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INTEGRATION AND IMPLEMENTATION OF EDUCATION TECHNOLOGY IN COLLEGES OF EDUCATION PROGRAMMES: PANACEA FOR QUALITY EDUCATION IN NIGERIA

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ABSTRACT

Africa as a developing continent requires the integration of Education Technology for its sustainable development. Sustainable development is becoming as inescapable process, it confers certain benefit and imposes certain cost on all who embrace it. All countries of the world especially Africa countries are affected by sustainable development through several channels such as diffusion of technology, Information Communication Technology and so on. Thus, colleges of education are the driving force through which sustainable, sustainability, integration and implementation of Education technology is built upon. Two research questions and two null hypotheses were used for this study. The paper concluded among other that government at all level should make provision for integration of Education technologies into colleges of education in Nigeria. It was also recommended that educational technology related equipment should not attract tariffs on importation.

Keywords: Education, Technology, Teaching, Integration, Implementation, Challenges,

INTRODUCTION

Educational technology is a very wide field of technology which encompasses devices, equipment, machines, gadgets, tools and instrument used to promote teaching and learning (Umeh, 2008). Umeh noted that a school that has television, radio, films, slide projectors, audio and video recorders, teaching machines, computers, etc, may be said to have high educational technology contents that promote quality education.

Educational technology can also be seen as software which emphasizes careful design of the teaching-learning process, using principles of behavioural sciences, also systematic application of people, ideas, materials and equipment to solve educational problems. In Nigeria, tertiary institution especially Colleges of Education lack systematization of educational process leading to complexities and dimensions of educational programmes.

Going by the above definitions of Education Technology, the integration and implementation of the entire global system are made possible through the advances in technology. The technological feasibility of global neighbourhood is no longer in doubt. Sustainable development has been made possible by the advancement in technology which has reduced the entire world especially African countries to a global village. Through these technological tools, the world can and do have effect on the development of individuals, people, country and world at large. Technology is one of the newest terms that resulted from the changing fact to sustainability of the world in general. Education been the degree of interconnectedness that exists among countries of the world results in sustainable development.

The importance of College of Education in Nigeria cannot be overemphasized as the key body in the matters relating to close touch with the learners and the immediate community. College of Education is an institution responsible for promoting learning in schools, by contributing in translating curriculum ideas into practicalities. Potential teachers from colleges of education are regarded as crucial enablers in the development of curriculum of educational programmes. Their roles is not limited to what they are expected to do in the classroom but also to select the right combination of activities, analyze curriculum content and decide on the feasible order and methods of its presentation and ensure that the objectives of a curriculum are achieved.

According to Idaha (2008), the importance of college of education is central to education, particularly in the third world countries. He went further to say that the challenges of colleges of education teachers appear to be the most daunting factors facing the education system in general. Chaka (2008) stated that colleges of education have been severely criticized on the ground of quality and quantity education in Nigeria. He went further to say that education system in sub-Sahara Africa and south Asia are still characterized by lack of technological equipment and as a result some subjects are not taught at all or are not effectively taught. In terms of quality education, there is only a modest evidence of the effectiveness of the Nigerian Colleges of Education, the programme has been criticized as often not well matched with students own background and culture of the society that students are expected to operate. Chaka maintained that college of education teachers would continue to be the key to educational development in Nigeria, especially with adequate technological equipment from the grassroot, Nigeria cannot hope to expand her educational facilities without adequate technological equipment.

In the research of Amen (2010) College of Education programme in Nigeria has failed to adhere to the provision of the National Policy on Education on the use of technological equipment. He maintained that College of Education should continue to take cognizance to changes in methodology and in the curriculum. They should always and at all times be exposed to innovations in their profession. He went further to say that educational technology model of application for Colleges of Education should be introduced. This he refers to as the special skills a student acquires in order to enhance the quality of the learning that takes place in the school. These special skills cannot be acquired without technological equipment.

STATEMENT OF THE PROBLEM

College of Education institutions in Nigeria face the challenge of preparing a new generation of students who can effectively use the new learning tools provided by technological equipment. College of education programmes require the acquisition of new resources, expertise, careful planning.

The convergence of educational technologies has turn the whole world into a global village, making it possible to foster interaction with people in remote geographical locations at and unimaginable speed. This phenomenon has also shortened the turnaround period of knowledge such that knowledge becomes obsolete as soon it is acquired. The result of this development is that teachers are now challenged to be at the cutting-edge of knowledge production, modification and application.

RESEARCH QUESTIONS

1. What strategies are needed for the integration and implementation of educational technologies into College of Education programmes?
2. What are the equipments needed for integrating educational technologies into the curriculum of college of education.

NULL HYPOTHESES

1. There is no significant difference in the mean scores of the responses of male and female students as regards to the strategies for integration and implementation of educational technologies into College of Education programmes.
2. There is no significant difference in the mean scores of the responses of male and female students as regards the equipment for integrating educational technologies into college of education programmes.

METHODOLOGY

The research design adopted for this study was descriptive survey. This is because the study is intended to collect data that describes existing phenomena in order to answer questions about the current status on the integration of educational technologies into college of education programmes. According to Nemat (2000) a survey is an attempt to collect data from members of a population in order to determine the current status of a population with respect to one or two variables. The area of study was state college of education Minna, Niger state. The sample is 200 students in 200 level. Random sampling technique was adopted to draw out the sample for the study. Out of the 200 students in 200 level used for this study 130 are males and 70 are females. The instrument used for this study was questionnaire titled "Educational Technologies into College of Education Programmes' questionnaire" (ETCEP). The instrument was developed by the

researcher. It has two sections; section A sought to ascertain information and strategies for integrating EDT into college of education programmes; while section B dealt on information on the strategies for implementation of EDT into college of education programmes. The instrument was validated by two experts in measurement and evaluation; they vetted the instrument in term of its adequacy, suitability and language. The suggestions of these experts were incorporated into the final copy of the instrument. A test-retest method was used to ascertain the reliability of the instrument. A reliability coefficient of 0.9 was established, which indicates a strong reliability of the instrument. The data collected were analyzed using mean, rank order and Z-test statistics.

PRESENTATION OF RESULTS

Research Question 1

What are the strategies needed for the introduction of EDT into college of education programmes.

Table 1. Mean and Rank order of the scores of the strategies for integration of EDT

S/NO	Strategies for integration and implementation	Mean	Rank
1.	Create mission statement	3.23	7th
2.	Plan the vision of EDT in college of education	3.63	2nd
3.	Identify current levels of EDT in teaching	3.18	8th
4.	Communicate EDT integration with stakeholder	3.56	4th
5.	Assess the present EDT data	3.62	3rd
6.	Review he National Policy on EDT	3.48	5th
7.	Plan EDT professional development	3.34	6th
8	Re-examine current EDT strategies	3.72	1st

Table 1 above shows the strategies to be used for integrating EDT into college of education programmes, the analysis of this study indicates that the eight strategies could be used. All the respondents agreed that all the eight strategies are possible to be adopted for the integration of EDT into teacher education programmes.

Research Question 2

What are the equipments needed for integrating EDT into College of Education programmes.

Table 2. Mean and Rank order of scores on strategies for implementation of EDT

S/NO	**Strategies for implementation**	**Mean**	**Rank**
1.	Plan goals and objectives of implementation	3.34	2nd
2.	Evaluate students' EDT performance results	3.15	4th
3.	Access the current EDT status in college of education	2.77	5th
4.	Develop network infrastructure connectivity	3.88	1st
5.	Determine the scope of work done on EDT	3.46	3rd

In table 2. The responses of the lecturers were solicited as regards their views on strategies for the implementation of EDT into college of education programmes. Five items were presented to them to elicit their responses, all the lecturers responded positively on the usage of all the items as strategies for implementation of EDT into college of education programmes.

TEST OF HYPOTHESES

Hypothesis I

There is no significant difference in the mean scores of the male and female students as regards the strategies for introducing EDT into college of education programmes.

Table 3. Z-test statistics on the integration strategies according to gender

Subjects	NO	X	SD	df	Z-cal	Z-crit	Result	
Males		130	3.183	49.11	198	0.001	1.98	NS
Females	70	2.872						
N	=	200						
Z-cal	=	0.001						
Z-crit	=	1.98						

The table 3 above shows that the tabulated value of Z at 198 degree of freedom and at the 0.005 level of significance is 1.98. The calculated value is less than the critical value. The null hypothesis that there is no significant difference between the mean scores of the responses of the males and females students as regards the strategies for integrating EDT into college of education programmes is therefore, accepted. This implies that the opinions of the male and female students do not differ significantly as regards the strategies for integrating EDT into teacher education programmes.

Hypothesis II

Table 4. Z-test statistics on the implementation strategies according to gender

Subjects	NO	X	SD	df	Z-cal	Z-crit	Result	
Males		130	3.066	27.62	198	0.007	1.98	NS
Females	70	2.786						
N	=	200						
Z-cal	=	0.007						
Z-crit	=	1.98						

The Z-critical is 1.98 at 198 degree of freedom and at the 0.005 level of significance is higher than the Z-calculated of 0.007, the null hypothesis is therefore, accepted. This implies that there is no significant difference in the responses of the males and females lecturers on the implementation strategies for integrating EDT into teacher education programmes.

FINDINGS OF THE RESULT

The findings of the data are discussed according to research questions and the hypotheses used for this study. The findings of the study revealed that the lecturers were in agreement to the need for integrating EDT into college of education programmes. This implies that the integration of EDT into college of education progrmmes will have far reaching changes in college of education institutions and the education system considering the position of the teacher in the education process and need for sustainable development in physical, social, economical, ethical, cultural and political sustainability in the world and Africa in particular. The importance of an EDT oriented learning system is captured by Nahut (2000) when he states that in the information age, economic advantage will accrue to countries in which the population acquires competence in processing information into knowledge and applying it in work and everyday life. Sustainable development especially in the area of education will require effective administration and management of both human and natural resources in all the countries of he world and in Africa in particular.

Umeh (2008) supported the above views when she opines that the use of EDT for professional development of teachers who had already completed their training but need to be introduced to new methodologies and innovations in their subject areas may be seriously explored. Since it may be impractical to resend all teachers that are currently teaching in the classrooms back to institutes for retooling and re-skilling in the new emerging field of knowledge, distance learning through the use of modern EDT tools may well be the only means of retraining the teachers in the field who are in need of serious retraining. Chaka (2008) shares this view by stating that the deployment of EDT facilities to education is painfully slow in Nigeria. In view of the problems of lack EDT skills among teachers, Niyi (2007) advised that teacher education processes must make adequate provisions for individualized EDT training for all would be teachers.

Taking a critical look at the continuum model proposed in this study, teacher trainees in most developing countries are hardly introduced to the emerging approach, and where it is done, it only exists in a peripheral level neglecting the more

sophisticated and practical levels of infusing and applying. This creates a concern for the plight of the learners in these societies, considering the fact that the ascendancy of EDTs has turned it into invariable constant in everyday life. It is therefore, important that teachers in the training institutions are imbued with skills and abilities of EDT literacy and sensibilities so that the knowledge and attitude acquired will cascade into the learners that come in contact with the classroom when they begin to practice.

CONCLUSION

Education is generally regarded as one of the crucial agents of development, to this end, Nigeria educational policy makers and social planners, in recognition of its potentials, for leveraging existing social stratification, have placed huge premium on the development of the education sector seeing it as an instrument 'par excellence' for effective national development.

According to federal Republic of Nigeria (2004) education shall continue to be highly rated in the national development plans because education is the most important instrument of change; any fundamental change in the intellectual and social outlook of society has be preceded by an educational revolution. Therefore the advancement of African countries, through technological changes will greatly expand her educational system, and also the sustainable development of any nation depend largely on the integration and implementation of education technology, hence the idea that teaching and learning can successfully take place through the application of electronic communication facilities between teachers and students is one which had generated hope and dismay, excitement and fear. Hope that many learners can be reached at a more convenient pace that had erstwhile been the case, dismay that the infrastructure necessary for deploying an effective EDT platform is lacking. However, the use of EDTs in the educative process, the educational relevance of EDTs cannot be overemphasized form the period when skinner applied programmed instruction to teaching, through Brunner's experiment with computers in instruction, to the current wave of information transmission and exchange via the worldwide web, different applications of EDTs in enhancing cognitive development has been witnessed.

The pedagogic uses of computers necessitate the development, among teachers' and learners' skills and attitude relating to effective use of EDTs. Besides, literacy, EDTs also facilitates learning to programme, learning to learn in subject areas and learning at home on one's own, and these necessitate the use of new methods like modeling, simulation, use of data bases, and guided discovery. The implication in term of changes in teaching strategy, instructional content, and role of teachers and context of the curricula are obvious as well as inevitable. Consequently, the government, non-government and international agencies should setup policy agenda for introducing an EDTs driven teacher education curricular and they could do this well if they are guided by the model which is depicted in this study.

RECOMMENDATIONS

While technology-enhance education holds great promise, its widespread implementation also poses some immediate challenge with respect to (1) capital outlays hardware and software; (2) equal access to ensure that there are no technological 'haves' and 'have-not' (3) appropriate strategies for integrating ICT across curricula (4) copy right issues (5) availability of pedagogical sound materials (6) teacher training and development.

Given all these issues, it is critical to access the worth of technology-based learning before its adoption and implementation. This paper, however, recommends that:

- Government, policy makers, institution and individual stakeholders must ensure that colleges of education should have all that they need in terms of resources for teaching and learning during their professional training and teaching.
- As a matter of policy, government should ensure a national internet broadband connectivity policy such that it would be easy to reach remote locations easily via internet.
- Curriculum planners should carefully include EDT programme in all colleges of education programmes.
- Teachers and other support staff in the school system should regard EDT as a natural part of everyday life.

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