Appraisal Of The Utilization Of Computer Based Instructional Materials And Strategies For Teaching Computer Studies In Colleges Of Education In Northeast, Nigeria

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ABSTRACT
This paper appraised the availability, utilization and adequate instructional strategy of computerized teaching materials for teaching computer studies courses in Colleges of Education in North East Nigeria. The study adopted survey research. The population of the study constitute all the Colleges of Education in the North East. Structured questionnaire was used as instrument for data collection, out of 1200 samples administered 900 were returned back. The results of the study indicated that most of the resources are not available and if available are not in large quantity to be utilized for large group of students. Therefore, the research recommends that, the available computerized teaching materials should be used adequately by grouping the students into batches and the lecturers should have the materials at their disposal to encourage the students to participate in the practical classes. With regard to the adequate instructional strategies, the National Commission for Colleges of Education (NCCE) should supervise the Colleges regularly to ensure that minimum standards are maintained in the Colleges of Education.
Keywords: Instructional Strategies, Computer Studies and Colleges of Education

INTRODUCTION
It is quite believed that, the need to integrate information and communication technology to life cannot be overemphasized. The advancement which ICT resources offer to education can be evident through accessibility to quality resource materials and instructional delivery. This can only be attained when it is drastically integrated in to the programmed instruction and learning process in the teacher education system.
Effective instructional delivery enhances learners' creativity and intellectual development through the use of ICT resources. For instance in the use of multimedia images, graphics, audio, text and motion picture for high quality of learning. ICT application and use will provide beneficial knowledge to this technological age and improve educational system and also give students a better education (Osuala, 2010).
Availability of adequate facilities and equipment aids learning and improves efficiency. Certain equipment is designed to enhance the teaching of certain skills in some Technical subjects without which such skills cannot be acquired. Availability of requisite facilities is important for the effective execution of any assigned task. Okoro and Iyeke (2004) maintained that, the qualification and background of teachers can only be completed when the right and adequate instructional facilities are provided for effective teaching and learning. In the same vein, Okwuanaso (2004) noted that availability of adequate

equipment are required to make the teaching and learning of skill oriented subject effective. Okwuanaso (2004) further added that a teacher cannot effectively teach a student how to operate a machine without having the machines in the classroom. Availability and utilization of equipment and facilities will stimulate students' senses and generate greater interest in the learning system and assist in the retention of ideas. From the operational point of view, equipment are important in the development of the three domains of knowledge, abilities and skills that reside in every man.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK
The theoretical framework of this study will be based on system theory of Bertalanffy, which was developed in 1915. The theory is stated as "all system have different parts performing different functions but in such a way that each part interacts and is interdependent with other parts and with other system (Benham in Yakubu, 2013).

The term system according to Wikipedia (2013) is a frame of reference that is composed of regularly interacting or interrelating group of activities, with each group impinging upon the other. Yakubu (2013) admits that a system can be said to consist of four things; the first is the object, the parts, elements or variables within the system. Second, a system consists of attributes the qualities or properties of the system and its objects. Third, a system had internal relationships among its objects and fourth, a system exists in an environment. The system framework is fundamental to organizational theory as organizations are complex, dynamic and goal oriented processes. This is because system theory in an organization studies is considered as humanistic extension of the natural science (Wikipedia, 2013).

Resources Utilization in Colleges of Education
Utilization of a wide variety of instructional resources can stimulate the interest and active engagement of learners to acquire the required skills. According to Oxford Advanced Learner's dictionary, the word utilization comes from the root word utilize which is defined as using something especially for a practical purpose. Utilization in this context refers to using available resources for skills acquisition in various courses in colleges of education. Miller (2011) opined that effective utilization of resources in colleges of education makes teaching and learning more interesting and to enables the students to participate fully in the actual work or task to be performed during practical work. The teachers are therefore expected to give considerable attention to the use of appropriate instructional resources to stimulate student's interest for skills acquisition. Utilization of resources in colleges of education is as important as the achievement of goals and objective of the program. Students learning outcome is not likely to be known or observed without utilizing the appropriate resources effectively and appropriately (Ibukun, 2011)

Effective utilization of instructional facilities will enhance learning activities, while non-utilization will only create negative feeling in the students (Haruna, 2010). It has thus, become inevitable to show concern with the utilization of resources (both human and material) being made available to the vocational and technical education sector (Salami in Haruna 2010). Continuous non- utilization of available resources lead only to materials wastage. According to Raw (2003) appropriate utilization of resources in schools controls dropout rates, maintains student discipline and makes students remain motivated for longer a period. School resources including Laboratory, classrooms, textbooks, teachers, and other instructional equipment/materials are critical in making teaching more effective These resources should be provided in quality and quantity in schools for proper utilization hence bring about effective teaching-learning process.

The use of computer based instructional strategies
The effective and efficient utilization of ICT largely depend on both teachers and learners, the proper use of ICT in teaching would develop both teachers and learners potentiality and creativity as regards to educational technology. Newborn as cited in Yaduma, Amuche, & Namessan (2013) suggests that infusing lessons with technology ultimately resonate more strongly than lessons using text books and written assignment. A good investment has been made in educational system to ensure that there are sufficient ICT resources in Colleges of Education for students to use in classrooms. Teacher's greater familiarity with resources in classroom would enable them to become more confident and competent in using ICT to improve teaching. For example, over the past few years' interactive white boards and data

projectors have been reproduced and also a lot of efforts have been made to ensure that ICT facilities are available in Colleges of Education. It has been observed by Goshit, (2009) that most Colleges both private and government, do not offer practical ICT training program. This implies that there are some Colleges offering computer studies in theory because of the insufficient resources that would facilitate efficient running of the program. Instructional materials have a vital role to play in the teaching and learning.

Use of Computer based instructional strategies in Computer Education

The concepts of Computer Education are full of abstract and the only means to bring this abstraction in to concrete reality is the application of computer based instructional materials in teaching and learning of the Computer Education courses. An instructional material gives a clear picture of a concept. The following are the advantages of using computer based instructional materials in teaching and learning;

  i. Increasing the rate of learning and at the same time allows teachers to use more time on other gainful activities.
  ii. Reinforce verbal and visual message. Learners generally find it difficult to understand abstract ideas discussed by their teacher. However, if the abstract ideas are put in form of model and pictures learners understand them ease and they remain permanent in their memories.
  iii. Through the use of media emphasis is place on realistic learning rather than rote learning.
  iv. Instructional media have a way of motivating and arresting learners, curiosity their consciousness increases and thereby providing a sound environment for realistic and enjoyable teaching and learning atmosphere.
  v. Terms and concepts that are abstract are best illustrated through the use of instructional media (Karimu, 2008).

Utilization of computer based instructional strategies in Colleges of Education

The utilization of the instructional materials depends on the ability of the teacher, on how to use it in delivery of teaching and learning activities to the students in the classroom. Therefore, quality of instructional service delivery entails the extent of effectiveness of which teachers carry their classroom teaching and learning process. Okegie (2008), The NUC executive secretary declared that most varsity teachers are incompetent. One may add that incompetent teachers can produce incompetent graduates (Akuegwe, Nwive & Agba, 2008). The instructional materials and devices when properly used can accomplish some objectives. They supply a concrete basis for conceptual thinking and reduce meaningful word responses of students; they make learning more permanent, they have the high degree of interest for students and offer reality of experience, which still depends on his relationship with the student.

RESEARCH METHODOLOGY

In effort to appraise the level of utilization of the available Computer teaching materials in Colleges of Education North-East, the study adopted descriptive survey research design. According to Uzoagulu (2011), "a survey research is a type of descriptive research in which data are usually collected, organized and described as they exist without interfering with the data". The area of this study comprised all the twelve (12) Colleges of education within the North-Eastern geopolitical zones of Nigeria, both Federal Colleges and State Colleges; which include Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states. The Instrument for Data collection for this study was a Checklist and a four-point Likert scale questionnaire. The checklist consists of two (2) different clusters. Cluster "A" was used to check the availability and adequacy of using Computer based instructional materials for teaching Computer studies in Colleges of Education. While cluster "B" of the checklist was used to check the instructional strategies delivered by the lecturers of Colleges of Education in North-East. The instrument was validated by three experts. Data collected were analyzed using Statistical Package for Social Sciences (SPSS), for decision purpose, the greater or equal to 2.50 was used as a level of acceptance. This implies that items that score a mean response of 2.50 and above was regarded as available or utilized, while items that score mean response below 2.50 was regarded as not available or utilized and agreed or disagree in relation to the instructional strategies.

RESULT AND DISCUSSION

This section presents the analysis and presentation of results from the data collected, the results were analyzed and presented based on the research questions. One thousand Two Hundred (1200) samples were distributed and Nine Hundred (900) samples were collected back, therefore, the research came up with the following responses;

Research Question I: *How adequate and functional are the Computer laboratories in Colleges of Education in North East?*

Table I: Shows the mean and standard deviation on the adequacy and availability of Computer laboratories for teaching Computer studies in Colleges of Education in North-East Nigeria

S/N	Items	Facilities Available						
		HA	MA	PA	NA	X	SDev	Remark
1	Computer Laboratory	550	120	110	120	3.22	0.90	Available
2	Information Technology Room	300	100	250	250	2.50	0.79	Available
3	PowerPoint Projector	318	230	212	140	2.81	0.84	Available
4	Computers for skill training, Ration one (1) Computer to three (3) students	250	300	230	120	2.76	0.83	Available
5	Public Address System (PAS Audio)	200	300	100	300	2.44	0.78	Not Available
6	Photo copying machines	120	180	300	300	2.13	0.73	Not Available
7	Stand by power generator	150	200	330	220	2.31	0.76	Not Available
8	Multimedia Projector	300	280	260	60	2.91	0.85	Available
9	Screen for Projector	230	300	303	67	2.77	0.83	Available
10	Comfortable Tables and Chairs in Computer Laboratory	250	200	240	210	2.54	0.80	Available
11	Air Conditioner for Laboratory	340	200	150	210	2.74	0.83	Available
12	Internet Facilities	100	120	200	480	1.82	0.67	Not Available
13	Lecturers Demonstration Stand	140	150	190	420	2.01	0.71	Not Available
14	Instructors Table and Chair	130	160	300	310	2.12	0.73	Not Available
15	Audio Visual Display	182	314	200	204	2.53	0.79	Available

Source: Field Survey (2021)

Apart from (Public Address System (PAS Audio), Photo copying machines, Stand by power generator, Internet Facilities, Lecturers Demonstration Stand and Instructors Table and Chair) Which the respondents disagree with the availability of the materials while (Computer Laboratory, Information Technology Room, PowerPoint Projector, Computers for skill training, Ration one (1) Computer to three (3) students, Multimedia Projector, Screen for Projector, Comfortable Tables and Chairs in Computer Laboratory, Air Conditioner for Laboratory and Audio Visual Display) which the respondents agreed with the availability of the materials in the study area.

Research Question II: *What is the level of utilization of the available computer based instructional materials in Colleges of Education in North East?*

Table II: Shows the mean and standard deviation on the level of utilization of computer based instructional materials for teaching Computer studies in Colleges of Education in North-East Nigeria

S/N	Items	Facilities Utilized						
		HU	MU	PU	NU	X	SDev	Remark
16	Computer Laboratory	80	120	300	400	1.87	0.68	Not Utilized
17	Information Technology Room	70	180	350	300	2.02	0.71	Not Utilized
18	PowerPoint Projector	120	300	200	280	2.29	0.76	Not Utilized
19	Computers for skill training, Ration one (1) Computer to three (3) students	120	300	300	180	2.40	0.77	Not Utilized
20	Public Address System (PAS Audio)	140	230	180	350	2.18	0.74	Not Utilized
21	Photo copying machines	90	300	270	240	2.27	0.75	Not Utilized
22	Stand by power generator	156	140	350	254	2.22	0.74	Not Utilized
23	Multimedia Projector	189	187	297	227	2.38	0.77	Not Utilized
24	Screen for Projector	200	178	234	288	2.32	0.76	Not Utilized
25	Comfortable Tables and Chairs in Computer Laboratory	189	199	287	225	2.39	0.77	Not Utilized
26	Air Conditioner for Laboratory	167	238	247	248	2.36	0.77	Not Utilized
27	Internet Facilities	167	234	230	269	2.33	0.76	Not Utilized
28	Lecturers Demonstration Stand	200	189	230	281	2.54	0.77	Utilized
29	Instructors Table and Chair	180	197	299	224	2.37	0.77	Not Utilized
30	Audio Visual Display	210	230	180	280	2.41	0.78	Not Utilized

Source: Field Survey (2021)

According to the finding based on this research question in the above table indicated that all the fourteen items (Computer Laboratory, Information Technology Room, PowerPoint Projector, Computers for skill training, Ration one (1) Computer to three (3) students, Public Address System (PAS Audio), Photo copying machines, stand by power generator, Multimedia Projector, Screen for Projector, Comfortable Tables and Chairs in Computer Laboratory, Air Conditioner for Laboratory, Internet Facilities, Instructors Table and Chair and Audio Visual Display) are not being utilized by the students or used for the purpose of teaching and learning Computer studies in the study area except the Lecturers Demonstration Stand which was being responded as utilized.

Research Question III: *How adequate are the Teachers for teaching computer studies courses in Colleges of Education in North-East Nigeria?*

Table III: Shows the mean and standard deviation on the instructional strategies for teaching Computer studies in Colleges of Education in North-East Nigeria

S/N	Item Statements	SA	A	D	SD	X	SDev	Remark
31	Course contents are covered before examination	318	217	239	126	2.81	0.84	Agreed
32	Students' learning is assessed using variety of methods	270	300	210	120	2.80	0.84	Agreed
33	Students are informed about the criteria for evaluation	198	230	178	294	2.37	0.77	Disagree
34	Computer science lecturers answer students questions relating to their course of study during lesson delivery	312	320	120	148	2.88	0.85	Agreed
35	Computer science lecturers show sincere interest in solving students' academic problem	281	189	167	263	2.54	0.80	Agreed
36	Difficult points are explained by lecturers in class till they are understood	218	233	210	239	2.48	0.79	Disagree
37	Computer science lecturers are interested in students achievement	219	230	234	217	2.50	0.79	Agreed
38	Computer science lecturers present materials logically during instructions in class	213	240	265	182	2.54	0.80	Agreed
39	Computer science lecturers draw and maintain interest of students to the subject taught.	243	253	187	217	2.58	0.80	Agreed
40	Computer science lecturers deliver study materials in a clear and comprehensive way	187	231	291	191	2.46	0.78	Disagree
41	Computer science lecturers demonstrate culture of speech in form of clear articulation	342	224	280	54	2.95	0.86	Agreed
42	Computer science lecturers ask questions in class to simulate discussions	267	217	200	216	2.59	0.81	Agreed
43	Computer science lecturers are objective in assessing students' performance.	133	231	321	215	2.31	0.76	Disagree
44	Computer science lecturers are punctual to class	231	324	223	122	2.74	0.83	Agreed
45	Computer science lecturers are willing to give students individual attention	213	234	223	230	2.48	0.79	Disagree
46	Computer science lecturers keep accurate records of students	232	214	241	213	2.52	0.79	Agreed

	assessments							
47	Computer science lecturers strives to maintain feedback from students	143	154	342	261	2.20	0.74	Disagree
48	Computer science lecturers use various sources of information (supplementary literature, Internet), to enhance teaching and learning.	280	200	220	200	2.62	0.81	Agreed
49	Computer science lecturers are unbiased in assessment of students' achievement.	200	250	150	300	2.39	0.77	Disagree

Source: Field Survey (2021)

Out of the nineteen (19) item used for measuring instructional strategies, twelve (12) items (Course contents are covered before examination, Students' learning is assessed using variety of methods, Computer science lecturers answer students questions relating to their course of study during lesson delivery, Computer science lecturers show sincere interest in solving students' academic problem, Computer science lecturers are interested in students achievement, Computer science lecturers present materials logically during instructions in class, Computer science lecturers draw and maintain interest of students to the subject taught, Computer science lecturers demonstrate culture of speech in form of clear articulation, Computer science lecturers ask questions in class to simulate discussions, Computer science lecturers are punctual to class, Computer science lecturers keep accurate records of students assessments and Computer science lecturers use various sources of information (supplementary literature, Internet), to enhance teaching and learning.) were agreed by the respondents as adequate strategy of teaching in the study area. While seven items (Students are informed about the criteria for evaluation, Difficult points are explained by lecturers in class till they are understood, Computer science lecturers deliver study materials in a clear and comprehensive way, Computer science lecturers are objective in assessing students' performance, Computer science lecturers are willing to give students individual attention, Computer science lecturers strives to maintain feedback from students and Computer science lecturers are unbiased in assessment of students' achievement) which the respondents disagree with the assertion on the teaching strategy and adequacy in the study area.

DISCUSSION

The research identified that the respondents agreed on the availability and adequate computerized teaching materials in the study area. The finding is in conformity with study by Uzuegbu et al (2012) who indicated Computerized teaching materials are available and adequate in the study area, this is attached with the level of importance of using computerized teaching materials in Colleges of Education in the North-East, the study also observed that Government is playing an important role in providing teaching materials in Colleges of Education only that it is in small quantity.

The study also discovered on the utilization of the available teaching tools, the respondents disagreed with all the fifteen (15) items presented in the research, which shows there are materials in the study area but poorly utilized by the lecturers and the students for teaching and learning. This statement is also in conformity with the study of Nwosu (2010) who indicated that most of the Lecturers teaching Computer studies courses are not engaging the students with practical teaching rather than theories, this could be as a result of the large number of students taking courses since Computer Studies is a general course.

The response on the adequate instructional strategies, the finding indicated that the instructional strategies are adequate with about twelve (12) items out of nineteen (19) items were rated agreed by the respondents, therefore it can be observed that lecturers are giving necessary support as it affects skills training and other professional development in the study area, this response is in agreement with the opinion of Nwafor & Eze (2013) which indicated that teachers are giving out the required teaching strategy in order to impart knowledge to the students with accompanying support for skills acquisition and development.

CONCLUSION AND RECOMMENDATIONS

From the findings of this study which revealed that most of the resources are not enough in number and not utilized for teaching of Computer studies courses in Colleges of Education in the study area. Based on these findings, it could be concluded that lecturers in the Colleges of Education in the North-East are not teaching using the required materials for skill acquisition and this may affect the practical knowledge of the students on the use of Computer skills.

Therefore, the research recommends that, the available computerized teaching materials should be used adequately by grouping the students into batches and the lecturers should have the materials at their disposal to encourage the students to participate in the practical classes. With regard to the adequate teaching strategies, the National Commission for Colleges of Education (NCCE) should supervise the Colleges regularly to ensure that minimum standards are maintained in the Colleges of Education in the North-East and Nigeria in general.

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