

**INTERNATIONAL JOURNAL OF CONTEMPORARY ACADEMICS (IJCA) ISSN 2536-7110 © 2022 VOL. 6(1), Pp.45-52, © APRIL, 2022. FACTORS AFFECTING INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY INTO TEACHING-LEARNING IN SECONDARY SCHOOLS OF KOGI STATE.**

**BY**  
**AMINU TIJANI OBANSA and ANIKOH NENE**  
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**FACTORS AFFECTING INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY INTO TEACHING-LEARNING IN SECONDARY SCHOOLS OF KOGI STATE.**

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***Abstract***

*The integration of ICT in teaching-learning process is basically latest phenomenon in all country's education system. There is universal recognition of the need to use Information and Communication Technology (ICT) in education as we enter the era of globalization where the free flow of information via satellite and the internet hold sway in global information dissemination of knowledge. Already, Kogi State and Nigeria at large is on the other side of the international digital divide, as it has not made significant effort to integrate ICT into secondary school curriculum. Although the crux of the matter is that integration of ICT is loaded with worries or challenges in most developing countries. The challenges become a stumbling block in their desire to integrate ict in classrooms. Although the use of ICT in the teaching-learning processes can lead to improved student learning and better teaching methods; this may not be true if the teachers or the students themselves are not ready for this integration of ICT. This paper, therefore, examines the factors affecting the integration of ICT in secondary education in Kogi State. It identifies Personal characteristics, Teachers' attitudes, Teacher-Student ratio, and Technical support. Suggestions for improvement were offered. The methodology used in this paper work is library research method.*

**Keywords:** ICT integration, information and communication technologies, personal, institutional and technological factors

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## **INTRODUCTION**

In this age of information and technology, digital technology has influenced all aspects of human life (Vhanabatte et al, 2014). Almost every aspect of our life is affected by technology. Technology plays a vital role in the way we learn, communicate, work and live. Globally, technology is growing fast and is opening opportunities for human and economic development. It is raising productivity, enhancing education, creating job opportunities and improve incomes. Thus, technology is hoped to enhance development, alleviate poverty and improve living conditions. Information and Communication Technology (ICT) have become one of the fundamentals building blocks of modern society. More than ever before the advent of the knowledge economy and global economic competition compel governments to prioritize educational opportunities for all. Policy makers widely accept that access to Information and Communication Technology (ICT) in education can help individuals to compete in a global economy by creating a skilled workforce and facilitating social mobility. Mburu et al, 2013). However, beyond the rhetoric and of equal importance to policy makers are the basic questions related to the measurement of ICT in education, its usage and potential outcome including retention and learning achievement. Many countries now regard mastering of the basic skills and concepts of ICT as an inevitable part of the core of education. The importance of pedagogical integration of ICT in Nigeria and globally cannot be overemphasized. It is becoming increasingly apparent that all aspects of people's lives including the way education is taught and delivered is greatly influenced by developments in Information and Communication Technologies (ICTs).

Integration of ICT in teaching and learning can be influenced by many factors such as the availability of ICT resources in the schools, preparedness of teachers in ICT knowledge and skills, the attitude of school community towards ICT use in education, the way teachers teach in classrooms among others. Studies conducted in various parts of the world have presented the aforementioned factors as follows. A research conducted to investigate the developments of ICT and the need for blended learning in Saudi Arabia showed that, although there was adequate ICT equipment in the schools, need of training on ICT for teachers were found to be fundamental. Further, the findings also showed that the teaching and learning style was dominated by traditional methods (Alzahrani, 2017).

## **Concept of ICT and its Relevance to Education**

Information and Communication Technology is technology that supports activities involving information. Such activities include gathering, processing, storing and presenting data (Gokhe, 2015). ICT refers to the range of technologies that are applied in the process of collecting, storing, editing, retrieving, and transfer of information in various forms (Olakulehin, 2007). The Federal Ministry of Education, Nigeria (2010) defined ICT as encompassing all equipment and tools (inclusive of traditional technologies of radio, video, and television to the newer technologies of computers, hardware, firm-ware, etc.), as well as the systems, practices, concepts, and principles that come into play in the conduct of the information and communication activities.

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Information and Communication Technologies includes hardware and software such as radio, television, motion picture, projector, camcorders and emerging hardware and software like computers, netbooks, mobile phones, MPS, e-book readers, personal digital assistants, interactive white board, e-mail, video conferencing (Yusuf, 2011).

The importance of ICT in the development of any nation both socially, politically and educationally cannot be overemphasized. In recognition of the potentials of ICT, Zurich (2013) observed that ICT made our work more sustainable: saving energy and materials resources by creating more value from less physical input, increasing quality of life forever more people without compromising the future generation ability to meet their needs. Gusen et al, (2007) posited that ICT in education is critical to administrative, societal and cultural empowerment. In education, ICT possess the potentials of remodeling pedagogical methods, increased access to quality education as well as refine the management of education systems.

Kmitta et al, (2004) stated that ICT has had tremendous impact on the school system and has also stimulated more constructivist approaches to teaching, enhanced overall student drive to learn, to stay and perform better in school, and it has drastically improved teachers' professional development through persistent update of their knowledge on the modern technologies, and the latest use of computers in content areas. They further posited that it has

been valuable as tools in ensuring a benign school environment as improved communication is enabled among parents, teachers, students, and administrators.

**ICT needs and Competency of Teachers in Kogi State**

ICT literacy is the ability of individuals to deploy Information and Communication Technology (ICT) appropriately to access, manage, integrate and evaluate information, develop new understandings, and communicates with others in order to participate effectively in society (MCEETYA, 2005). ICT literacy is a broad concept that has four major components of equal importance. These components include general literacy, problem-solving skills, information literacy and technological literacy (MCEETYA, 2007). General literacy in this context has to do with traditional literacy (ability to read and write) and numeracy (use of numbers); while problem-solving skills deal with the ability to use knowledge derived from one's literacy in addressing or responding to issues.

Information literacy on the other hand has to do with the ability to recognize when information is needed and, the ability and skills to locate, access, evaluate and use information from the web (MCEETYA, 2007). Whereby, technical or technological literacy deal with the ability to use computer database, word processing and presentation software in creating, storing, managing and presentation of information (MCEETYA, 2007). The influence of ICT in society has made ICT literacy part of the major requirements

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needed in the workforce and for successful educational career (Sani, 2014). For school teachers to effectively integrate ICT in their pedagogical practices, the teacher training programme must be grounded to adequately prepare the teachers while on training for this emerging challenge (Sani, 2014), White (2003) recommends that teachers need to experience online learning as part of their professional development.

**Factors Influencing Adoption and Integration of ICT in Teaching-Learning in Secondary Schools in Kogi State.**

Before the review of factors influencing the adoption and integration of the use of ICT by teachers, the concepts of adoption and integration are described. Rangaswamy et al, (2000), describes adoption as the decisions that individuals make each time that they consider taking up an innovation. Similarly, Rogers (2003) defines adoption as the decision of an individual to make use of an innovation as the best course of action available. Rogers (2003) argues that the process of adoption starts with initial hearing about an innovation to final adoption. For the purpose of this study, Rogers' definition of adoption is used.

Several factors influencing the adoption and integration of ICT into teaching have been identified by researchers. Rogers (2003) identified five technological characteristics or attributes that influence the decision to adopt an innovation. Stockdill and Moreshouse (1992) also identified user characteristics, content characteristics, technological considerations, and organizational capacity as factors

influencing ICT adoption and integration into teaching. Balanskat, Blamire and Kefalla (2007), identified the factors as teacher-level, school-level and system-level. Teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology and other factors (Chen, 2008, Tondeur; van Braak et al, 2008; Lim et al, 2008; Clausen, 2007). Sherry et al, (2002) claim that technological, individual, organizational, and institutional factors should be considered when examining ICT adoption and integration. Neyland (2011), factors such as institutional support as well as micro factors such as teacher capability influencing the use of online learning in high schools in Sydney. This article reviews studies on the use of ICT by teachers and identify factors that included and categorized in the framework of Sherry et al, (2002).

**Personal Characteristics**

Personal characteristics such as educational level, age, gender, educational experience, experience with the computer for educational purpose and attitude towards computers can influence the adoption of a technology, Schiller (2003). Teachers are implored to adopt and integrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICT into teaching determines the effectiveness of the technology and not by its sheer existence in the classroom (Jones, 2001). The attitudes of teachers towards technology greatly influence their adoption and integration of computers into their teaching. According to (Russell et al, 1997), anxiety, lack of confidence and competence and fear often implies ICT takes a back seat to conventional learning mechanisms. Therefore, an understanding of personal characteristics that

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influence teachers' adoption and integration of ICT into teaching is relevant.

### **Teachers' attitudes**

To successfully initiate and implement educational technology in school's program depends strongly on the teachers' support and attitudes. It is believed that if teachers perceived technology programs as neither fulfilling their needs nor their students' needs, it is likely that they will not integrate the technology into their teaching and learning. Among the factors that influence successful integration of ICT into teaching are teachers' attitudes and beliefs towards technology Hew and Brush, 2007; Keengwe and Onchwari, 2008). If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes. Demici (2009) conducted a study on teachers' attitudes towards the use of Geographic Information systems (GIS) in Turkey.

In a similar study, Teo (2008) conducted a survey on pre-service teachers' attitudes towards computer use in Singapore. A sample of 139 pre-service teachers was assessed for their computer attitudes using questionnaire with four factors: affect (liking), perceived usefulness, perceived control, and behavioural intention to use the computer. He found that teachers were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer.

### **Teacher-Student ratio**

Many studies have revealed that the Teacher-

Student ratio influence their acceptance of technology in classrooms. For example, Samarawickrema et al, (2007) investigated factors related to the use of learning management system in a large multi-campus urban university in Australia. They adopted case study method and purposive sampling to select 22 participants used web-based methods to teach both on- and off- campus students for the study. The findings of the research found that increased workload coupled with teaching with technology was critical to the participants of the study. Factors reported to contribute to increased workload were course maintenance and constant upgrades, student emails, the learning of new skills and the continuous search of sustainable strategies.

Similarly, Neyland (2011) conducted both quantitative and qualitative research on factors influencing the integration of online learning in high schools in Sydney. The study involved 26 computer coordinators. In an interview, one computer coordinator in a schools stated that increased workload of teachers was alarming: "Asking them to take on board yet another task in an already overcrowded curriculum and extremely busy work day is pushing many teachers to the limit and in some cases beyond. Also, Abuhmaid (2011) conducted study on the conduct and effectiveness of ICT training courses within the Jordanian education system. The sample population was 115 teachers and 12 school principals. Interviews, questionnaires, direct classroom observations, and field-notes of classroom practices were used for data collection. In the study, one principal reported that "teachers are already overloaded; they could not cope with the pressure and the pressure from ICT training". In addition, a teacher stated that "teachers are overloaded to learn,

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prepare and practice what they learn”.

#### **Technical support**

Jones (2004) reported that the breakdown of a computer causes interruptions and if there is lack of technical assistance, then it is likely that the regular repairs of the computer will not be carried out resulting in teachers not using computers in teaching. The effect is that teachers will be discouraged from using computers because of fear of equipment failure since no one would give them technical support in case there is technical problem. Becta (2004) agreed that “if there is a lack of technical support available in a school, then it is likely that technical maintenance will not be carried out regularly, resulting in a higher risk of technical breakdowns”. In Ireland, the National Council for Technology in Education, NCTE 2005 census on ICT infrastructure (as cited in ICT strategy group report, 2008-2013) found that about 85.3% of schools reported technical support and maintenance as a ‘high’ or ‘very high’ priority and claimed that it should be an important element of the school ICT environment with proper technical support being made available to maintain hardware and infrastructure. Similarly, Yilmaz, (2011) in assessing the technology integration processes in the Turkish education system reported that in providing schools with hardware and internet connections, it is also crucial to provide the schools with technical support with regard to repair and maintenance for the continued use of ICT in schools.

#### **Conclusion**

No doubt that teachers and students in secondary schools in Kogi State and Nigeria at large will have incredible resources available if they have access to the internet. By integrating information and communication technology into secondary school curriculum, a fundamental shift in the way

teacher teaches and students learning will be evolved. However, to integrate computer into teaching and learning in Kogi State and Nigeria at large, there must be paper and adequate funding and financing of education. There has been a steady decline in government’s budgetary allocation to education over the past number of years. Without a doubt, ICTs will continue to refine and define human interactions and social relations within society for many years to come. In fact, it appears every realm of human endeavor is at the mercy of ICT tools and this seems to continue incrementally and infinitum. If secondary school education is critical to national development, national integration, and better standard of living for citizens and it generally engenders empowerment, then, it will be right if government pays more attention to it. Nigeria cannot afford to toy with the educational system. The greatest challenge to the state and federal government is to invest in the internet business and create enabling environment for secondary school students to participate in downloading available and useful knowledge in the internet. Secondary school students in Nigeria are already farther behind their peers in developed countries, thus widening the global digital divide.

#### **Recommendations**

The following recommendations are made based on the findings;

- i) Both male and female teachers need to be encouraged to develop ICT literacy through training to enable them integrate ICT for teaching thus enhancing on students’ achievement of set goals.
- ii) Teachers did not have access to computer equipment for use in the teaching and learning process. Therefore, computer equipment need to be availed to all student teachers in order to enhance its use during learning process that will empower them with skills and content to use them in actual teaching practice. Schools should ensure that they equip computer labs with adequate facilities.

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- iii) The policy and decision makers in Government must implement those policies and decisions that favour literacy in the ICTs particularly provision of infrastructure and ICT components to schools.
- iv) ICT has to be integrated into the teacher education programmes to ensure their preparedness to adopt its use at the classroom level.
- v) A standard planned ICT practical course curriculum of one sit-in exams for teacher education programmes should be developed and maintained to ensure that graduates of teacher training programme are professionally competent on completion of the programme.

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