

AVAILABILITY AND ADEQUACY OF EDUCATIONAL TECHNOLOGY RESOURCES IN COLLEGES OF EDUCATION IN ENUGU STATE: IMPLICATIONS FOR BRIDGING GAPS IN EDUCATIONAL POLICIES IN NIGERIA

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Abstract

This study was conducted to ascertain the status of availability and adequacy of Educational Technology Resources for teaching and learning in Colleges of Education in Enugu State and its implications for bridging gaps in Educational Policies in Nigeria. Four research questions guided the study and the survey research design was adopted for the study. A sample of 75 lecturers was randomly drawn from the 5 Colleges of Education in Enugu State (15 from each College). A structured 95-item questionnaire was used to collect data and the collected data were analyzed using frequency count, simple percentage and the mean. The findings of the study revealed that most of the listed Educational Technology resources were not available. The very few that are available are grossly inadequate. The findings of the study equally showed that certain factors such as insufficient funds in schools, school location can constrain the provision of Educational Technology resources. The findings also revealed that certain factors can be adopted to improve the provision of these resources and they include among others the following: provision of funds in schools for procurement and development of these resources and the provision of electricity and other necessary infrastructures. Recommendations made based on the findings of the study include need for government to establish Educational Technology resource centers in Colleges of Education.

Key words: Education, educational technology, resources, educational technology resources, availability, adequacy and educational policies.

Education world over is one of the most virile benchmarks for national development. No wonder it has been defined by the Federal Republic of Nigeria (FRN) (2004) as an instrument par excellence and a tool for effective national development. Ajayi and Adu (2000:315) noted that “the United Nations Education, Scientific and Cultural Organization (UNESCO) at its 27th session of the General Congress identified education as a tool for the development of all human potentials which is the most powerful lever for shaping the future“. In line with UNESCO’s position, Etesike and Ogugua (2005:181) observed that “education prepares young people for their active participation in the maintenance and development of their society”. The ability of man to live a satisfied and worthwhile life depends to a large extent on certain factors which include; increasing ability to sustainably explore and functionally derive and maximally utilize the available resources of nature. Education is one of the ventures that every individual and every society needs. It has both intrinsic and extrinsic values. It helps in the formulation of ideas and obviously fosters the worth and development of the individuals and the society. In every human society, one of the major concerns of both individuals and the government is the training of the young ones for their future roles as adults (Odo,2011:1).

Education is a universal practice or phenomenon engaged in, in all societies and at all stages of development. It is synonymous with development and a powerful instrument of change. For any meaningful and fundamental change in the intellectual and social outlook of any individual and or society to be achieved, there must be an educational revolution. Education according to Okonkwo (2007:225) “is a continuous process which the society established to assist its members to understand the heritage of the past and to participate productively in the future”. It is the leading out of the unborn powers and potentials of the individuals in the society and the acquisition of skills, attitudes

and competences necessary for self realization and for coping with life problems. Education therefore describes the total process of human learning by which knowledge is imparted, valuable skills developed and faculties trained. Through education, one generation passes onto the next, its knowledge and wisdom. Aboho and O'kwu (2003:44) described education thus:

A Process That Develops the Human Mind, the Personality, the Potentials and Imparts Useful and Relevant Skills to Individuals Thereby Enhancing the Growth of Society. in Essence, Education Prepares the Human Mind to Enable it Cope with Future

Challenges

To achieve the above feat, there is urgent need for the education of members of society. There is need for practical or pragmatic rather than a passive and decorative education; an education system that will yield positive results both for the individual that acquired it and the society in which the individual lives. The indispensability of education was enunciated in the National Policy on Education (NPE) of the Federal Republic of Nigeria (FRN) (2004:4), which described education as “an instrument par excellence for effecting national development”. The National Policy went further to enunciate that education has witnessed active participation by non governmental agencies, communities and individuals as well as government intervention. The government therefore thought it desirable to spell out in clear and unequivocal terms the underlying tenets of its investment in education. This was done through the National Policy on Education. A Policy according to Ajayi (1995) in Elizabeth (2009) is “a guiding principle or a projected paper program considered to be expedient and prudent which specifies the goals, values and practices. It regulates the conduct of the system which must be geared to the special needs and aims of the nation”. According to FRN (2004:6) “a nation’s policy on education is government’s way of realizing that part of the national goals which can be achieved using education as a tool”. The National Policy on Education of the Federal Republic of Nigeria touches on virtually every aspect of the Nigeria education system such as, philosophy and goals of education in Nigeria, early childhood/pre-primary education, basic education, primary education, open and distance education, educational services and more. The present work has particular emphasis on the Educational Services aspect of the National Policy on Education.

Educational Technology has been seen as the latest innovation in educational practice. There are various definitions of the term educational technology. Abimbade (2006:10) defined Educational Technology as “a field involved in the facilitation of human learning through the systematic identification, development, organization and utilization of learning resources and through the management of these process”. Educational Technology is therefore essentially concerned with finding solutions to problems of teaching and learning through the application of appropriate media or modern technologies especially electronic media (hardware and software) devices (Aniah & Tukura, 2011:57). These electronic media/devices are what the present paper refers to as Educational Technology resources. A resource is something resorted to for aid or support (Collins English Dictionary, 2011:872). Educational Technology resources therefore are those things, persons, institutions and or systems that are resorted to, for aid or support in the teaching learning process. Abimbade (2006 p17) categorized these resources into five namely people (teachers, engineers, counselors, etc), materials (books, charts, films etc), setting (libraries, classrooms, airports, parks etc), tools and equipment (audio visuals, projectors, computers etc) and activities (simulations, programmed, instructions, field trips etc). Some Educational Technology resources are developed and used in the teaching learning process. These are called learning resources by design. Other resources exist as part of normal everyday use in the world but can be discovered, applied and utilized in the teaching learning process. These ones are called real-world resources and when used to facilitate the teaching learning process, they are referred to as resources by utilization.

There is no gainsaying the fact that when these resources are adequately made available and effectively utilized in the everyday classroom activities, they will facilitate the teaching learning

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process and will equally make the process less cumbersome and stressful to the teachers as well as the learners. It makes teaching more effective and at the same time facilitates learning. In support of this position, Salami (1992:5) observed that “adequate provision of facilities and equipment and their proper utilization have always been positively correlated to good performances in examination while poor performances have been blamed on inadequate and ineffective utilization. For effective teaching and learning process especially in the present information rich age in which information communication technologies are being emphasized, there is an urgent need for the adequate provision of Educational Technologies resources for classroom activities. It is even more imperative in Colleges of Education which are tertiary institutions meant for the good training of middle manpower in teacher education (Ibidapo-Obe, 2007). Since no education system may rise above the quality of its teacher, it becomes imperative to make classroom activities of teacher training institutions to be dynamic, practically oriented and activity based through the adequate provision and effective utilization of Educational Technology resources.

The Federal Republic of Nigeria in the 2004 National Policy on Education section 11 p.5 noted that “educational services facilitates the implementation of educational policy, the attainment of policy goals and the promotion of effectiveness of educational system. The policy went further to outline some of the goals of educational services to include the following: make learning experiences more meaningful, develop and promote effective use of innovative materials in schools. To achieve these goals, the policy stated that each state and local government authority shall establish resource centers. These centers shall among other functions be used for the development and testing of teaching materials. Government shall also provide appropriate ICT facilities to ensure that the benefits of the virtual library permeate all levels of education in Nigeria.

Be that as it may, the present study is meant to find out the available Educational Technology resources and their adequacy for effective utilization in classroom activities of Colleges of Education in Enugu State.

Statement of the Problem

Educational Technology resources when adequately provided and effectively utilized in the teaching learning process has been established to facilitate teaching and enhance learning. Furthermore, it has been empirically proved that schools with good ICT resources achieve better results than those that are poorly equipped. More so, schools with higher levels of e-maturity demonstrate a more rapid increase in performance scores than those with lower levels (Balanskat & Blamire, 2007). The problem statement of the present work posed as a question is: How adequate are the available Educational Technology resources for effective classroom activities in Colleges of Education in Enugu State.

Purpose of the Study

The major purpose of this study is to ascertain the status of availability and adequacy of Educational Technology resources in Colleges of Education in Enugu State.

In specific terms, the study tried to:

1. identify the Educational Technology resources available in Colleges of Education in Enugu State.
2. determine the adequacy of the available resources
3. find out the constraining factors to the effective provision of these resources.
4. identify the measures to be adopted to enhance the provision of these resources.

Research Questions

The following research questions guided the study:

1. What Educational Technology resources are available in Colleges of Education in Enugu State?
2. How adequate are the available resources?

3. What factors constrain the provision of these resources?
4. What measures could be adopted to enhance the provision of these resources?

Research Method

The design adopted for this study is the survey research design. It involves collecting data from a sample of the population in order to answer the research questions concerning the current status of the problem under study. The area covered by this study is Enugu State. It has five Colleges of Education made up of 1 Federal, 1 State and 3 private Colleges of Education. These Colleges have a total of 758 lecturers (NCCE, Abuja Digest of Statistics, 2011). Out of the 758 lecturers, 75 lecturers 15 from each of the 5 Colleges of Education constituted the sample for this study. These lecturers were drawn using a simple random sampling technique of balloting with replacement.

The instrument for data collection was a 95-item structured questionnaire developed and personally administered by the researcher. It was face validated by three experts. 75 copies of the questionnaire were personally administered by the researcher to the respondents at the various sampled Colleges used for the study. All the 75 copies of the questionnaire administered were filled and returned giving a hundred percent return rate. This was possible because the sample size was considerably manageable and the researcher is a part time lecturer in some of these Colleges.

The collected data were analyzed using simple percentage, frequency count and mean. The decision rule for this study was the following. For part one, any item whose frequency percentage is from 70% and above was considered as being available while those below was considered not available. This decision was based on the fact that 70% and above is considered a distinction in education. For parts two – four, any mean score equal to or greater than 2.50 was taken as adequate and in agreement and any mean score less than 2.50 were taken as not adequate and in disagreement.

Result

The analysis of the data collected in the course of this study is presented in the tables below according to the research questions posed.

Research Question 1: What Educational Technology resources are available in Colleges of Education in Enugu State?

The analysis is presented on table I below:

Table 1: Lecturers’ Responses on available Educational Technology resources in Colleges

S/N	Educational Technology Resources	Responses				Decision
		Available		Not Available		
		Fre	%	Fre	%	
1.	Textbooks	75	100	-	-	AV
2.	Still pictures	30	40	45	60	NAV
3.	Magnetic white board	10	13	65	87	NAV
4.	Interactive white board	5	7	70	93	NAV
5.	Smart board	1	1	74	99	NAV
6.	Game boards	5	7	70	93	NAV
7.	Tape recorders	70	93	5	7	AV
8.	Computer sets	75	100	-	-	AV
9.	Radio	60	80	15	20	AV
10.	Television	50	67	25	33	NAV
11.	On line resource centers	1	1	74	99	NAV
12.	Virtual libraries	1	1	74	99	NAV
13.	Multi purpose projectors	1	1	74	99	NAV

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14.	Power point projectors	50	67	25	33	NAV
15.	Resource persons	10	13	65	86	NAV
16.	Video recorders	60	80	15	20	AV
17.	Public address system	75	100	-	-	AV
18.	Internet facilities	60	80	15	20	AV
19.	Charts	30	40	45	60	NAV
20.	Globes	10	13	65	87	NAV
21.	Cartoons	10	13	65	87	NAV
22.	Education Technology Resource centers	60	80	15	20	AV
23.	Posters	50	67	25	33	NAV
24.	Diagrams	60	80	15	20	AV
25.	Flash cards	10	13	65	87	NAV
26.	Models	20	27	55	73	NAV
27.	Diorama	5	7	70	93	NAV
28.	Slides	5	7	70	93	NAV
29.	Programmed learning packages	45	60	30	40	NAV
30.	Film strips	10	13	65	87	NAV
31.	Teleconferencing	1	1	74	99	NAV
32.	Newspapers	75	100	-	-	AV
33.	Closed circuit television	5	7	70	93	NAV
34.	CD-ROM	68	91	7	9	AV

Data analysis on table I above shows that only 11 out of the listed 34 Educational Technologies resources have frequency percentage of 70 and above. This indicates availability while the other 23 have frequency percentage below seventy which indicates not available. In answer to the research question, only very few Educational Technology resources are available in Colleges of Education in Enugu State.

Research Question 2: How adequate are the available Educational Technology resources for teaching and learning?

Table 2: Lecturers' Mean Rating on the Adequacy of the Available Educational Technology Resources for Teaching and Learning Activities

S/N	Educational Technology Resources	Responses								CW S ΣFX	X	Decision
		VA (4)		A (3)		I (2)		VI (1)				
		F	FX	F	FX	F	FX	F	FX			
1.	Textbooks	70	280	5	15	-	-	-	-	295	3.93	A
2.	Still pictures	10	40	20	60	40	80	5	5	185	2.46	NA
3.	Magnetic white board	5	20	10	30	5	10	55	55	115	1.53	NA
4.	Interactive white board	-	-	-	-	5	10	75	75	85	1.13	NA
5.	Smart board	-	-	-	-	-	-	75	75	75	1.00	NA
6.	Game boards	-	-	-	-	5	10	75	75	85	1.13	NA
7.	Tape recorders	10	40	30	90	10	20	25	25	175	2.33	NA
8.	Computer sets	60	240	10	30	5	10	-	-	280	3.73	A
9.	Radio	-	-	10	30	30	60	35	35	125	1.66	NA
10.	Television	5	20	10	30	10	20	50	50	120	1.60	NA
11.	On line resource centers	-	-	-	-	10	20	65	65	85	1.13	NA
12.	Virtual libraries	-	-	2	6	20	40	53	53	99	1.32	NA
13.	Multi purpose projectors	-	-	-	-	10	20	65	65	85	1.13	NA
14.	Power point projectors	5	20	10	30	5	10	55	55	115	1.53	NA
15.	Resource persons	20	80	10	30	20	40	25	25	175	2.33	NA
16.	Video recorders	5	20	10	30	5	10	55	55	115	1.53	NA

17.	Public address system	20	80	10	30	-	-	45	45	155	2.06	NA
18.	Internet facilities	25	100	20	60	5	10	25	25	195	2.60	A
19.	Charts	60	240	10	30	5	10	-	-	280	3.73	A
20.	Globes	-	-	-	-	2	4	73	73	77	1.04	NA
21.	Cartoons	-	-	-	-	2	4	73	73	77	1.02	NA
22.	Education technology resource centre	-	-	-	-	10	20	65	65	85	1.13	NA
23.	Posters	3	12	2	6	10	20	60	60	98	1.30	NA
24.	Diagrams	-	-	10	30	15	30	50	50	110	1.46	NA
25.	Flash cards	-	-	10	30	13	26	52	52	108	1.44	NA
26.	Models	-	-	-	-	20	40	55	55	95	1.76	NA
27.	Diorama	-	-	-	-	10	20	65	65	85	1.13	NA
28.	Slides	-	-	2	6	3	6	70	70	82	1.09	NA
29.	Programmed learning packages	5	20	10	30	5	10	55	55	115	1.53	NA
30.	Film strips	-	-	-	-	10	20	65	65	85	1.13	NA
31.	Teleconferencing	-	-	-	-	2	4	73	73	77	1.02	NA
32.	Newspapers	60	240	10	30	5	10	-	-	280	3.75	A
33.	Closed circuit television	-	-	-	-	2	4	73	73	77	1.02	NA
34.	CD-ROM	65	260	5	15	5	10	-	-	285	3.80	A

Note: CWS (Cumulated Weighted Scale)

Data analysis on table 2 above shows that out of the 34 Educational Technology resources listed above, only 6 were adequate. These resources have mean scores above 2.50. The remaining 28 Educational Technology resources had mean scores below 2.50 which implies not adequate. In answer to research question 2 therefore, the very few Educational Technology resources available are grossly inadequate for teaching learning activities in Colleges of Education in Enugu State.

Research Question 3: What factors constrain the provision of these resources?

The data are presented on table 3 below.

Table 3: Lecturers’ Mean Responses on the Factors That Constrain the Provision of Educational Technology resources in Colleges of Education

S/N	Educational technology Resources	Responses								ΣFX	X	Decision
		SA (4)		A (3)		D (2)		SD (1)				
		F	FX	F	FX	F	F X	F	F X			
1.	Insufficient funds in schools	70	280	5	15	-	-	-	-	295	3.93	A
2.	Lack of financial and materials support from government	65	260	10	30	-	-	-	-	290	3.86	A
3.	Lack of resources for improvisation	50	200	20	60	3	6	2	2	268	3.57	A
4.	High cost of educational technology resources	65	260	10	30	-	-	-	-	290	3.86	A
5.	Lack of financial and material support from the college host communities	70	280	5	15	-	-	-	-	295	3.86	A
6.	Dearth of spare parts for maintenance											
7.	Management of available funds by school heads	70	280	5	15	-	-	-	-	295	3.93	A
8.	Lack of training	60	240	5	15	2	4	3	3	262	3.49	A

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9.	Lack of necessary infrastructure	75	300	-	-	-	-	-	-	300	4.00	A
10.	School environment not ICT friendly	50	200	20	60	5	10			270	3.60	A
11.	Lack of separate budget for educational technology resources promotion and development	60	240	2	6	5	10	8	8	264	3.52	A
12.	Lack of maintenance culture	70	280	5	15	-	-	-	-	295	3.93	A
13.	Lack of trained experts	70	280	2	6	3	6	-	-	292	3.89	A
14.	School location	72	288	3	9	-	-	-	-	297	3.96	A

Data analysis on table 3 above shows that the respondents are in agreement with the listed items as constraining factors to the provision of Educational Technology resources in Colleges of Education. This is shown in the mean scores of their response which rate well above 2.50 the cutoff point. In answer to the research question therefore, there exist certain factors that constrain provision of educational technology resources as shown above.

Research Question 4: What measures could be adopted to enhance the provision of educational technology resources in College of Education?

The data are presented in table 4 below:

Table 4: Mean Responses of Lecturers on Measures for Improving the Provision of Educational Technology Resources

S/N	Measures for improvement	Responses								ΣFX	X	Decision
		SA (4)		A (3)		D (2)		SD (1)				
		F	FX	F	FX	F	FX	F	FX			
1.	Funds to be made available in schools	70	280	5	15	-	-	-	-	295	3.93	A
2.	Government to give full financial and material support for the procurement of educational technology resources	60	240	15	45	-	-	-	-	285	3.80	A
3.	Teacher to be trained on improvisation of educational technology resources	75	300	-	-	-	-	-	-	300	4.00	A
4.	Government to procure educational technology resources for colleges	68	272	7	21	-	-	-	-	293	3.90	A
5.	Host communities of colleges to make donations in cash and materials for educational technology resources	60	240	15	45	-	-	-	-	285	3.80	A
6.	Government to subsidize the procurement of spare parts for maintenance	55	220	20	60	-	-	-	-	280	3.73	A
7.	Efficiency and prudence in financial matters on the part of school heads	75	300	-	-	-	-	-	-	300	4.00	A

8.	Seminars, conferences and workshops to be organized for training lecturers on educational technology resources development and management	75	300	-	-	-	-	-	-	300	4.00	A
9.	Electricity and other relevant infrastructure to be provided	70	280	5	15	-	-	-	-	295	3.93	A
10.	School environment to be made ICT friendly	75	300	-	-	-	-	-	-	-	-	-
11.	Lectures and students to imbibe maintenance culture	60	240	10	30	5	10	-	-	280	3.73	A
12.	Separate budget to be made for educational technology resources development in schools	50	200	20	60	5	10	-	-	270	3.60	A
13.	Educational technology resource centers to be built in Colleges for the development, maintenance and storage of resources and for training lecturers	70	280	5	15	-	-	-	-	295	3.93	A

Data analysis on table 4 above shows that the respondents are in agreement with the items listed as measures that could be taken to improve the provision of Educational Technology resources in Colleges of Education. This is evidenced in the mean scores of their responses which rate well above the cut off point of 2.50. In answer to the research question therefore, certain factors exist that could be adopted to improve the provision of Educational Technology resources in Colleges of Education.

Discussion

The result of this study include that most of the Educational Technology resources are not available. This is depicted in most of the resources having below 70% availability status. The situation gave evidence to the findings of Egomo, Enyi and Tah (2012), who posited that “these resources are not available and most of the institution has a story very pathetic”. The finding is also in agreement with Uzodimma (2006:45) that “Nigeria has well over 6000 schools but many of the schools lack adequate resources for teaching and learning and only very few are equipped with television and radio”.

The findings of this study also include that almost all the Educational Technology resources are grossly inadequate. This finding lends support to the findings of Salau (2001) Ezeliora (2003) who observed that “there are inadequate or non existence of Educational Technology facilities for classroom use”.

The findings of this study also include that there is an agreement among respondents on the factors that constrain the provision of these resources in schools. Among these factors is an insufficient fund in schools which seems to be one of the most prominent problems that affect ICT development in Nigeria schools. The finding lends credence to Okpala (1991:100) who observed that “funds for the development and servicing of Educational Technology resource centers are in most cases grossly inadequate”.

The result of the study also include that the respondents agreed on the items listed as measures for improving the provision of Educational Technology resources in Colleges of Education.

One of such measures is the provision of electricity. The findings of Adeyegbe, Modupe and Ayo (2003) were supported by this finding. They observed that the issue of power outage should be addressed and fought to a standstill because without electricity, the utilization of most of these resources would be a dream.

Implications for Bridging Gaps in Nigeria National Policy on Education

Providing modern Educational Technology resources in Colleges of Education has great implications for bridging very serious gaps between Nigeria Policy on Education and its implementation with particular emphasis on the Educational Services section of the policy. Educational services facilitate the implementation of educational policy and the attainment of policy goals and promotion of effectiveness of educational system. Nigeria as a nation is known for presenting well thought out programs and policies but the problem has always been implementation. According to Okon (2009:418) “poor implementation of well thought out policies in Nigeria has a long history”. The development of policies, innovations and programs is for the nation to achieve some degree of development in the sector under which such policies are formulated. The realization of these developments therefore lies on the proper implementation of such policies, programs and innovation. According to Tete (2002), “the problem in the Nigerian society is sometimes not with the introduction of new programs but with their implementation. For example, the educational services is meant to facilitate the implementation of educational policies and one of its goals is to make learning experiences more meaningful to children (learners) and also to develop and promote effective use of innovative materials in schools.

Be that as it may, with the findings of this study in which most of these innovative materials are not available and the few available ones are grossly inadequate, making learning experiences meaningful to children will obviously be a mirage and a mere dream. This study also went further to expose those factors that constrain the provision of these resources and the measures to be taken for improvement. This implies that if the findings of this study are implemented in Colleges of Education, teachers that will be produced in these Colleges will be better equipped to face the challenges and ever dynamic classroom activities brought about by the information age in which we find ourselves, after all, no nation can advance above the level of its teachers.

Conclusion

The findings of this study have shown that most Educational Technology resources are not available in Colleges of Education in Enugu State. The very few available ones are grossly inadequate for meaningful and effective classroom activities. The study also identified the factors that hinder the provision of these resources among which is insufficient fund. However, to improve on the provision of these resources in schools, there is an urgent need for funds to be made available for their procurement and development. This among other measures for improvement, will help to bridge the gap between policy and practice in educational system.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Government should provide teacher training institutions with state of the art Educational Technology resources for integration into the teacher education program.
2. There is an urgent need for the establishment of Educational Technology resource centers in Colleges of Education to cater for the instructional delivery needs of these Colleges.
3. Lecturers and other staff of Colleges of Education should be periodically and continuously trained in computer and ICT skills acquisition and also for improvisation skill acquisition.
4. There is an imperative need to address the issue of erratic electricity supply that has become a perennial problem in Nigeria.

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