms' work can make the course itself an ongoing and collaborative intellectual construction.

**Lectures:** A computer with presentation software can provide a single tool for augmenting lectures with outlines, slides, statistical charts and tables, images, music, and even video clips. In addition to printing them as handouts, you can save in-class presentations in a web-compatible format for later review and discussion.

**Discussion:** Electronic discussion tools such as e-mail, conferencing software, and on-line chat services can seed discussion questions before the class meets, draw out your shy students, and follow up on discussions or questions on the reading between classes. For courses without face-to-face discussion sections, these tools can bring the course to life over great distances and help overcome scheduling difficulties.

The Necessary Tools: What you need will depend, of course, on what you want to do. Most teachers have computers, and most have at least some access to e-mail and the Internet. In many schools and universities, most students do, too. Many teaching opportunities are likely to be available to you, therefore, using equipment you and your students already have. Other techniques require more advanced technologies that you may or may not wish to purchase on your own, and that your institution may or may not make available to you. It should be obvious, therefore, that you should make no plans for using electronic tools before making sure that both you and your students will have access to the necessary technology.

**CONCLUSION**

But owning, or having access to, technology is usually only a first step. Even more important is learning how to use it. This is one of the biggest challenges facing anyone who wishes to use electronic tools, because the knowledge is not always easy to acquire. Many people, of course, are highly skilled in computer technology and know how to teach themselves to do almost anything. But many other people have limited computer skills, are easily intimidated by new and unfamiliar tasks, and tend to avoid doing anything that requires them to learn something very different from the things to which they are accustomed. If you fall in the latter group but wish to expand your ability to use electronic tools, you need to find help. Some institutions offer extensive assistance through their computer centers or their information technology services. Some departments have staff members or graduate student assistants who are hired to handle computer-related problems.

There are also many excellent reference works to help you learn about various electronic tools. Just as you must be sure that you have the necessary technology at your disposal before you decide to use electronic tools in your teaching, so you must also make sure that you have access to the necessary help in learning to use it. Keep in mind, finally, that the technology associated with computers and the Internet changes with breathtaking speed. Although certain skills will remain useful to you over long periods of time, there will be many things that will have to be relearned time and time again. The rapidity of change in this field can be bewildering and intimidating. But it is also the source of some valuable innovations that can be of great use to you. The importance of ICT is quite evident from the educational perspective. Though the chalkboard, textbooks, radio/television and film have been used for educational purpose over the years, none has quite impacted on the educational process like the computer. While television and film impact only on the audiovisual faculties of users, the computer is capable of activating the senses of sight, hearing and touch of the users. ICT has the potentials to provide higher interactive of users to develop their individual intellectual and creative ability. The main purpose of ICT “consist just in the development of human mental resources, which allow people to both successfully apply the existing knowledge and produce new knowledge” (Shavinina, 2001).

There is no doubt that teachers and students in secondary schools in Delta state will have incredible resources available if they have access to the Internet. The introduction of Information and communication technology into secondary school curriculum will bring a shift in the way teachers and students learn and interact. However, the integration of ICTs into teaching and learning in secondary schools in Delta state, there must be proper and adequate funding of the education. For some time now, there has been a steady decline of government budgetary allocation to education. The greatest challenge to the state and federal government is to ensure that budgets resulting from dwindling revenue and the need to satisfy other sectors of the economy do not adversely effect education. Delta state need to invest heavily in the Internet business and create enabling environment for secondary schools students to participate in downloading available and useful knowledge in the Internet.

Secondary school students in Nigeria as a whole are already behind their peers in developed countries, thus widening the global digital divide. Nigeria should join the
world links of development (world), a program initiated by the World Bank in 1997. The program has been establishing computer laboratories and bringing internet connectivity to secondary schools in developing countries around the world. It is also training teachers in these countries to acquire skills necessary to integrate information and communication technology into their classroom practices. The world program links secondary schools around the world in order to improve education, enhance cultural understanding and develop requisite skills in youth which will prepare them for the job markets in the 21st century.

Recommendations
Before introducing new teaching techniques, therefore, it is wise to make a quick inventory of your own and your school's electronic teaching resources. You will not want to discover halfway through a project that there are major obstacles such as insufficient equipment, inadequate support, or negative professional incentives. Answering a few simple questions can help you determine how practical and promising your planned innovations in electronic teaching are likely to be. While some answers may lie as close as your departmental colleagues, others might require conferring with departmental administrators, or computer support organizations.

Schools should make sure they have a web page. What courses have material on-line? Which departments and faculty have web pages? Where are they stored? (One source for help in understanding how your institution's web site works is the person who is in charge of constructing it, usually known as the webmaster. If your school has a web site, look at the bottom of the home page or on the credits page of the site to find the e-mail address of your webmaster.)

Provide different kinds of computers and Internet access to students. Do most students own their own computers? If not, are there long waits for access? Twenty-four-hour computer labs? Provisions for off-campus students? What software is on these computers? And what Internet browser (and version) do students typically use?

Make provision for your school to purchase standard software package to manage the creation of course web pages. These tools offer simple fill-in-the-blank on-line forms to allow you to place standard course material on the Internet, after which the program creates the course home page for you. If not, is there a school style sheet or recommended format for course pages? Does your school recommend or support any particular software for web pages? For presentations, word processing, spreadsheets, and databases?

Recruit staff with ICT skills to assist instructors with educational technology. Are there any work-study students or teaching assistants trained for new media support? What handouts or on-line guides have been prepared for electronic teaching?

That school should make provision for classrooms designed for multimedia presentations. Do any classrooms have Internet access? Are classes that are making use of this technology given extra technical or financial support?

Special funds or professional recognition for innovative uses of technology in teaching be given to schools in order to have colleagues working on grants that support electronic teaching. What is the attitude of your department and of school officials to this activity?

The institution should have a plan for on-line course materials. Does the school have distance learning plans (methods by which students with on-line access can take courses remotely)? How is your department's teaching and funding going to be affected by these plans?

The use of the Internet should be made compulsory to staff and students. The new media is so new that no clear guidelines have been established for determining fair use and copyright policies for on-line teaching materials. In general, however, the same copyright rules that govern photocopied packets and other more familiar teaching tools are likely to apply to on-line material. You should, however, identify the office or officer at your institution responsible for monitoring such policies.

The on-line materials should be made accessible to all staff and students. Investigate your institution's policies (or ask for one to be made) on whether you or the school owns your on-line materials. This is especially important if you are investing considerable creative time and energy, making heavy use of institution equipment and staff, or may wish to take the material with you to another institution.

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