Integration of Information Communication Technology (ICT) in the Curriculum of Federal Unity Schools (FUS) in Nigeria: Implications for Learning

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ABSTRACT The study examined the extent to which Information Communication Technology (ICT) is integrated into various school subjects in the curriculum as well as students’ utilization of and access to ICT, in order to establish a fact on its implications to e-learning. Data were collected from 105 Form 2 Junior Secondary School students from four Federal Unity Schools (FUS) in South Eastern Nigeria. Questionnaire was used for data collection that were analysed descriptively and quantitatively using frequency, percentages, charts, and cross tabulation chi-square to test the null hypotheses. Findings indicate that except for computer studies, ICT was not integrated into other school subjects in the curriculum. Although ICT is seldom used, the level of ICT integration into the curriculum $\chi^2 (8, n=105) =7.704$ p > .05 has no significant influence on the level of ICT utilization. Alternatively, students’ access to ICT package, $\chi^2 (12, n=105) =22.207$ p < .05 has a significant influence on ICT utilization; majority (66%) never had access to ICT usage. Recommendations were directed towards government assistance in equipping FUS with adequate facilities, teacher preparation towards ICT usage as well as monitoring and assessment of ICT utilization. Keywords: Access, Information Communication Technology, Junior Secondary School, Integration, Utilization.

1. INTRODUCTION There has been a tremendous transformation in the education sector as a result of rapid advances in Information and Communication Technology (ICT). Rosen and Michelle cited in Aduwa-Ogiegbaen and Iyamu (2005) affirm that the role of technology in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy. Information and Communication Technology (ICT) is a set of activities which is facilitated by electronic means such as processing, transmission and display of information (Rodriguez & Wilson, 2000). Ozoji in Jimoh (2007) refers to ICT as the handling and processing of information (text, images, graphics, instructions, etc) for use, by means of electronic and communication devices such as computers, cameras, and telephone. When ICT combines with internet, it creates a channel for students to obtain a huge amount of human experience and guide students to enter the global community. In this way the students not only can extend their personal view, thought, and experience, but also can learn to live in the real world. The use of ICT in teaching and learning is a relevant and functional way of providing education to learners in order to assist them in imbibing the required capacity for the world of work (Kosoko-Oyedeko and Tella, 2010). Ajayi (2008) posited that with the aid of ICT, teachers can take students beyond traditional limits, ensure their adequate participation in teaching and learning process and create vital environments to experiment and explore. However, the application of ICT needs expensive hardware and software which becomes the big obligations for schools and parents. It is also necessary that both teachers and learners should have basic technology knowledge before they apply ICT. This new development is a strong indication that the era of teachers without ICT skills are gone. Unfortunately, most teachers today do not have
technological training to guide their students in the use of computers to enhance their learning achievement. Integration is an art of combining or adding parts to make a unified whole (Drake and Burns, 2012). Non-integration and poor access to Information Communication Technology (ICT) in Nigerian schools and some developing countries in Africa seem to be affecting students’ ICT utilization level thereby influencing achievement and competitiveness globally (Adenuga, Owoyele and Adenuga, 2011). Aduwa-Ogiebean and Iyamu (2005) noted that many developing countries, especially in Africa, are still low in ICT application and utilization. In some advanced countries of the world, such as China and Japan, integration of technology into some school subjects in the curriculum has brought changes, development and efficiency into their system. Successful integration of ICT into the classroom depends on the ability of teachers to structure the learning environment from non-traditional way, to new technological pedagogy (Kyriakides, Demetriou, and Charalambous, 2006). The integration of ICT to education empowers learners, teachers, educators, managers and leaders to use ICT judiciously and effectively for expanding learning opportunities and ensuring educational quality and relevance (MoEVT, 2007). The use of ICT in education is the bedrock of knowledge that would enable any country to contribute both to achieving Education for All (EFA) goals and reducing the digital divide world towards the aim of globalization.

1.1 Theoretical Model Integrated curriculum model is about making connections across and within disciplines based on skill, knowledge and attitude (Drake and Burns, 2012). Three approaches to integration as identified are: multidisciplinary, interdisciplinary, and trans-disciplinary. For the purpose of this study, a multidisciplinary approach was used. This approach focuses primarily on the various disciplines in the Junior Secondary School curriculum and how these disciplines integrate to a particular theme (ICT). These standardized disciplines as adapted from Drake and Burns (2012) include English, Mathematics, Basic Science, Physical and Health Education, Basic Technology, Computer studies, Cultural and Creative Arts, Civic Education, French Language, Social Studies, and Christian Religious Studies, while the theme of integration is Information Communication Technology (ICT). Figure 1 shows the relationship between the various subjects taught at the Junior School level in Federal Unity Schools in Nigeria and ICT as the main theme. Therefore, the current study examined the degree of infusion of ICT into the various school subjects in the Federal Unity Schools.

The utilization of ICT is determined by its integration and accessibility in the curriculum. Technology existed since the first human began to seek control over the environment and by the manipulation of materials; it has led to an ever-increasing range of application of ICT for the purpose of wealth and development of individuals’ full personality (Black, 2007). The need for integration of ICT could enhance learning and knowledge as well as provide foundation for operational excellence in a globalised world.

1.2 Statement of the Problem The utilization of ICT in the teaching and learning process in Federal Unity Schools has been an issue that needs to be assessed in order to determine the extent to which ICT integration has impacted on knowledge delivery. The Federal Government of Nigeria (FGN) has spent over N1.32 billion in building ICT laboratories and equipping them with ICT facilities in 102 Unity schools in Nigeria (Waziri, 2006, October, 2004). The policy on ICT has been developed which aims at empowering the youth with ICT skills and preparing them for global competitiveness and also encouraging capacity building of ICT in the country’s secondary schools. The utilization of ICT has also been
made mandatory at all levels of educational institutions through adequate financial provision for tools and resources. In spite of the effort of the Federal Government of Nigeria in promoting ICT integration into teaching and learning in Federal Unity Schools, the attainment of objectives of ICT in these schools seems to suffer some defects as observed from poor performance in ICT utilization among students going to higher institutions. This problem could also be as a result of poor accessibility of ICT resources by the students of Federal Unity schools. If ICT tools are adequately accessed, they will be utilized for both academic and non-academic activities. This will bring about high degree of infusion into the various subjects in the curriculum of Federal Unity Schools. Hence, the purpose of this study is to examine the extent to which ICT facilities are accessed, utilized and integrated into the curriculum of Federal Unity Schools in Nigeria. Expected findings will be significant to students, teachers, policy makers, literature, theory and practice of ICT. 1.3 Research Questions Questions are outlined thus: 1. To what extent is ICT integrated into various school subjects in the curriculum? 2. To what extent are ICT facilities utilized for teaching? 3. How accessible is ICT for learning? 4. To what extent does the level of ICT integration significantly influence students’ level of ICT usage for learning? 5. To what extent does students’ level of access to ICT significantly influence their level of ICT usage?