ASSESSMENT OF PROVISION, ACCESSIBILITY AND UTILIZATION OF MULTIMEDIA RESOURCES IN THE CONDUCT OF MICRO-TEACHING PRACTICUM IN FEDERAL COLLEGE OF EDUCATION, ZARIA

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Abstract

The study assessed the provision, accessibility and utilization of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria. 3 research questions and 3 null hypotheses were stated. The design of the study was descriptive research design. The population of this study comprised of all Academic Staff in the Department of Curriculum and Instruction, Federal College of Education, Zaria and the sample of the study consists of 31 Academic Staff based on the Research Advisors' table for sample specification. Disproportional stratified sampling was used in selecting the number of respondents for the study in relation to gender. The data collection instrument was the structured questionnaire entitled "Provision, Accessibility and Utilization of Multimedia Resources Questionnaire" (PAUMREQ). The instrument was duly vetted by experts and has the reliability co-efficient of 0.78.The study used arithmetic mean and standard deviation to answer the questions posed by the study while independent samples t-test was used to validate the null hypotheses at 0.05 level of significance. The study among others discovered that multimedia resources for the conduct of micro-teaching practicum are available, partially accessible and highly un-utilized. In the light of findings made, it was recommended that among others that effort should be made by both the College management, the Heads of School of Education and the Department of Curriculum and Instruction in ensuring that these resources are not only available but also accessible and utilized by the Academic Staff for effective implementation of micro-teaching practicum.

Keywords: Accessibility, Micro-teaching, Multimedia, Provision &Utilization

Introduction

The introduction of Information and Communication Technology (ICT) and its components like the multimedia resources in teaching remains one of the important dimensions of human technological advances in recent times. It is regarded as one of the main innovations in the education sector due to the fact that it has the potential to bring about substantial system-wide benefits in terms of improving the quality of teaching and learning process. In the light of this, Abdallah (2013) stated that there is of course a need to emphasize the added value that ICT can bring about to teaching and learning and that effort should be geared towards effective development of learning resources.

The term multimedia posits Muhammad (2017) means more than one media. Multimedia are instructional programmes that can be highly interactive and feature combinations of sound, animation, video, graphics, and text. Similarly, Hostetler (2001),asserts that "multimedia is the use of computer to present and combine text, graphics, audio and video with links and tools that let the user navigate, interact, create and communicate". In other words, multimedia is the combination of various digital media, into an integrated multi-sensory interactive application or presentation to convey information to an audience (Butcher and Powell, 2005; Demodharan and Rengaranjan, 2007). Therefore, multimedia is a learning tool that allows learners to organize, represent and construct knowledge in multiple modalities that include text, audios, graphics, animation and videos (Wang, 2006). In addition, multimedia programmes do not necessarily require Internet access.

With multimedia technology becoming such an integral part of students' lives, educators are incorporating it into projects to promote learning in their classrooms. The trend toward technology enhanced classrooms has escalated quickly at the turn of the millennium in Nigeria and students are increasingly becoming tech-savvy day by day. Students are using multimedia to connect with different cultures and societies that can broaden their learning experience, (Warschauer, 1999). Technology provides an innovative way to reach and collaborate with students and educators all over the world. However, not only is technology useful in communicating with others, it also provides unique ways to complete assignments. Additionally, students learn better and faster when they are actively engaged in their learning. Digital media can be a great vehicle for student engagement with classroom technology" (Quinones, 2010).

Despite the fact that Nigeria has accepted ICT as an innovation that should be incorporated, as an integral part into our instructional delivery system in all school subjects, it is lamentable that a number of factors have beset the effective access and utilization of multimedia resources toward teaching and learning in Nigeria's Colleges of Education. Nonetheless, it is quite disturbing that the fact that ICT facilities (multimedia resources) are in gross short supply particularly in some Colleges of Education and there is dearth of academic staff versed in the knowledge of the usage and application of multimedia resources. The few that have the knowledge do not often utilize it for teaching and learning purposes.

Objectives of the Study

The main objective of this study is to assess the provision and management of multimedia in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria.The study is guided by the following specific objectives which are to:

1. Determine the extent to which multimedia resources are provided in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;
2. Examine the extent to which multimedia resources are accessed in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;
3. Find out the extent to which multimedia resources are utilized in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria.

Research Questions

The study shall be guided by the following research questions:

1. To what extent are multimedia resources provided in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria?
2. How accessible are multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria?
3. What is the extent to whichmultimedia resources are utilized in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria?

Null Hypotheses

The following hypotheses are formulated and tested at 0.05 level of significance:

$H0_1$: There is no significant difference in the opinions of male and female teachers on theextent to which multimedia resources are provided for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;

$H0_2$: There is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are accessible for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;

$H0_3$: There is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are utilized for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria.

Methodology

The design of the study is descriptive research design. It is usually employed by collecting data and describing in systematic manner the characteristic features or facts about a given population from a few people or items considered to be representative of the entire group (Salihu and Adamu 2016). The population of this study comprised of all Academic Staff in the Department of Curriculum and Instruction, Federal College of Education, Zaria. The decision to use the Academic Staff from the Department of Curriculum and Instruction is informed by the fact that the course EDU223 "Micro-Teaching Practicum is domiciled in the department. There are 34 Academic Staff in the Department of Curriculum and Instruction, Federal College of Education, Zaria out of which 22 are males while 12 are females as at October, 2017.

The sample of this study consists of 31 Academic Staff in the Department of Curriculum and Instruction, Federal College of Education, Zaria, Nigeria. The decision to use 31 respondents is based on the Research Advisors' table for sample specification. It indicates that for population of 34 at 95 percent confidence level and margin error of 5 percent, the sample size of 31 is adequate. Disproportional stratified sampling was used in selecting the number of respondents for the study in relation to gender. Disproportional sampling is where the number of respondents in each stratum (in this case gender) does not reflect proportion in population. According to Garson (2012) "disproportionate stratified sampling occurs when disproportionate numbers of subjects are drawn from some strata compared to others." This is necessitated by the fact that the number of male respondents by far outnumbered that of their female counterparts. The justification for the adoption of this technique is to ensure that, sufficient number of female respondents is selected from the sampled institutions.

The data collection instrument for this study is the structured questionnaire entitled "Provision, Accessibility and Utilization of Multimedia Resources Questionnaire" (PAUMREQ). Muhammad (2017) define questionnaire as "a method of gathering information from respondents about attitudes, knowledge, beliefs and feelings". The questionnaire is designed into four sections. Section 'A' deals with the bio-data variables of the respondents, section 'B' is on the Academic Staff's opinions on the provision of multimedia resources. This section has seventeen items which are presented on a Likert-type four point scale ranging from Highly Available (HA), Partially Available (PA), Unavailable (UA) and Highly Unavailable (HU) with 4, 3, 2, 1 point value attached to them respectively. Section 'C' deals with Academic Staff's access level to multimedia resources with which are also presented on a Likert-type four point scale ranging from Fully Accessible (FA), Moderately Accessible (MA), Inaccessible (IA) and Highly Inaccessible (HI) with 4, 3, 2, 1 point value attached to them respectively while section 'D' is on the utilization of multimedia resources presented on a Likert-type four point scale ranging from Fully Utilized (FU), Partially Utilized (PU), Un-utilized (U) and Highly Not-Utilized (HN). The instrument was duly vetted and its reliability co-efficient calculated using Cronbach alpha formular was 0.78 which is considered adequate for the main study based on the 0.64 threshold set by Danjuma and Muhammad (2011).

The study used percentage and frequency counts to present the bio-data variables of the respondents while arithmetic mean and standard deviation were used to answer the questions posed by the study. The independent samples t-test was used to validate the null hypotheses at 0.05 level of significance.

Results

Table 1: Opinions of Academic Staff on the provision of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria

S/N	Multimedia Resources	HA	PA	UA	HA	Mean	Std.Dev	Remark
1	Computer	13	08	07	03	2.63	1.21	Available
2	Multimedia projector	11	14	04	02	3.23	1.37	Available
3	Close circuit camera	07	12	03	09	3.35	1.12	Available
4	TV sets	12	09	08	02	3.15	1.37	Available
5	Overhead projector	10	06	04	11	3.38	1.54	Available
6	Slide projector	08	10	03	10	2.68	1.25	Available
7	Opaque projector	07	09	03	12	3.25	1.28	Available
8	Public address system	10	08	07	06	3.10	1.22	Available
9	DVD player	17	06	04	04	3.13	1.39	Available
10	Audio	13	07	04	07	3.40	1.59	Available
11	Video machines	12	10	08	01	3.40	1.59	Available
12	Still cameras	09	14	05	03	3.23	1.37	Available
13	Video cameras	10	12	01	08	3.35	1.12	Available
14	Video projector	14	09	02	06	3.15	1.37	Available
15	Projection screen	09	15	06	01	3.38	1.54	Available
16	Satellite	13	07	08	03	2.68	1.24	Available
17	Internet	14	06	07	04	3.25	1.28	Available
18	Transparency	09	16	04	02	3.10	1.22	Available
19	Electronic smart board	11	14	03	03	3.13	1.39	Available
20	Scanners/digitizers	13	07	08	03	3.40	1.59	Available

Result from Table 1 shows the opinions of Academic Staff on the provision of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria. Based on the 2.50 decision mean threshold, it can be seen that all (1-20), these multimedia resources are available in the College.

Table 2: Opinions of Academic Staff on accessibility of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria

S/N	Multimedia Resources	FA	MA	IA	HI	Mean	Std.Dev	Remarks
1	Computers	10	11	05	05	3.10	1.21529	Accessible
2	Multimedia projector	13	08	07	03	3.40	1.59808	Accessible
3	Close circuit camera	11	14	04	02	2.68	1.24833	Accessible
4	TV sets	07	12	03	09	3.25	1.27601	Accessible
5	Overhead projector	12	09	08	02	3.10	1.21529	Accessible
6	Slide projector	04	11	10	06	2.13	1.39940	Inaccessible
7	Opaque projector	10	10	05	06	2.40	1.59808	Inaccessible
8	Public address system	07	09	03	12	3.40	1.59808	Accessible
9	DVD player	14	04	07	06	2.68	1.24833	Accessible
10	Audio player	17	10	02	02	3.13	1.39940	Accessible
11	Video machines	13	07	04	07	3.40	1.59808	Accessible
12	Still cameras	13	08	07	03	2.48	1.15442	Accessible
13	Video cameras	11	14	04	01	3.23	1.36790	Accessible
14	Video projector	07	12	03	09	2.35	1.12204	Inaccessible
15	Projection screen	12	09	08	02	2.15	1.36907	Inaccessible
16	Satellite	10	11	06	04	2.38	1.53067	Inaccessible
17	Internet	10	10	03	08	2.68	1.24833	Inaccessible
18	Transparency	12	09	03	07	2.25	1.27601	Inaccessible

19	Electronic smart board	07	07	10	07	2.10	1.21529	Inaccessible
20	Scanners/digitizers	17	09	02	03	3.13	1.39940	Accessible

Result from Table 2 shows the opinions of Academic Staff on the level of access to multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria. Based on the 2.50 decision mean threshold, it is clear that computers, multimedia projector, close circuit camera, TV sets, overhead projector, public address system, DVD player, audio player, video machines, still cameras and scanners/digitizers are accessible by the Academic Staff for use during micro-teaching practicum in the College. On the other hand, Slide projector, Opaque projector, Video projector, Projection screen, Satellite, Internet, Transparency and Electronic smart board are inaccessible for use by the Academic Staff during micro-teaching practicum in the college.

Table 3: Opinions of Academic Staff on the utilization of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria

S/N	Multimedia Resources	FU	PU	U	HN	Mean	Std.Dev	Remark
1	Computer	13	08	07	03	2.3750	1.53067	Not utilized
2	Multimedia projector	11	14	04	02	2.8750	1.15442	Utilized
3	Close circuit camera	07	12	03	09	2.2250	1.36790	Not utilized
4	TV sets	12	09	08	02	2.3500	1.12204	Not utilized
5	Overhead projector	10	06	04	11	2.1500	1.36907	Not utilized
6	Slide projector	08	10	03	10	2.3750	1.53067	Not utilized
7	Opaque projector	07	09	03	12	2.2750	1.24833	Not utilized
8	Public address system	12	07	07	05	2.9750	1.15442	Utilized
9	DVD player	11	04	08	08	2.1000	1.21529	Not utilized
10	Audio	13	08	07	03	2.1250	1.39940	Not utilized
11	Video machines	09	04	10	08	2.4000	1.59808	Not utilized
12	Still cameras	07	12	03	09	2.3750	1.15442	Not utilized
13	Video cameras	12	09	08	02	2.2250	1.36790	Not utilized
14	Video projector	10	06	04	11	2.3500	1.12204	Not utilized
15	Projection screen	08	10	03	10	3.1500	1.36907	Utilized
16	Satellite	07	09	03	12	2.3750	1.53067	Not utilized
17	Internet	05	08	10	08	2.4750	1.24833	Not utilized
18	Transparency	08	06	10	07	2.2500	1.27601	Not utilized
19	Electronic smart board	13	07	04	07	2.1000	1.21529	Not utilized
20	Scanners/digitizers	13	08	07	03	2.1250	1.39940	Not utilized

Result from Table 3 shows the opinions of Academic Staff on the utilization of multimedia resources in the conduct of micro-teaching practicum in Federal College of Education, Zaria. Based on the 2.50 decision mean threshold, it is clear that only multimedia projector, public address system and Projection screen are utilized during micro-teaching by the Academic Staff.

$H0_1$: There is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are provided for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;

Table 4: Independent t-test samples statistics on the difference in the opinions of lecturers on the availability of multimedia resources

Gender	N	Mean	Std.Dev	Df	t Cal	t Crit	P	Decision
Male	20	74.56	13.19					$H0_1$ Retained
				29	0. 77	1.96	0.44	
Female	11	73.14	6.62					

Calculated p > 0.05, calculated t< 1.96 at DF 29

Results of the independent t-test samples statistics in Table 4 shows that there is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are provided for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria. This is because the calculated p value of 0.44 is found to be higher than the 0.05 alpha level of significance and the computed t-value of 0.77 is found to be lower than the 1.96 t critical at Df 29. Their computed mean opinions regarding the availability of multimedia resources are 74.5636 and 73.1364 for males and females respectively. Therefore, the null hypothesis is hereby retained.

$H0_2$: There is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are accessible in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria;

Table 5: Independent t-test samples statistics on the difference in the opinions of teachers on the accessibility of multimedia resources

Gender	N	Mean	Std. Dev	Df	t-Cal	t-Crit	P	Decision
Male	20	73.11	14.97					$H0_2$ Rejected
				29	5.37	1.96	0.00	
Female	11	83.17	2.61					

Calculated p < 0.05, calculated t > 1.96 at DF 29

Details of the independent t-test samples statistics in Table 5 shows that, there is significant difference in the opinions of male and female teachers on the extent to which multimedia resources are accessible in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria. This is because the calculated p value of 0.00 is found to be lower than the 0.05 alpha level of significance and the computed t value of 5.37 is found to be higher than the 1.96 t critical at Df 29. Their computed mean opinions are 74.57 and 73.14 for male and female respondents respectively. Therefore the null hypothesis is hereby rejected.

$H0_3$: There is no significant difference in the opinions of male and female teachers on the extent to which multimedia resources are utilized for the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria.

Table 6: Independent t-test samples statistics on the difference in the opinions of teachers on the utilization of multimedia resources

Gender	N	Mean	Std.Dev	Df	t-cal	t-Crit	P	Decision
Male	20	71.62	17.70					$H0_3$ Rejected
				29	2.431	1.96	0.02	
Female	11	77.67	8.92					

Calculated p < 0.05, calculated t > 1.96 at DF 29

Results of the independent t-test samples statistics in Table 6 shows that there is significant difference in the opinions of male and female teachers on the extent to which multimedia resources are utilized in the conduct of micro-teaching practicum in Federal College of Education, Zaria-Nigeria. This is

because the calculated p value of 0.017 is found to be lower than the 0.05 alpha level of significance and the computed t value of 2.43 is found to be higher than the 1.96 t critical at Df 29. Their computed mean opinions regarding the utilization of multimedia resources are 71.62 and 77.67 for male and female respondents respectively. Therefore the null hypothesis is hereby rejected.

Discussions

The study discovered that multimedia resources for the conduct of micro-teaching practicum are available. It is also revealed that substantial numbers of these multimedia resources are not accessible despite being available. In addition, almost all the multimedia resources identified in the questionnaire with the exception of multimedia projector, public address system and Projection screen were not utilized during micro-teaching session by the teachers in the department under study.

Some of the observable reasons advanced for the inaccessibility and under-utilization of these multimedia resources during the conduct of micro-teaching practicum include, teachers' ignorance, lack of operational skills, lack of commitment on the part of the college management to train and retrain teachers on the application of these multimedia resources, low internet connectivity and poor attitude of teachers towards new technologies among others. The findings of this study corroborates that of Muhammad (2017) which revealed the availability of multimedia resources for the effective teaching of Social Studies in colleges of education in north-central Nigeria but also found that these are not effectively organised and utilized by teachers. In sharp contrast, Bostan (2015) discovered that although digital technologies are fully integrated into the way people interact at work when they are engaged in business and doing trade, ICT are not yet fully exploited into the education system and training in Romania. The study shows that the vast majority of teachers (87%) use digital resources in the didactic process. Of these, 70% use modern resources during the assessment process of students through the elaboration of projects, essays, portfolios.

It was concluded that the interactive whiteboard is used in the educational process at a rate of 89% due to the small number of existing interactive whiteboards in the schools, on the one hand, and on the other hand, teachers do not know how to use it. Using the computer and multimedia tools in teaching is considered beneficial by 56% of teachers that using it effective (87%) of the participants in this study. A significant percentage (44%) points out that an excessive use of the computer may induce students a passive attitude. From the research result that implementation of the AEL system in schools does not have expected performance because it is used in a proportion of 11%. The implications of inclusion the computer in physics classes are considered positive, especially in data processing in laboratory work, plotting or observing physical phenomena which cannot be reproduced in the laboratory school. 90% of focus group participants have recognized that they give as homework realization of projects through the computer. 22% of teachers surveyed are skeptical regarding the evolution of formal learning via computer. Their skepticism was justified by the huge costs that are imposed, the development of digital resources for teachers and students, tablets for students and teachers.

Conclusions

In the light of the findings made, it concluded that multimedia resources needed for effective implementation of students' micro-teaching practicum in Federal College Education, Zaria. It is also concluded that, these resources are partially accessible for use by the Academic Staff in the College. However, it is the conclusion of this study substantial numbers of these resources are un-utilized during micro-teaching practicum.

Recommendations

In the light of the findings and conclusions made, the following recommendations are put forth:

1. Procurement of adequate multimedia resources necessary for effective implementation of micro-teaching practicum is sustained by the college management and other intervening agencies;
2. Effort should be made by both the College management, the Heads of School of Education and the Department of Curriculum and Instruction in ensuring that these resources are not only available but also accessible by the Academic Staff in the Department for effective implementation of micro-teaching practicum;
3. All the needed infrastructures necessary for effective utilization of multimedia resources are put in place to enable hitch-free usage by the Academic Staff in the Department.

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