AVAILABILITY AND UTILIZATION OF AUDIO-VISUALS FOR TEACHING AND LEARNING IN NIGERIAN UNIVERSITIES: A CASE STUDY

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AVAILABILITY AND UTILIZATION OF AUDIO-VISUALS FOR TEACHING AND LEARNING IN NIGERIAN UNIVERSITIES: A CASE STUDY

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Abstract

Purpose: *The study investigated the availability and utilization of audio-visual (AV) resources for teaching and learning in Nigerian universities, with a focus on the Faculty of Social Sciences, Bingham University, Nasarawa State.*

Design/Methodology/Approach:*It was guided by five (5) specific objectives. The descriptive survey research design was adopted using a sample of 195respondents drawn from a population of 487 students. This population representsthe total number of undergraduates in the Faculty in levels 200, 300, and 400. Two instruments were used for data collection, viz; an observation checklist and a 39-item questionnaire was used.195 copies of the questionnaire were distributed but 187 were returned giving a response rate of 95.9%. Data collected were analysed using mean scores, standard deviation, frequency counts and simple percentages.*

Findings:*The finding shows the availability and utilization of a good number of AV resources, which include: interactive whiteboards, computers, and maps/charts, among others. The utilization of these AV resources was found to have effects in the areas of making learning easy, reducing the cost of acquiring learning materials, increasing the academic performance of the students, etc. Furthermore, the study discovered numerous challenges facing the utilization of AV resources for teaching and learning with their solutions, revealed.*

Implications:*University management should support and further increase the training and re-training programmes given to staff and students on the use of modern teaching and learning technologies. Internet connectivity should be provided at a subsidized rate to the students. Furthermore, there is a need for an upgrade in Internet bandwidth. Staff should be encouraged and allowed to engage in capacity development programmes to enable them to acquire required ICT skills, which is a vital tool for the utilization of audio-visual resources in teaching and learning.*

Originality/Value: *Based on the findings, it was recommended, among other things, the need for authorities of Nigerian universities to invest more in the deployment of AV resources for teaching and learning as they will go a long way in creating a good learning environment, and making teaching and learning more easy and interesting.*

Keywords: Teaching, Learning, Universities, Audio-visuals, Availability, Utilization

Paper Type: Empirical paper

Introduction

Teaching and learning remain an integral part of societal and national development. However, the instruments or apparatus deployed and the output of this educational process in Nigerian tertiary institutions remain a matter of concern.

In Nigeria, the educational system is structured into nursery, primary, secondary and tertiary education. Tertiary education, where the university falls under, provides formal education for individuals who have completed secondary education or other smaller degrees.

There, we have undergraduates and postgraduates. According to Onuoha and Chukwueke (2020), the Nigerian school system has continued to experience a series of transformations as a result of the introduction of information and communication technologies (ICTs) in the teaching and learning processes, as well as the constant increase in the number of pupils and students, enrolled into the system. The authors further maintained that the duo is now making it difficult for effective teaching and learning to take place without appropriate tools and mechanisms. Among these tools, are audio-visuals or AV resources.According to Anzaku (2011), the term audio-visuals is commonly used to refer to those instructional materials that may be used to convey meaning without complete dependence upon verbal symbols or language.

They serve as aids for training or educational materials directed at both the senses of hearing and sight, used in classroom instructions, library collections or the like, examples may include computers (or a computer lab), films, slides, transparencies, projectors, photographs, maps, posters, charts, audio/video CDs, tape recorder/player, video cassette recorder (VCR) & video cassette player (VCP), Xerox machine among others. Some audio-visual components are like process and experience, for example, dramatizing an event or a procedure or making a diorama (Ashaver & Igyuve, 2013). It is also clear that while some AV resources like motion pictures, require the use of equipment to release their latent value, others do not need equipment at all like an exhibit or a study print. To this end, this designates in common usage both material things as well as processes such as field trips. Anzaku (2011) further states that audio-visual materials include materials and equipment alike, that materials are considered to be a system, or body of content of potential value when put to work, while equipment or instructions, often referred to as hardware components are the means of presenting such content.

Today, one sees these audio-visual resources playing a major role in making teaching and learning permanent. Gopal (2010) stressed that "audio-visual methods do seem to facilitate the acquisition, the retention and the recall of lessons learned, because, they seem to evoke the maximum response of the whole organism to the situations in which learning is done. Natoli (2011) stressed that audio-visual materials are important in the teaching and learning processes because "having seen something, most people remember, for whatever that thing was, it raises an image at a mere mention and can be talked about freely. Additionally, the world is becoming more digitalized, thereby trying to eradicate the manual method of teaching and learning using the chalkboard (Onuoha & Chukwueke, 2020). Corroborating the assertion, Adamu, Ibrahim, Adamu and Ibrahim (2018) observed that with audio-visuals, the communication of information can be done in a more effectively it can be an effective instructional medium for delivering information. Consequently, AV resources facilitate access to all human knowledge, anytime, and anywhere in a friendly, multi-modal, efficient and effective way by overcoming barriers of distance, language and culture, and by using multiple Internet-connect devices.

It is important to say that the use of audio-visual technology has great significance in colleges, universities and research institutions in the western countries. However, preliminary observations have shown that despite the importance attached to AV resources in the teaching and learning process, most universities in Nigeria do not have either adequate or contemporary AV resources or seem not to be adopting the technology at all. This can be assumed to be caused by poor funding of university education in Nigeria as most of these aids are very expensive. On the other hand, there are speculations that some lecturers in Nigerian universities lack the requisite skills to handle some of these contemporary AV resources for their teaching and learning processes. This is also not different from the assertion that some university students are not ICT-inclined and exhibit technological phobia. Hence, from the speculations, both the lecturers and students find

it difficult to effectively deploy these AV resources in the teaching and learning process in their universities. However, except empirically proven, speculations or assumptions cannot be used to explain the state of availability and utilization of AV resources for teaching and learning in Nigerian universities, hence the reason for the present study which seeks to examine the availability and utilization of audio-visuals for teaching and learning in Nigerian universities, with focus on the Faculty of Social Sciences, Bingham University, Nasarawa State, Nigeria.

Purpose of the Study

The main purpose of this study is to examine the availability and utilization of audio-visuals for teaching and learning in Nigerian universities. Specifically, it examined the:

1. audio-visuals available for teaching and learning at Bingham University;

2. audio-visuals utilized for teaching and learning at Bingham University;

3. perceived effects of utilization of AV resources for teaching and learning;

4. challenges facing utilization of audio-visuals for teaching and learning atBingham University; and

5. solutions to the challenges facing the utilization of audio-visuals for teaching and learning at Bingham University.

Literature Review

Availability and utilization of audio-visuals simply mean the presentation of knowledge to be gained through the seeing experience (Garba, 2020). It represents the method of imparting information which is based upon the psychological principle that one has a better conception of the thing he sees than of the thing he reads about or hears or discusses while serving as a supplementary device for making learning objective real and effective (Roberta, as cited in Garba, 2020). Consequently, the availability and utilization of audio-visual aids in teaching havebeen promulgated in several studies (Jarosievitz, 2011; Zheng, Warschauer, Lin, & Chang, 2016; De Sousa, Richter, &Nel, 2017) as

useful tools to convey complicated concepts and ideas, interestingly and interactively. In this stand, Shah and Khan (2015) highlight that animation and information presented onscreen provide a different learning experience from printed text which was beneficial to the development of critical thinking. Gilakjani (2012) also resonated with the use of effective learning materials including audio-visual aids in enhancing teaching and learning, and visual presentation helped differentiate primary and secondary information sources in approaching questions requiring higher thinking skills.

Additionally, Garba (2020) examined the effect of audio-visual aids in the teaching and learning of mathematics in selected secondary schools in Makurdi Metropolis, Benue State, Nigeria and concluded that today's technology offers many choices to the informed educator who wishes to capitalize on a new generation's appetite for multimedia presentations and as such, the availability and utilization of AV resources in the classroom have been shown to enhance teaching methods and improve student comprehension. However, regardless of the nature of audio-visual resources, Umar (2014) reveal that their role in education is to achieve the objectives of enhancing teachers' skill which help to make the teaching and learning process effective; making learners active in the classroom; making pupils/students good observers; developing essay and understandable learning material, among other things. In addition to Umar (2014)'s objectives, Ciaseali and Marchis (as cited in Doosuur & Igyuve, 2013) are of the view that AV resources individualize learning through the use of digital media; motivate and facilitate learning through the use of symbols and spatial representation which are attractive in nature; deepens learning, through different ways of illustration; develop cross skills and competencies through efficient communication; develop attitudes through intellectual curiosity; and responsibility; and as well, give a background for a global perspective on the world.

According to Ojobor, Babarinde and Fagbemi (2020), the usefulness of audio-visual resources in

the teaching and learning process cannot be over-emphasized as both teachers and students benefit from their worth. Idris (2015) notes that in teaching and learning, instructional materials have been a triumphant entry, bringing benefits to both teachers and students while observing that effective use of AV resources strengthens the teacher's verbalism and enriches his knowledge of the subject matter. Oketunji (2000) opines that audio-visual materials when effectively used lessen major weaknesses of verbalism, humanize and vitalize subject matter, proved interesting approach to new topics and give initial correct impressions, economic time in learning, supply concrete materials needed, stimulate the initiative of the pupils. Commenting on the importance of the audio-visual resource to the learners, Ismail, Othman, Amiruddin, and Ariffin (2017) maintain that students can study well when they are inspired properly through different visual aids. Moreover, visual aids grow the accurate image when students see and hear properly; they provide a complete example for conceptual thinking; create an environment of interest for the students; help to increase their vocabulary and make learning permanent and also extend their imagination beyond the classroom setting etc. It is, therefore, worthy of note that getting hold of the potential of audio-visuals enhances effectiveness in the teaching and learning process. On the other hand, efficient and effective teaching and learning processes promote skill acquisition and retention among learners thereby improving the overall academic performance of the learners which in turn prepare them for a brighter future (Ojobor, Babarinde&Fagbemi, 2020). This could be anchored on Swank's (2011) estimation that about 40% of our concepts are based on visual experience, 25% on auditory, 17% on tactile, 15% on miscellaneous organic sensation and 3% on taste smell. With the above assertion, it becomes clearer why audio-visual materials are important in the teaching and learning processes.

Regrettably, it is absurd that despite the ability of audio-visuals to achieve the basic elements in the teaching and learning processes, some schools still do not put the resources to use. Acharu and Solomon (2014), Kaswa (2015), Ojobor, Babarinde and Fagbemi (2020) observe that insufficient funding, lack of competent teachers, lack of awareness; erratic power supply, lack of space, and non-availability of instructional materials in schools are some of the contributing factors to non-use of audio-visual resources in teaching and learning. Other challenges according to Adakole, Eiriemiokhale and Nnaji (2016) are capital intensive, poor or lack of maintenance, andan increase in students' enrolment and student attitudes to educational facilities. Notwithstanding, Adakole, Eiriemiokhale and Nnaji's (2016) investigations show that despite the roles of audio-visual resources in teaching and learning, the resources are always provided and utilized at a very low level in most schools in the country, which eventually affects the standard of teaching and learning. Corroboratively, Ojobor, Babarinde and Fagbemi (2020) assert that due to the poor state of availability and utilization of audio-visual resources in most Nigerian educational institutions, teaching is still based on a teacher-centred method. According to Gibson (as cited in Ojobor, Babarinde &Fagbemi, 2020) such a teaching method is abstractive in nature. Gibson further explains that an abstract nature of teaching does not relate the learner to the real world; it neither helps them to think about the realistic situation nor encouraged them to generate and pose their solution. For this reason, most students become unmotivated and unconnected thereby developing a negative attitude toward learning which consequently affects their academic performance

No doubt, teaching and learning at all levels of Nigerian schools are becoming more theoretical and ineffective in most schools because the equipment/materials required to make the process realistic and effective are not available or insufficient (Ojobor, Babarinde&Fagbemi, 2020). Non-use of audio-visual resources in a classroom setting abridges students' rate of understanding which is geared towards poor skill acquisition and retention among learners. As well, it lowers the academic performance of the students and

reduces their enthusiasm for a higher level of education. This assertion coincides with Acharu and Solomon (2014) that inadequate infrastructural facilities and the continuous breakdown and deterioration of the existing facilities for teaching affect students' achievement and academic performance. On the other side, teaching and learning at the university level may hardly be effective without the availability of instructional facilities. This implies that effective teaching and learning is *sine qua non* to the availability of instructional materials needed for the smooth implementation of the school curriculum (Adakole, Eiriemiokhale, &Nnaji, 2016). Other consequences of inadequate use of audio-visual as pointed out by Okorie (as cited in Onuoha&Chukwueke, 2020) are a drastic decrease in practical knowledge and performance of students, a high rate of unemployment and an increase in the rate of societal ill.

Gabi (as cited in Haque & Talukder, 2017) believed that the requirement needed by the teacher to make effective teaching is resourcefulness. To this end, Aina and Adekanye (2013) are of the view that the way to do this is for the teacher to engage in a human capacity building which will involve the use of a variety of strategies and techniques in his/her teaching. Furthermore, audio-visual aids are not new to teaching and learning while seeing the need to adopt them in the delivery of lectures in universities for enhanced visualization of students, hence ensuring the quality of learning. Haque and Talukder (2017) suggested the use of PowerPoint slides presentation over the overhead projector and the importance of good quality audio-visual aids for effective learning. Some of the important strategies for the effective utilization of audio-visual materials in educational institutions as suggested by Popoola (2003); Abankwah (2011); Adeoye and Popoola (2011); Ramesh and Maranna (2016) include the provision of adequate funding of educational institutions**,** ensuring regular maintenance culture to make sure these resources are in good condition, provision of training for both the teachers and the students on the use of these

audio-visuals for teaching and learning, provision of constant power supply, provision of Internet connectivity, and provision of adequate current audio-visual by the authorities of these educational institutions and the government.

From previous studies conducted and the opinions of different authors in the literature, reviewed, one can, without doubt, believe that audio-visuals remain important tools for effective teaching and learning in Nigerian universities. Notwithstanding, there is still a lacuna on the availability and utilization of these resources in teaching and learning atBingham University, Nasarawa State, Nigeria, considering the nature of availability and utilization, the perceived effects, challenges and the solutions to the challenges facing the utilization of AV resources for teaching in this University. Based on this gap in the literature, the study was necessitated.

Methodology

This study adopted the descriptive survey research design with a focus on undergraduates of the Faculty of Social Sciences, Bingham University, Nasarawa State in levels 200, 300, and 400. This gave a total population of 487. 100 level was excluded as a result of their less knowledge of the teaching and learning processes of the University.Furthermore, the choice of the Faculty of Social Sciences is based on the need for diversification in research and understanding the attitude of other categories of students towards the availability and utilization of audio-visuals in teaching and learning. Consequently, the stratified-simple random sampling technique was adopted in selecting 195 students representing 40% of the study population. Two instruments were used for data collection, viz; an observation checklist to ascertain the AV resources available, and a 39-item questionnaire titled "Utilization of Audio-Visuals for Teaching and Learning in Nigerian Universities Questionnaire (AUAVsTLNU)". The researchers personally observed the AV resources available and recorded same on the checklist while 195 copies of the questionnaire were distributed to the respondents but 187 were returned and found

suitable for data analysis, thereby, giving a response rate of 95.9%. Additionally, data collected were analysed using descriptive and inferential statistical techniques of mean scores, standard deviation, frequency counts and simple percentages. Meanwhile, a criterion mean valueof 2.50 was used in determining the respondents' agreement or disagreement with the questionnaire items. This implies that any item with a mean value,equal to or greater than the criterion mean (2.50) was considered as 'agreed'while the mean response below the criterion meanwas considered as'disagreed'. Furthermore, the qualitative approach was adopted in analyzing data generated on the AV resources available in the institution studied through the use of the observation checklist.

Presentation of Result and Discussion of Findings

Table 1: Availability of Audio-Visuals for Teaching and Learning

	AV resources	Available	Not Available
1	Slide/film projectors	√	-
2	Computers	√	-
3	Transparencies (diorama)	-	√
4	Internet (audio and video) lessons	√	-
5	Android mobile devices/phone tablets	√	-
6	Compact discs	√	-
7	Television sets	√	-
8	Digital video discs (DVDs)	√	-
9	Tape players	√	-
10	Videocassette recorders	√	-
11	Videocassette players	√	-
12	Photographs	√	-
13	Pictures/Posters	√	-
14	Maps/charts	√	-
15	Films	√	-
16	Interactive whiteboards	√	-
17	Xerox machines	-	√
18	Audio/video cassettes	√	-
19	Zoom App	√	-
20	Google Meet App	√	-
		18(90%)	2(10%)

The result presented in Table 1 shows the outcome of the observation on AV resources available at Bingham University, Nasarawa State for teaching and learning in the Faculty of Social Sciences. 20 AV resources were investigated but 18 representing 90% were found available while only 2, representing 10% were found not available. The AV resources available include slides/film projectors, computers, Internet (audio and video) lessons, android mobile devices/phone tablets, compact discs, television sets, DVDs, tape players, and videocassette recorders. Other AV resources found available are videocassette players, photographs, maps/charts, films, interactive whiteboards, audio/video cassettes, Zoom App, and Google Meet App. However, transparencies (diorama), and Xerox machines were not available for teaching and learning in the Faculty of Social Sciences of the University studied.

Considering the result, the study found the availability of a large percentage (90%) of AV resources for teaching and learning at Bingham University, Nasarawa State. This further disagrees with the submissions and findings of Adakole, Eiriemiokhale and Nnaji (2016); Onuoha and Chukwueke (2020) which showed that despite the roles of audio-visual resources in teaching and learning, the resources are always provided at a very low level in most schools in the country, with emphasis on the schools they studied. The disagreement with findings could be based on the

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time the previous studies were conducted (that is, 2016 and 2020) and the present dispensation. To this end, one can conclude that Nigerian school students have witnessed a transformation in the adoption of modern technologies for teaching and learning, especially at the tertiary levels.

Table 2: Audio-Visuals Utilized for Teaching and Learning

S/n	Audio-Visuals	Utilized	Not Utilized	Mean	St. Dev.	Decision
21	Maps/charts	182	5	2.95	0.32	Utilized
22	Zoom App	182	5	2.95	0.32	Utilized
23	Google Meet App	182	5	2.95	0.32	Utilized
24	Computers	177	10	2.89	0.45	Utilized
25	Interactive whiteboards	173	14	2.85	0.53	Utilized
26	Films	172	15	2.84	0.55	Utilized
27	Audio/video cassettes	172	15	2.84	0.55	Utilized
28	Photographs	169	18	2.81	0.59	Utilized
29	Android mobile devices/phone tablets	167	20	2.79	0.62	Utilized
30	Slide/film projector	164	23	2.75	0.66	Utilized
31	Videocassette recorders	162	25	2.73	0.68	Utilized
32	Tape recorder/players	161	26	2.72	0.69	Utilized
33	Videocassette player	160	27	2.71	0.71	Utilized
34	Pictures/Posters	160	27	2.71	0.71	Utilized
35	Internet (audio and video) lessons	149	38	2.59	0.81	Utilized
36	Digital video discs (DVDs)	98	89	2.05	1.00	Not utilized
37	Compact discs	14	173	1.15	0.53	Not utilized
38	Television sets	14	173	1.15	0.53	Not utilized
	Cluster Average			2.58	0.59	Utilized

Table 2 presents data generated on the AV resources utilized in teaching and learning processes in the University studied. 18 AV resources which were found available were investigated out of which the majority of the respondents rated the utilization of 15 AV resources with mean scores and standard deviation ranging from 2.71 – 2.95 and 0.32 – 0.81, respectively. Although items 36, 37, and 38 were found available, the majority of the respondents rated their non-utilization as the obtained mean scores below the criterion mean of 2.50 set for the study. This further agrees with the wide opinion that availability may not necessarily infer utilization. However, considering the cluster average mean and standard deviation of 2.58 and 0.59, the study proves the utilization of AV resources in Bingham University, Nasarawa State for teaching and learning. It is a clear indication that not only that AV resources are provided in the University, but also they are also being put to full use.

Earlier in their studies, Acharu and Solomon (2014); Kaswa (2015), Adakole, Eiriemiokhale and Nnaji (2016); Onuoha and Chukwueke (2020); Ojobor, Babarinde and Fagbemi (2020) submitted the low utilization of AV resources in teaching and learning in most schools in the country owing to several challenges faced by these schools, the present study using the Bingham University, Nasarawa State has proven the low utilization very incorrect. Although some of the challenges raised may be prevalent in the school studied, it could be that Bingham University, Nasarawa Stateis doing their best in managing these circumstances which have made them put into use, the AV resources. As well, the circumstance and effect of COVID-19 of 2020 could also be another reason for more utilization of AV resources in the University studied, as it might have been part of their strategy towards coping with the pandemic.

Table 3: Perceived Effects of Utilization of Audio-Visuals for Teaching and Learning

S/n	Item Statements	SA	A	D	SD	Mean	St. Dev.	Decision
39	It makes teaching and learning very easy	47	119	21	-	3.14	0.59	Agreed
40	It reduces the cost of acquiring learning materials	76	56	28	27	2.97	1.07	Agreed
41	It makes for efficiency in teaching and learning	76	42	37	32	2.87	1.13	Agreed
42	One can learn anywhere using AV sources	90	21	16	60	2.75	1.34	Agreed
43	It enhances the easy retrieval of learning materials	78	15	12	82	2.48	1.40	Disagreed
44	Teaching and learning with audio-visuals gives me more understanding	107	7	73	-	3.18	0.97	Agreed
45	It increases my academic performance	118	7	38	24	3.17	1.15	Agreed

Data presented in Table 3 shows the respondents' views on the perceived effects of the utilization of AV resources for teaching and learning in their University. The result shows that the majority of the respondents agreed that the effects could be seen in the fact that it makes teaching and learning very easy 3.14(0.59), it reduces the cost of acquiring learning materials 2.97(1.07), it makes for efficiency in teaching and learning 2.87(1.13), one can learn from anywhere using AV sources 2.75(1.34), teaching and learning with audio-visuals gives me more understanding 3.18(0.97), and increases their academic performance 3.17(1.15). it was, however, disagreed by the majority of the respondents that the use of AV resources for teaching and learning enhances easy retrieval of learning materials, as it recorded a mean score of 2.48 and a standard deviation of 1.40.

Considering the result, the study proves that the utilization of AV resources has many positive effects on students. This is in agreement with the earlier findings of Tang and Intai (2017); Ojobor, Babarinde and Fagbemi (2020), among others, who noted that audio-visual resources, are capable of ensuring effective teaching which improves skill acquisition and retention among learners especially at the prime level when made available and utilized for teaching and learning, and have further led to the increase in the level of understanding of students as they were observed to be more attentive when audio-visual aids were played. In the same vein, Ojobor, Babarinde and Fagbemi (2020) found that efficient and effective teaching and learning process through the deployment of AV resources has led to the promotion of skill acquisition and retention among learners thereby improving the overall academic performance of the learners which in turns prepare them for a brighter future.

Table 4: Challenges Facing Utilization of Audio-Visuals for Teaching and Learning

S/n	Item Statements	SA	A	D	SD	Mean	St. Dev.	Decision
46	The harsh climatic condition of our environment creates a major problem in the use of AV resources for teaching and learning	91	15	43	38	2.85	1.23	Agreed
47	There is the issue of the inadequate fund to acquire standard AV resources	112	19	56	-	3.30	0.90	Agreed
48	Inadequate audio-visual materials in the school	90	21	16	60	2.75	1.34	Agreed
49	Poor maintenance culture of audio visual materials in my school	69	39	-	79	2.52	1.36	Agreed
50	Incompetence nature of students on the use of audio-visual materials	5	22	88	72	1.79	0.75	Disagreed
51	Incompetence nature of staff on the use of audio-visual materials	78	15	12	82	2.48	1.40	Disagreed
52	Poor Internet connectivity	131	9	47	-	3.45	0.87	Agreed
53	Epileptic power supply	69	39	-	79	2.52	1.36	Agreed

Table 4 presents data generated on the challenges facing the utilization of AV resources for teaching and learning at Bingham University, Nasarawa State. Eight (8) perceived challenges were investigated of which the majority of the respondents agreed to six (6) bothering on the harsh climatic condition of the environment creating a major problem in the use of AV resources for teaching and learning 2.85(1.23), an inadequate fund to acquire standard AV resources 3.30(0.90), inadequate audio-visual materials in the school 2.75(1.34), poor maintenance culture of audio visual materials in the school 2.52(1.36), poor Internet connectivity 3.45(0.87), and epileptic power supply 2.52(1.36). However, factors such as the incompetence nature of students on the use of audio-visual materials, and the incompetence nature of staff on the use of audio-visual materials were disagreed by the majority of the respondents as part of the challenges facing the utilization of AV resources for teaching and learning in the University studied as the account for mean scores of 1.76, and 2.48, respectively, which are below the criterion mean of 2.50 set for the study.

The study through the result presented found out numerous challenges facing the utilization of AV resources for teaching and learning in the University studied with the rating of poor Internet connectivity surpassing other challenges. This is in agreement with the findings and reports of Acharu and Solomon (2014); Kaswa (2015); Ojobor, Babarinde and Fagbemi (2020), Onuoha and Chukwueke (2020) which identified insufficient funding, lack of competent teachers, lack of awareness; erratic power supply, lack of space, and non-availability of instructional materials in some Nigerian schools as part of the contributing factors to non-use of audio-visual resources in the teaching and learning process. However, the study refused the incompetent nature of the student and staff as part of the challenges. In likewise manner, most of the previous studies such as Adakole, Eiriemiokhale and Nnaji (2016) revealed only capital intensive, poor or lack of maintenance, increase in students' enrolment and student attitudes to educational facilities, not indicating whether the attitude is as a result of their incompetency or technological phobia.

Table 6: Solutions to the Challenges Facing the Utilization of Audio-Visuals for Teaching and Learning

S/n	Item Statements	SA	A	D	SD	Mean	St. Dev.	Decision
54	There should be training and re-training of teachers and students on the use of AV resources for teaching and learning	81	39	67	-	3.07	0.89	Agreed
55	There should be regular maintenance of AV materials	112	19	56	-	3.30	0.90	Agreed
56	Provision of strong Internet connectivity in the school	150	5	32	-	3.63	0.76	Agreed
57	Provision of adequate audio-visual materials by the school management	118	7	62	-	3.30	0.94	Agreed
58	The school management should provide a standby generator for a constant power supply	131	9	47	-	3.45	0.87	Agreed
59	Adequate funding by the school authority, government and other stakeholders	137	8	24	18	3.41	1.04	Agreed

Table 6 captures data generated on the solutions to the challenges facing the utilization of AV resources for teaching and learning at Bingham University, Nasarawa State. The result shows that the majority of the respondents agreed with all the perceived solutions investigated as remedies to the challenges observed. They include: there should be training and re-trainingof teachers and

students on the use of AV resources for teaching and learning 3.07(0.89), regular maintenance of AV materials 3.30(0.90), provision of strong Internet connectivity in the school 3.63(0.76), provision of adequate audio-visual materials by the school management 3.30(0.94), the school management should provide a standby generator for constant power supply3.45(0.87), and

adequate funding by the school authority, government and other stakeholders 3.41(1.04).

To this end, Aina and Adekanye (2013) are of the view that the way to do this is for the teacher to engage in human capacity building which will involve the use of a variety of strategies and techniques in his/her teaching. Furthermore, Popoola (2003); Abankwah (2011); Adeoye and Popoola (2011); Ramesh and Maranna (2016) suggested the provision of adequate funding of educational institutions, ensuring regular maintenance culture to make sure these resources are in good condition, provision of training for both the teachers and the students on the use of these audio-visuals for teaching and learning, provision of constant power supply, provision of Internet connectivity, and provision of adequate current audio-visual by the authorities of these educational institutions and the government. These submissions tally with the findings of the study on the solutions to the challenges facing the utilization of AV resources for teaching and learning at Bingham University, Nasarawa State.

Summary and Recommendation

Fashioning the way for a better Nigerian educational system has generated a lot of interest from different researchers, one of which is the adoption of modern technologies in teaching and learning. The present study is among them. The study looked at the availability and utilization of audio-visual resources for teaching and learning atBingham University, Nasarawa State, Nigeria. The study found the availability of numerous audio-visual resources, which are fully utilized in the teaching and learning process. It was also discovered that the utilization of these resources makes teaching and learning very easy, reduces the cost of acquiring learning materials, makes for efficiency in teaching and learning, gives me more understanding, and increases the students' academic performance. Not minding, its perceived effects on the teaching and learning process, there exist the challenge of the harsh climatic condition of the environment creating a major problem in the use of AV resources for teaching and learning, an inadequate fund to acquire standard AV resources, inadequate audio visual materials in the school, poor maintenance culture of audio-visual materials in the school, poor Internet connectivity, and epileptic power supply. Unless these challenges are addressed, there may still be problems with the availability and utilization of AV resources at Bingham University, Nasarawa State, Nigeria. Based on this, the following recommendations were made.

1. The authorities of Nigerian universities should intensify efforts aimed at creating more awareness of the need to adopt modern technologies for teaching and learning.

2. University management should ensure the adequate provision and utilization of funds for the deployment and use of modern teaching and learning technologies. Additionally, policy should be provided to guide such deployment of AV resources for teaching and learning.

3. University management should support and further increase the training and re-training programmes given to staff and students on the use of modern teaching and learning technologies.

4. Internet connectivity should be provided at a subsidized rate to the students. Furthermore, there is a need for an upgrade in Internet bandwidth.

5. Staff should be encouraged and allowed to engage in capacity development programmes to enable them to acquire required ICT skills, which is a vital tool for the utilization of audio-visual resources in teaching and learning

Reference

Abankwah, R. M. (2011).Policies and strategies that govern the management of audio-visual materials in Eastern and Southern Africa Regional Branch of the International Council on Archives. *Journal of the South African Society of Archivists, 44* (15), 312-324. Available at: https://www.ajol.info/index.php/jsasa/article/view/77609.

Acharu, F. T. & Solomon, E. (2014). Influence of infrastructure on the teaching and learning of office education in Polytechnics. *ABEN Conference Proceedings 1* (1) 78-82

Adakole, E. Eiriemiokhale, K. A. &Nnaji, F.O. (2016).Factors affecting availability of instructional materials in teaching and learning office technology and management in polytechnics in Niger State, Nigeria.*American Journal of Research Communication, 4* (10), 19-37.

Adamu, T. I., Ibrahim, M. S., Adamu, T. A. & Ibrahim, A. (2018). Use of audio-visual materials in teaching and learning of classification of living things among secondary school students in Sabon-Gari LGA of Kaduna State. *Plant, 6* (2), 33-37. DOI: 10.11648/j.plant.20180602.12.

Adeoye, M. O. &Popoola, S. O. (2011).Use of library and information resources among teaching staff of schools of Nursing in Osun and Oyo State, Nigeria.*Library Philosophy and Practice (ejournal).* 525. http://digitalcommons.unl.edu/libphilprac/525

Aina, J. A. and Adekanye, E. A. (2013). Audio-visual resources availability and use for library services among colleges of education in Lagos State Nigeria. *International Journal of Library and Information Science.* 5 (10), 417-425.

Anzaku, F. (2011). Library experts speak on audio-visual material. A paper presented at the United Nations Educational, Scientific and Cultured Organization (UNESCO) *World Day for Audio-Visual Heritage*. Lafia.

Ashaver, D &Igyuve, S.M (2013).The use of audio-visual materials in the teaching and learning processes in Colleges of Education in Benue State-Nigeria.*Journal of Research & Method in Education (IOSR-JRME), 1* (6), 44-55.

Awasthi, D. (2014). Utilizing audio visual aids to make learning easy and effective in primary education.*International Journal of Scientific Research, 3*, 62–68. Retrieved from https://doi.org/10.15373/22778179/August2014/21.

De Sousa, L. O., Richter, B., &Nel, C. (2017). The effect of multimedia use on the teaching and learning of Social Sciences at tertiary level: A case study. *Yesterday and Today, 17*, 1–22. Retrieved from https://doi.org/10.17159/2223-0386/2017/n17a1

Doosuur, A. &Igyuve, S. M. (2013).The use of audio-visual materials in the teaching and learning processes in Colleges of Education in Benue State-Nigeria.*Journal of Research & Method in Education,1* (6), 44-55.

Garba, A. (2020). Effect of audio visuals in the teaching and learning of Mathematics in selected secondary schools in Makurdi metropolis, Benue State, Nigeria.*International Journal of Mathematical Sciences & Applications, 10* (1), 1-13

Gilakjani, A. P. (2012). The significant role of multimedia in motivating EFL learners' interest in English language learning.*International Journal of Modern Education and Computer Science, 4* (4), 57–66.

Gopal V. P. (2010*). Importance of Audio-Visual in teaching methodology*.Mahourastra, India.

Haque, M. S., &Talukder, M. H. K. (2017).Audio visual aids-quality use in lecture classes of undergraduate medical education in Bangladesh.*Medicine Today, 28* (2), 48– 51.

Idris, A.O. (2015). The effects of audio-visual materials in the teaching and learning of the speaking skill in junior secondary schools.*International Journal of Social Science and Humanities Research, 3* (3), 50-58

Ismail, M. E., Othman, H., Amiruddin, M. H., &Ariffin, A. (2017).The use of animation video in teaching to enhance the imagination and visualization of student in engineering drawing.*IOP Conference Series: Materials Science and Engineering, 203* (2), 12–23.

Jarosievitz, B. (2011). ICT, Multimedia used in the national and international educational projects. *Informatika, 38*, 22.

Kaswa, J.M. (2015). The effect of visual learning aids on students' academic performance in public

secondary schools: a case of Magu district secondary schools. (Unpublished Master dissertation). Open university of Tanzania, Tanzania

Natoli, C. (2011). *The importance of audio-visual materials in teaching and learning.* wwwhelium.com/channels/224-early-childhood-ed.

Ojobor, R. C., Babarinde, E. T. &Fagbemi, V. O. (2020). Audio-visual resources in library: An enhancing tool for effective teaching and learning in primary schools in Nsukka L.G.A. *Library Philosophy and Practice (e-journal*) 4361.Retrieved from https://digitalcommons.unl.edu/libphilprac/4 361.

Oketunji, I. (2000). *Application information Technologies in Nigerian Libraries: problems and Prospect.* Paper presented at the 10th Biennial Conference of the Association of Library and Information Science Educator (NALISE) Ibadan: National Association of Library and Information Science Educators (NALISE). Department of Library, Archival and Information studies, University of Ibadan. Pp. 7-20.

Onuoha, J. & Chukwueke, C.(2020).Availability and utilization of audio-visual resources for teaching and learning in Government Day Secondary School, Nukkai, Jalingo, Taraba State, Nigeria.*International Journal of Knowledge Dissemination, 1* (2), 26-36

Popoola, S. O. (2003). Faculty awareness about library, information products and services in Nigerian Universities.*Gateway Library Journal,4*(1&2), 1-11

Ramesh, K. &Maranna, O. (2016).Consequence of audio visual collection in school libraries. *National Conference Proceedings School Libraries in Digital Age (COSCOLIDIA)* 12th and 13th May.

Shah, I.& Khan, M. (2015). Impact of multimedia-aided teaching on students' academic achievement and attitude at elementary level.*US-China Education Review A, 5*(5), 349–360.

Swank, R. C. (2011).The educational function of university library. http://www.ideals.illinois.edu/bitestream/han dle/2142/5455/librarytrend.

Tang, D. K. H., &Intai, R. (2017).Effectiveness of audio-visual aids in teaching lower secondary science in a rural secondary school.*Asia Pacific Journal of Educators and Education, 32*, 91–106. Retrieved from https://doi.org/10.21315/apjee2017.32.7

Umar, F. (2014). Audio visual aids in education: definition, types and objectives. Internet materials retrieved from www.study/lecturenotes.com/.../audio-vis

Zheng, B., Warschauer, M., Lin, C. H., & Chang, C. (2016).Learning in one-to-one laptop environments: A meta-analysis and research synthesis. *Review of Educational Research, 86* (4), 1052–1084