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# Utilization of Multimedia Technologies by Faculty Lecturers in Instruction Delivery in Universities in Enugu and Anambra States, Nigeria.

By

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## Abstract

*The study investigated the extent to which faculty lecturers utilize multimedia technologies in instruction delivery in Nigeria with focus on universities in Enugu and Anambra States. The population for the study comprised 883 Faculty of Education lecturers in the four public universities that were surveyed. A total of 221 lecturers were selected for the study using simple random sampling technique. The instrument for data collection was researcher-developed questionnaire, which was face-validated by three experts from computer science and computer education departments from University of Nigeria, Nsukka. The questionnaire contained 13 items on a four-point response scale weighing 4, 3, 2, 1, respectively. An overall reliability coefficient of 0.90 was obtained using the Cronbach Alpha method for the four clusters in the instrument. The data collected from the respondents were analyzed using mean scores while the null hypotheses formulated for the study were tested using the t-test statistic, at 0.05 level of significance. The findings of the study revealed that faculty lecturers utilize multimedia hardware and software/elements at a low extent in instruction delivery. It was also revealed that factors such as inadequate multimedia facilities, poor funding, lack of multimedia design and presentation skills, shortage of electricity supply, lack or irregular training of lecturers on multimedia design and use in instruction delivery affect the effective adoption of multimedia in teaching and learning. The study therefore recommended regular professional development of lecturers, procurement of state-of-the-art multimedia technologies and provision of technical support as various strategies for effective use of multimedia by the faculty lecturers in instruction delivery in Nigerian universities.*

**Keyword:** Digital Technologies, Multimedia Technology, Instruction Delivery, Faculty Lecturers.

## Introduction

All over the world, technological advancement has continued to change the way people solve their daily problems or perform their daily tasks. This has affected the operational processes in various sectors of the economy. According to Vockley (2012), no industry or organization can remain competitive today without making comprehensive use of technology in all of its operations. Information technology has become so important that every country, organization or institution, no matter how highly or lowly placed, want to identify and embrace it (Akuegwu, Ntukidem, Ntukidem and Jaja, 2011). In the education sector, digital technologies play vital roles especially in transforming the methods of teaching and learning as well as the overall educational research activities. Agogino and Muramatsu (1998) asserted that the advent of low cost, widely

accessible computers and high bandwidth networks is opening the door for new methods to enhance and possibly transform the traditional education process, while the advent of digital courseware and electronic supplements is becoming widely accessible by students and teachers in general. This was why Ruthven, Hennessey and Brindley (2004) stated that Information and Communication Technology (ICT) has become the strategic alternatives for universities all over the world to enhance the delivery of quality education effectively and efficiently. Ilechukwu (2013) observed that the utilization of instructional resources such as e-learning has made it possible to deliver educational services devoid of traditional challenges. Egbiri (2012) stated that lecturers, instructors and students cannot do much without adequate knowledge of ICT including multimedia systems.

Multimedia system is part of digital technology that can be used in the field of education for effective instruction delivery. It could be described as a wide range of computer-based teaching and learning resources/applications and facilities that supplement or complement the educational process. Such technologies include computer systems, mobile devices (such as iPad, iPhone), multimedia projectors, interactive whiteboards, internet facilities, courseware and software design tools (such as authoring tools) among others. These technologies can be combined to produce multiple media elements, often referred to as multimedia. According to Patti Shank (2005), multimedia is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (video), animation, audio, and any other media where every type of information can be represented, stored, transmitted, and processed digitally. Similarly, Oshinaike and Adekunmisi (2012) defined multimedia as the combination of various digital media types such as text, images, sound and video into an integral multi-sensory interactive application or presentation to convey a message or information to an audience.

There are two main categories of multimedia technologies: the hardware and software. The multimedia hardware components include computer system, multimedia/data projector, interactive whiteboard, instructional CDs/DVDs, iPad/smart phones, internet facilities, digital camera, microphone, speaker, etc., while multimedia software include video, audio, graphics, animation, e-learning platforms as well as software used for editing multimedia elements. The multimedia technologies, when utilized properly and effectively, play vital roles in promoting the quality of teaching and learning in higher institutions. According to Neo and Neo (2000), multimedia use in teaching and learning has introduced important changes in the education system and impacted the way educators communicate information to learners. Asogwa (2009) expressed that when appropriate media are selected by teachers, the students' learning will be optimized, which means an increase in the value of learning outcome. According to Brashears, Akers and Smith (2005), with the rise of the internet, educational institutions now have the ability not only to transfer text-based materials, similar to the original correspondence courses, but to provide students with hypertext, audio, video, interactive chat and many other methods of instruction delivery.

The presence of multimedia technologies for instruction delivery does not guarantee its effective utilization by faculty lecturers. The term "ICT utilization", as defined by Yusuf (2005), is the presentation and distribution of instructional content through web environment (e-teaching) or systems offering integrated range of tools (stand-alone computer instruction, CD-ROM among others) to support learning and communication. Similarly, the present study defines multimedia utilization as the actual, effective and consistent use of multimedia technologies (hardware and

software) by faculty lecturers in instruction preparation, delivery, and assessment. Faculty lecturers in this study refer to a group of professionally trained individuals/teachers who teach in the faculty and institute of education at the higher education level. They are lecturers in the Faculty or School of Education in the Colleges of Education and Universities. The faculty of education lecturers train individuals (students) who will teach at the different levels of education system. The way students are trained is determined by the extent to which they are equipped with the requisite relevant and diverse skills required to face the challenges in their future careers.

The Federal Republic of Nigeria (2004), in her National policy on Education (NPE, 1981, revised 1998, 1991, 1998 and 2004) emphasized on provision of the type of education that contributes to national development through high level relevant manpower training. This can effectively be achieved when teachers/lecturers adopt the best practices including computer multimedia-based technology approaches required for effective instruction delivery. However, the question now is to what extent do faculty lecturers integrate and utilize multimedia technologies in their classroom instruction delivery?

**Purpose of the Study**

The major purpose of the study was to investigate the extent to which faculty lecturers utilize multimedia technologies in instruction delivery in Universities in Anambra and Enugu States, Nigeria. Specifically, the study determined the:

1. extent to which faculty lecturers utilize multimedia hardware in instructional delivery.
2. extent to which faculty lecturers utilize multimedia software/elements in instruction delivery.
3. perceived challenges to effective use of multimedia technologies in instruction delivery in the faculty of education.
4. perceived strategies for effective utilization of multimedia technologies by faculty lecturers in instruction delivery.

**Research Questions**

The research questions posed in this study are:

i. To what extent do faculty lecturers utilize multimedia hardware in their instruction delivery?
ii. To what extent do faculty lecturers utilize multimedia software/elements in their instruction delivery?
iii. What are the perceived challenges to effective use of multimedia technologies in instruction delivery in the faculty of education?
iv. What are the perceived strategies for effective utilization of multimedia technologies by faculty lecturers in instruction delivery?

**Hypotheses**

$HO_1$: There is no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia hardware in instruction delivery.

$HO_2$: There is no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia software/elements in instruction delivery.

## Literature Review

Several research studies (Olibie and Ezenwanne, 2013; Akindoju, Nwagwu, Akintoye, Avoseh, & Aregbede, 2014; Amedu, 2014; Oshinaike and Adekunmisi, 2012; Akuegwu et al., 2011; Okon and Jacob, 2002) investigated teachers' level of utilization of Information and Communication Technology (ICT) in instruction delivery. In a study conducted by Olibie and Ezenwanne (2013) on the ICT awareness and use for Home Economics curriculum delivery in Anambra State revealed that the extent to which Home Economics teachers utilize ICT facilities in teaching and learning in the State's secondary schools, is low. Similarly, Akindoju et al (2014) enquired about the adequacy and utilization of ICTs by computer science lecturers in tertiary institutions in Lagos State Nigeria. Their findings indicate that many of the resources (such as desktop/laptop computers, notebooks, intranet, personal email account, digital projectors/interactive whiteboards, specialist software applications and internet) were hardly used for instruction delivery. Akindojuet al. lamented and reasoned that since ICT resources are not regularly used and were often not adequate for instruction delivery, Nigeria's quest to be a major player in the information age may be a mere dream.

In a similar study, Amedu (2014) assessed the use of e-learning facilities by Home Economics teachers in Delta State Nigeria. The study revealed that e-learning enhances the teaching of home economics through provision of better researched information, easier storage and retrieval of teaching materials, improving quality of teaching and providing platform for update of teachers' knowledge and group learning. However, same study concludes that in spite of the potentials inherent in the use of e-learning in the process of educational development, its use for teaching and learning in schools is abysmally low. On the contrary, Ilechukwu (2013) assessed the utilization of e-learning opportunities for effective teaching and learning of Religion in Nigerian tertiary institutions. It was revealed that Religion teachers utilized e-learning applications to keep students' records and grades; utilize e-learning for pre-class preparations (sourcing materials for lesson preparation/lesson notes, etc.); utilize e-learning to deliver lesson using PowerPoint and multimedia projector to create, give, receive and grade students' assignments and tests online, among others.

Another study by Okon and Jacob (2002) on the use of ICT by academics in selected universities in Nigeria, found that 61.30% of the respondents professed to use computer in their teaching and research works. However, the findings revealed that the use of computers by academics was more on statistical analysis than on the actual teaching and learning. In a similar study by Oshinaike and Adekunmisi (2012), it was revealed that majority, 81.25% of the respondents, used multimedia resources for their research and publication activities and outlets; paper presentations; forming lecture notes and not in the actual use in the classroom for teaching. Wamalwa (2008) investigated the utilization of instructional media to enhance students' learning of English and found out that teachers never use video, TV or slides in teaching. The study also revealed that the most underutilized materials by both teachers and students include pictures, films, projector, computers, among others. Based on this finding, students indicated that if teachers of English language use teaching resources, then topics will easily be understood, they will be motivated to learn, their learning will be enhanced, and they will perform well. According to Ojindah, Wordu and Gorden (2017), multimedia facilities enhance and enable students to learn in a more effective way as well as enhance classroom management.

Based on the literature reviewed in the present study, findings generally revealed that ICTs and other instructional media were either underutilized, not utilized or utilized outside classroom teaching and learning. Findings also revealed that instructional media (multimedia) help students in their learning and therefore should be used by lecturers/teachers in the classroom. However, no study was conducted to investigate the extent faculty of education lecturers utilize multimedia in instruction delivery in the universities in Anambra and Enugu States. Therefore, this is the gap the study tends to fill.

## Methodology

The study adopted descriptive survey research design. The design was used because the study aimed at seeking information from respondents (faculty of education lecturers) on the extent to which they utilize multimedia technologies in instruction delivery, the perceived challenges hindering multimedia adoption in instruction delivery as well as the perceived strategies for successful adoption. The study was conducted in the four government-owned universities in Anambra and Enugu States, namely Nnamdi Azikiwe Federal University, Awka; Anambra State University, Uli; University of Nigeria, Nsukka; and Enugu State University of Science and Technology. The population for the study comprised 883 Faculty of Education lecturers in the four public universities that were surveyed. A total of 221 respondents made up of 116 male and 105 female lecturers were drawn through simple random sampling technique. A researcher-developed structured model questionnaire was used as data collection instrument. The questionnaire contained 33 items on a four-point response scale of Great Extent (GE)/Strongly Agree (SA), Moderate Extent (ME)/Agree (A), Low Extent (LE)/Disagree (D), and Not at All (NA)/Strongly Disagree (SD), weighing 4, 3, 2, 1, respectively. The questionnaire was face-validated by three experts from computer science and computer education departments in the University of Nigeria, Nsukka. The instrument was trial-tested using 25 lecturers in the Faculty of Education, Delta State University, which is located outside the target sample, in the South-South zone of Nigeria. The internal consistency of the instrument was determined using the Cronbach Alpha formula, which yielded alpha values of 0.89, 0.87, 0.93, 0.91 respectively for the four clusters in the instrument while 0.90 reliability coefficient was generated for the overall clusters, which is considered high enough. The instrument was administered to respondents with the help of three research assistants. The assistants were briefed on the content of the questionnaire and best approaches required to effectively distribute and retrieve the instrument from the respondents in the various institutions under study. Direct approach by hand was employed in order to ensure maximum return of the questionnaires. Out of the 221 questionnaire distributed, 218 (98%) was successfully returned. The data collected from the respondents were analyzed using mean scores while the null hypotheses formulated for the study were tested using t-test, at 0.05 level of significance.

## Results

**Research Question One:** To what extent do faculty lecturers utilize multimedia hardware in their instruction delivery?

**Table 1: Mean Responses of Respondents on the Utilization of Multimedia Hardware for Instruction Delivery**

| S/N | Item | $\bar{X}$ | Sd. | Remark |
|---|---|---|---|---|
| 1 | Laptop/Desktop Computer | 2.96 | 0.10 | ME |
| 2 | IPAD | 1.68 | 0.86 | LE |
| 3 | Multimedia Projector | 2.32 | 1.01 | LE |
| 4 | Interactive Whiteboard (Smartboard/Starboard) | 2.14 | 0.98 | LE |
| 5 | Multimedia Instructional CD/DVDs | 2.52 | 1.01 | ME |
| 6 | Internet Facilities (Modem, LAN, Wireless) | 2.72 | 1.01 | ME |
| | **Cluster Total** | **2.39** | **0.76** | **LE** |

*Key: ME = Moderate Extent, LE = Low Extent; $\bar{X}$ = Mean; Sd. = Standard Deviation*

From Table 1 above, items 1, 5, and 6 obtained mean scores ranging from 2.52 to 2.96. This shows that laptop/desktop computer, multimedia instructional CD/DVDs, and internet facilities were moderately utilized by the respondents in instruction delivery while the other items (2, 3, 4) were utilized to a low extent. This finding therefore indicates that faculty lecturers utilize multimedia hardware to a low extent in instruction delivery, as indicated in the cluster total with the mean score of 2.39.

**Research Question Two:** To what extent do faculty lecturers utilize multimedia software/elements in their instruction delivery?

**Table 2: Mean Responses of Respondents on the Utilization of Multimedia Software/Elements in Instruction Delivery**

| S/N | Item | $\bar{X}$ | Sd. | Remark |
|---|---|---|---|---|
| 1 | Video (or YouTube) | 2.24 | 1.02 | LE |
| 2 | Audio (or Podcast) | 1.95 | 0.92 | LE |
| 3 | Pictures/Graphics | 2.43 | 1.03 | LE |
| 4 | Animation/Simulation | 2.06 | 0.94 | LE |
| 5 | Presentation Software (PowerPoint) | 2.75 | 1.02 | ME |
| 6 | E-Learning Platform (Blackboard, Moodle, WebCT, etc.) | 1.75 | 0.88 | LE |
| | **Cluster Total** | **2.10** | **0.70** | **LE** |

*Key: ME = Moderate Extent, LE = Low Extent; $\bar{X}$ = Mean; Sd. = Standard Deviation*

From Table 2 above, only item 5 (Presentation software - PowerPoint) was utilized to a moderate extent by faculty lecturers in instruction delivery, with mean score of 2.75. The other items had mean scores ranging from 1.57 to 2.43, indicating low utilization. The cluster mean score of 2.10 shows that overall, faculty lecturers utilize multimedia software/elements to a low extent in instruction delivery.

**Research Question Three:** What are the perceived challenges to effective use of multimedia technologies in instruction delivery in the faculty of education?

**Table 3: Mean Responses of Respondents on the challenges to Effective use of Multimedia Technologies in Instruction Delivery.**

| S/N | Item | $\bar{X}$ | Sd. | Remark |
|---|---|---|---|---|
| 1 | Low availability of multimedia facilities in my department | 3.40 | 0.84 | A |
| 2 | Some of the ICT facilities in the Departmental laboratory are not functional | 3.35 | 0.74 | A |
| 3 | Development of multimedia-based presentations consumes a lot of time | 2.91 | 0.92 | A |
| 4 | Most faculty lecturers lack multimedia presentation design skills | 3.52 | 0.68 | SA |
| 5 | There is shortage of electricity supply in the campus | 3.16 | 0.71 | A |
| 6 | The school internet services are very poor and often not connecting | 3.80 | 0.70 | SA |
| 7 | Lack of technical personnel for the maintenance of the available multimedia facilities | 2.85 | 0.94 | A |
| 8 | Departments receive little or no funds to purchase and maintain multimedia equipment | 3.30 | 0.54 | A |
| 9 | Multimedia design apps are costly to purchase | 2.65 | 0.91 | A |
| 10 | Limited space/lab for practical skills training | 3.50 | 0.73 | SA |
| 11 | Lack of regular training of lecturers on multimedia design and use in instruction delivery | 3.55 | 0.64 | SA |
| 12 | Heavy workload on staff affects the use of multimedia in the classroom | 3.52 | 0.69 | SA |
| 13 | Most faculty staff feel reluctant in adopting multimedia because they are afraid of exposing their poor ICT skills before their students | 2.89 | 0.89 | A |
| 14 | It is time-consuming to teach with multimedia | 2.28 | 0.99 | D |

*Key: SA = Strongly Agree; A = Agree; D = Disagree;* $\bar{X}$ *= Mean; Sd. = Standard Deviation*

The data presentation in Table 3 revealed that all the items except item 14 are the perceived challenges affecting the effective use of multimedia technologies in instruction delivery. The data analysis further revealed that items 4, 6, 10, 11, and 12 have mean scores ranging from 3.50 to 3.80 which were between the boundary limit of 3.50-4.00 on 4-point rating scale. This means that the items were rated "Strongly Agree – SA" by the respondents. Furthermore, items 1, 2, 3, 5, 7, 8, 9, and 13 have mean scores ranging from 2.65 to 3.40 which are between the boundary limit of 2.50-3.49 on a 4-point rating scale. This means that the items were rated "Agree – A". On the other hand, item 14 has a mean score of 2.28 indicating that the respondents disagree with the item statement. The table also showed that the standard deviations range from 0.54 to 0.99 which are less than 1.96, indicating that the respondents' opinions were not far from one another.

**Research Question Four:** What are the perceived strategies for effective utilization of multimedia technologies by faculty of education lecturers in instruction delivery?

**Table 4**
**Mean Responses of Respondents on the Strategies for Effective Utilization of Multimedia Technologies in Instruction Delivery.**

| S/N | Item | $\overline{X}$ | Sd. | Remark |
|---|---|---|---|---|
| 1 | Regular training/retraining of faculty lecturers on innovative ways of teaching with multimedia | 3.53 | 0.74 | SA |
| 2 | Adequate provision of electricity | 3.50 | 0.73 | SA |
| 3 | Adequate funds for the purchase and upkeep of multimedia facilities | 3.46 | 0.76 | A |
| 4 | Deployment of ICT/Technical staff for regular maintenance of multimedia equipment | 3.32 | 0.75 | A |
| 5 | Provision of quality and uninterrupted internet services for use by the university staff | 3.76 | 0.71 | SA |
| 6 | Collaboration among staff within and outside the school for sharing of multimedia materials and ideas | 3.40 | 0.84 | A |
| 7 | Organizing regular mentoring sessions for both old and new staff on ICT utilization in the classroom | 3.74 | 0.44 | SA |

*Key: SA = Strongly Agree; A = Agree; $\overline{X}$ = Mean; Sd. = Standard Deviation*

The data presentation in Table 4 revealed that the respondents agree with all the items as the perceived strategies for effective use of multimedia technologies in instruction delivery. The data analysis further revealed that items 1, 2, 5, and 7 were rated "Strongly Agree – SA" since their means scores ranged from 3.50 to 3.76 which were between the boundary limit of 3.50-4.00 on 4-point rating scale. Furthermore, items 3, 4, and 6 have mean scores ranging between 3.32 and 3.46 which are between the boundary limit of 2.50-3.49 on a 4-point rating scale, indicating that the items were rated "Agree – A". The table also showed that the standard deviations range from 0.44 to 0.84 which are less than 1.96, indicating that the respondents' opinions were not far from one another.

**Hypothesis 1**

$HO_1$: There is no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia hardware in instruction delivery.

**Table 5: The t-test on the Respondents' Mean Ratings on Utilization of Multimedia Hardware in Instruction Delivery by Gender**

| Gender | N | $\overline{X}$ | SD | t | α | DF | Sig. (2-Tailed) | Remark |
|---|---|---|---|---|---|---|---|---|
| Male | 115 | 2.40 | 0.79 | 0.16 | 0.05 | 219 | 0.88 | Not Rejected |
| Female | 105 | 2.38 | 0.73 | | | | | |

The data presented in Table 5 revealed that the significant value (0.88) is greater than the 0.05 level of significance indicating that there was no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia hardware in instruction delivery. Therefore, the null hypothesis of no significant difference was not rejected.

**Hypothesis 2**

$HO_2$: There is no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia software/elements in instruction delivery.

**Table 6: The t-test on the Respondents' Mean Ratings on Utilization of Multimedia Software/Elements in Instruction Delivery by Gender**

| Gender | N | $\overline{X}$ | SD | t | α | DF | Sig. (2-Tailed) | Remark |
|---|---|---|---|---|---|---|---|---|
| Male | 115 | 2.11 | 0.68 | 0.15 | 0.05 | 219 | 0.88 | Not Rejected |
| Female | 105 | 2.09 | 0.74 | | | | | |

The data presented in Table 6 also revealed that the significant value (0.88) is greater than the 0.05 level of significance indicating that there was no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia software/elements in instruction delivery. Therefore, the null hypothesis of no significant difference was not rejected.

**Discussion**

The findings of the study revealed that faculty lecturers utilize multimedia hardware and software/elements to a low extent in instruction delivery. Although few of the multimedia resources such as laptop/desktop computer, multimedia instructional CD/DVDs, internet facilities and presentation software (PowerPoint) were moderately utilized, the cluster mean scores (2.39 and 2.10) obtained in Tables 1 and 2 respectively indicate that generally, the utilization of multimedia technologies by faculty lecturers in instruction delivery was low. This is in agreement with the findings of Nweke (2013) whose study revealed low extent to the utilization of ICT facilities by OTM Polytechnic lecturers in teaching and learning. The study by Iweh and Ufot

(2012) as reported by Nweke (2013), revealed that teachers do not use projectors, electronic media such as slides, videoconferencing during their lecture.

Furthermore, Table 3 revealed that the low/non-utilization of multimedia technologies by faculty lecturers in instruction delivery was attributed to some perceived factors such as low availability of multimedia facilities in my department; non-functional facilities; time-factor; poor design and presentation skills; poor electricity supply; poor internet services; lack of technical personnel; poor funding; cost of multimedia apps; irregular staff training; among others. These findings are in line with Nwangwu (2015) who found that inadequate/non-functional laboratory facilities, shortage of instructional resources, poor time management issues, are factors that are responsible for poor performance of students in programming courses in Nigerian higher institutions. According to Boardbar (2010), teachers' computer competence is a major predictor of integrating ICT/multimedia technologies in teaching. In previous studies, Bauer and Kenton (2005); Franklin (2007); Wozney, Venkatesh, and Abrami, (2006) stated that teachers' professional development is a key factor to successful integration of computers into classroom teaching. On the other hand, the respondents disagree with the item that states that it is time-consuming to teach with multimedia. This supports the findings of Azyan, Norlis, Ratna and Jamaliah (2018) that the use of teaching tool has eased the process of teaching and learning by reducing the delivery hours. On the contrary, Bent and Katja (2013) states that using multimedia can be time consuming. However, Bent and Katja (2013) concur with the present study that the production of multimedia takes much time. Findings on Table 3 also revealed that poor internet services had the highest mean score of 3.80. This means that poor internet services drastically affect the quality of instruction delivery offered in the universities surveyed. According to Bent and Katja (2013), limited bandwidth means slow performance for sound, graphics and video, interrupting streaming and causing long waits for download that can affect the ease of learning.

The findings in Table 4 revealed the perceived strategies for effective use of multimedia technologies in instruction delivery. These strategies include among others regular training of faculty lecturers on innovative ways of teaching with multimedia, adequate provision of electricity, adequate funds for the purchase and upkeep of multimedia facilities, deployment of ICT/Technical staff for regular maintenance of multimedia equipment, provision of quality and uninterrupted internet services to staff. These findings are in agreement with Eneovo (2018) that adequate funding, provision of adequate facilities, organizing retraining exercises for educators, and provision of alternative source of power are among the strategies required to ameliorate the challenges to utilization of ICT in teaching and learning. The findings in Table 4 also corroborates with previous findings by Ulifun cited in Okoli and Okorie (2015); and Hennessy, Harrison and Wamakote (2010) who found availability, maintenance and adequacy of teaching facilities as sine qua non for the attainment of educational goals.

The two null hypotheses formulated and tested in this study at 0.05 level of significance showed no statistical differences by gender. This is in line with the study of Nweke (2013) who observed in his study that there was no significant difference in the mean ratings of male and female polytechnic lecturers on the extent of their computer facilities utilization. Some studies revealed that gender variable was not a predictor of ICT/multimedia integration into teaching (Norris, Sullivan, Poirot and Solway, 2003 cited in Ali, Haolader and Muhammad, 2013).

## Implications for Learning

The findings of this study have great implications to teaching and learning in a globalized world by providing opportunities for faculty lecturers to adopt multimedia approach for effective instruction delivery. The use of multimedia in classroom instructions promotes active engagement of students during instructional activities; ensures adequate skill acquisition, increases the rate of mastery and retention of learned contents as well as makes the teachers' instruction delivery effective and efficient.

## Conclusion

The study was carried out to determine the extent to which faculty lecturers utilize multimedia technologies in instruction delivery in the universities in Anambra and Enugu states, Nigeria. The findings revealed that the extent to which multimedia technologies were utilized by faculty lecturers in instruction delivery was low. The reasons for this development were attributed to poor funding, poor design skills, lack/limited access to the internet, inadequate multimedia facilities, epileptic electricity supply, irregular training and retraining of faculty lecturers on multimedia design and presentation, among other factors. On the way forward, faculty lecturers expressed that staff raining/retraining exercises should be conducted on a regular basis; the internet services provided for use by faculty lecturers should be improved; there is need for collaboration among staff for sharing of multimedia resources and ideas; conducting regular mentoring sessions for both old and new staff on effective ways of utilizing ICTs in instruction delivery among others. The null hypotheses formulated and tested in the present study at 0.05 level of significance, revealed that there was no significant difference in the mean ratings of male and female faculty lecturers on the utilization of multimedia hardware and software in instruction delivery.

## Recommendation

Based on the findings of the study, it is recommended that:

1. School administration should organize regular training/retraining workshops and seminars on multimedia design and presentation. This is necessary because the field of technology advances very quickly and therefore demands quick intervention so that faculty lecturers will continue to be relevant and up-to-date with the current trends on the use of ICT in the classroom.
2. Technical support should be provided to faculty and departments in order to ensure optimal functionality of the multimedia equipment for instruction delivery.
3. Teaching and learning infrastructures should frequently be upgraded and maintained to align with the current world best standards and practices.
4. ICT policies need to be put in place to complement and support curricula at all levels of education system in Nigeria.
5. Adequate funds should be provided to the departments under the faculty of education for the acquisition and upkeep of multimedia facilities
6. Adequate staff welfare should be enforced so as to encourage lecturers to work hard towards actualizing the purpose of implementing multimedia in instruction delivery. When lecturers are happy and work in a conducive atmosphere, they will be ready to take their academic responsibilities to the next level.

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