

# **EVALUATION OF THE MODERN TECHNOLOGY BASED CLASSROOM TEACHING RESOURCES IN BASIC TEACHER EDUCATION IN THE 21ST CENTURY.**

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## **Abstract**

*This study investigated the evaluation of the modern technology based classroom teaching resources in basic education in public schools in Isiala Mbano Local Government Area of Imo State. The study adopted a descriptive design. Four research questions were formulated. The sample size of 95 facilitators and 205 students were randomly sampled from the total population of 190 facilitators and 410 students respectively. A total of 300 copies of structured questionnaire was correctly filled and retrieved from the respondents. The instrument was validated by three experts, one expert from the department of educational technology while two experts came from measurement and evaluation department, Alvan Ikoku Federal College of Education. The reliability of the instrument was established through test-retest of the validated instrument using Pearson product moment correlation co-efficient (PPMCC) to calculate a reliability co-efficient index of 0.81 and 0.72 for facilitators and students' instrument respectively. The study was analyzed using percentages and simple mean. The study proved that there were insufficient modern technology Based teaching resources for basic education in public secondary schools, In Isiala Mbano, Imo state. Facilitators equally had little or no knowledge of modern technology based classroom teaching resources, hence this hinders effective teaching and learning. The researchers recommended among others that workshops should be organized to enable the facilitators adopt the new technology skills competencies.*

**Keywords:** Evaluation, utilization, modern technology, teaching resources, teacher education.

Technology has changed the way we do everything, even compared to how we teach the same things about 20years back, the way we communicate, and interact in the teacher education programme. Education as part of life requires

### Academic Scholarship

updates with time. We need to move away from the old and traditional methodology of teaching learning process. Globalization and changing demand for new skill sets in the job market have necessitated a need for a new teaching and learning paradigm (Iwu & Nzeako 2010). In this global world, job definitions have changed significantly. Students are expected to have a wide set of skills along with the ability to access use information from a variety of sources. Students need practical learning more than the theory oriented learning.

In schools, while the classroom set up hasn't undergone much change, there has been an effort to change the way classroom transactions take place. More and more, we are seeing that teachers are been trained to facilitate discussion in the classroom. The teaching and learning setup is transforming from being instructor led, lecture driven, to an open exchange of ideas and self-driven learning. Teachers today will need to reinvent their teaching methods, use media, students relate to like multimedia's content, interactive game-like activities, chat apps and so on. Teachers trained in archaic methods of teaching and learning are less equipped to handle the challenges of handling a classroom full of distracted students with low attention spans (Enwereuzor, Nzeako, and Ukaegbu 2019). As the popular phrase says, "if you cannot beat them, join them". With a community of students who live in a connected world, the traditional chalk-and talk method fails significantly. The teacher, whose greatest strength lies in using their expertise and institution to guide students in spending time and energy in repeating information a student can very quickly find in a textbook or online (Pradiap Singh 2015).

With technology becoming more accessible across the country –good tablet devices are now cheaper than a smart phone. Tablet and smart phone app provide supplementary learning material to students' over and above the in- person tutoring offered in the classroom. Students have the ability to take charge of their own learning. With practice and assessment material available to them and about reminding them to do their work regularly, students have greater control over the learning process. It also means that they now have a more personalized learning experience, one that will allow to progress at a pace and in a way that works for them.

Teaching is a multidimensional activity that requires some vital technology skills and competence on the part of the teacher for it to be effective and efficient. Teacher education may be described as procedures designed to equip teachers with the knowledge, attitudes, skills and competence they need to perform their professional duties successfully as teachers (Mkpa, 2016). Some of the teacher education institutions in Nigeria include the college of education and faculty of education, which offer educational technology. The goals of teacher education institutions as reflected in the Federal Republic of Nigeria (FRN, 2013) include:

1. Produce highly motivated conscientious and efficient classroom teachers for all levels of the educational system.
2. Encourage the spirit of enquiry and creativity in teachers.
3. Help teacher fit into social life of the community and the society at large and enhance their commitment to national goals.
4. Provide teachers with the intellectual and professional background adequate for their assignment and to make them adaptable to enhance the teacher's commitment to the teaching profession.

Educational technology has provided the innovation in teacher education through the application of modern classroom teaching resources. Classroom instruction resources may be broadly classified in what Nigerian street parlance pejoratively refer to as “the analogue” (fogeyish) and the “digital” (chic) (Toni 2019).

The young especially consider analogue ideas and items as dull and unexciting and the digital items as glamorous, enhanced and contemporary. Therefore, the digital classroom devices which run on batteries or electricity are considered to be in tune with trending technological and communication strides (Otu,2008). The high point is their making information’s more vivid in all spheres of life and cavity in the form of songs, home videos and documentaries. Ogwuegbu (2004) gives an instance that an individual who has watched a film or documentary on the negative effects of over population, for instance, is better informed and is better able to confront such social problems than someone who did not see the film, but then the words “analogue” and digital have opposite denotations.

According to Onwuagboke (2015) traditional or analogue resources include but are not limited to compact disc (CD), micro film/card, microphones, radios, photographs, paintings, graphic materials, 3D models, relia and specimens, chalkboards, whiteboards, books, etc. while modern or digital technology are generally electronic, portable units or devices (hard ware), some of which require software or computer applications to perform optimal. Eze and Akudolu (2003) grouped online and the offline internet resources as the platforms that have interaction capability. Internet online interactive resources include video-conferencing and group chat platforms like Skype. Other ‘online’ resources are search engines, website, goggle apps, e-library, social media platforms like; whatsapp, xender, YouTube, facebook, instagram, and such software-driven applications. This allows students and facilitators to share documents online, edit them in real and project them on the appropriate screen or monitor. The forgoing situation gives student a collaborative environment in which to exchange ideas and document their work using text, still and motion images, sounds and so on. Online resources often require subscribed internet facilities.

Offline devices include; electronic/smart boards, smart phones/tablets, multi-media kits, television/videos, overhead projectors, integrated digital teacher assistance (IDTAS), and presentation software(e.g. power-point) which enables instructors to embed high resolution photographs, diagrams, videos and sound files to augment text and verbal lecture content. Tablets and smart phones can also be linked to computers, projectors and the cloud so that students and facilitators can communicate through text, drawings and diagrams (Iwu& Ifegbo, 2011), with lecture capture resources like audio-video recorders which feature in smart phones the teacher can record his lectures as he gives them and then upload them for students to re-watch with their mobile phones if they choose. This way, students will benefit from the opportunity to review lectures at their own pace. Presently, some students use their GSM phones to record lectures as they go on.

Keziah A. (2015) further highlighted that some examples of modern technology based classroom utilized in the basic education include but not limited to the internet, e-learning, e-tutoring, virtual classroom, outsourcing education GSM phones among others.

### Academic Scholarship

Teaching and learning in the basic teacher education program face a lot of challenges. Toni (2019) observed that lack of ICT skills and poor infrastructural facilities hinders the effective and efficient teaching. Many rural community schools have no public electric power source at all. Onwuagboke and Nzeako (2019) asserted weak, human resources. There are many ill-equipped teachers without the capacity and skill to deploy technology in the classroom. Like a machine, human beings require periodic upgrade, Kezeiah A. (2015) collaborates (Agadi, 2009 & Duru 2011) view that subject scheduling within the available time for ICT activity is an impediment to the use of technology resources in the classroom. Akude & Anulobi (2014) view that 21<sup>st</sup> century classroom that is devoid of the use of modern based technology resources clearly will be monotonous, dull and abstract thereby lowering the moral learning ability of the students. According to Ewerezor, Nzeako, and Ukegbu (2019) view that 21<sup>st</sup> century lessons should be taught as practical preparation for life and related to learners immediate environment, and if discharge in abstract will use its appeal on the learner. Lack of good school ICT environments which include the digital libraries, curriculum materials, teaching methods, good classrooms and quality teachers are variables that affect academic performance of students in the use of modern technology (Adereinoye (2011). An observation, by the researchers on the 2017/2018 examination results of basic education students, Isiala Mbano revealed that out of 22 students on enrollment 5(22.7%) students made 70% and above, 7(28.3%) made 60-69%, and also 10(44%) scored 0-49%. The poor results especially from the 10 basic students scored below 50% have shown the contrary view on the objectives of teacher education.

### **Statement of problems**

Observing the performance of basic education students results below;

Basic education students results

S/N	Schools	Year	No of students	D	C	P	ABS	Total
1.	Aguaanis secondary school	2016	20	–	6	13	1	20
2.	Amanzeh comprehensive school	2017	40	–	19	21	-	40
3.	Amaraku comprehensive school	2018	68	4	26	37	1	68
4.	Ohi technical college	2019	38	1	17	19	1	38
5.	Okohia girls secondary schools	2020	9	–	8	1	-	9
			175	5	76	91	3	175

Source: Basic Education Results 2019

Viewing the results above, one would generalize that many students did not perform well. The question might arise- could it be that modern technology teacher

based is under utilized in the classroom teaching and teaching? Could the use of modern technology help to regain the interest of the basic teachers in the school systems? Since basic education is one of the branches of education that has been found to be a veritable tool for achieving values, re-orientation for socio-economic development, it is therefore necessary to investigate the quality and quantity of modern technology based in the classrooms in Isiala Mbanu, Imo state.

### **Purpose of the study**

The purpose of the study is to evaluate the modern technology based classroom teaching resources in basic teacher education in the 21<sup>st</sup> century. Specifically the study sought to:

1. Find out what basic education learners and their facilitators use as the modern technology resources.
2. Find out what facilitators record as the sources of procuring the modern technology based teacher resources
3. Determine how regularly the facilitators state that they utilize modern technology based resources
4. Identify problems facilitators and the basic education learner's view as factors hindering against the utilization of modern technology resources in teaching basic education centers.

### **Research Questions**

The following research questions guided the study,

1. What do students and facilitators use as the available modern technology resources used for teaching in basic education schools?
2. What do facilitators record as the sources of processing modern technology resources used in the classroom?
3. How regularly do the school facilitators state how they use the modern technology based classroom teaching resources?
4. What factors do facilitators and basic learners state militate against the use of modern teaching resources in the classroom?

### **Methods**

Descriptive survey research design was adopted for the study. The study aimed at evaluating the modern technology based classroom teaching resources in basic education in Isiala Mbanu, Imo State. The study was guided by four research questions. The area of study is Isiala Mbanu Local Government Area, Imo State. According to IMSUBEB basic education schools in Isiala is drawn from 27 local government areas. The population of the study is made of 205 facilitators and 1535 basic education learners. The sample size of 95 facilitators and 205 learners were randomly selected given a total of 300 respondents. The structural questionnaire was made up of two parts. The first section was the facilitators demographic data, while the second part was made of four sections (A, B, C, D) focused on the available of modern technology based teaching resources (AMTBTR). The questionnaire item in this section were developed using a four point modified liker type scale with choice options that ranged from strongly agreed (SA) 4points, Agree (A, 3points), Disagree (D)2 points, and strongly disagreed (SD, 1 points). The instrument was validated by 3 experts, one experts from the department of educational technology while two from

### Academic Scholarship

came from measurement and evaluation A.I.F.C.E Owerri. The reliability of the instrument was established through test-retest of the validated instrument and Pearson Product moments correlation co-efficient (PPMCC) at 0.05 alpha level of significance calculated a reliability co-efficient index of 0.81 and 0.72 for facilitators and learners instruments respectively. A total of 300 copies of structural questionnaire was correctly filled and retrieved from the respondents. The study was analyzed using percentages and simple modern. All the 300 copies of the questionnaires were personally administered by the researchers to the respondent's face- to -face at their various schools basic schools. Further, the data calculated were analyzed using percentages, frequency and mean. Mean equal to or greater than 2.50 was taken as agreement, while below 2.50 was disagreement. Also any calculation below 50% is rejected while 50% is rejected while 50% is accepted.

### Results

Data collected for the study were presented in tables to 4 according to their research questions. Research question one: what are the available of modern technology based technology resources in basic education?

Talk 1: Available of technology based classroom.

S/N	ITEMS	AVAILABLE	%	NOT AVAILABLE	%
1.	Marker	A	100		
2.	White board	A	100		
3.	Human voice	A	100		
4.	maps	A	100		
5.	Field trip	A	100		
6.	Model	A	100		
7.	Radio	A	100		
8.	Video conference	NA		NA	100
9.	Skype	NA		NA	100
10.	e-library	NA		NA	100
11.	Smart phones	NA		NA	100
12.	Power point	NA		NA	100
13.		A		NA	100
14.	Projectors	NA		NA	100
15.	Microphones	A		NA	100
16.	Smart phones	NA		NA	100
17.	Photographs	A	100	A	
18.	Videos	NA		NA	100

The table 1 shows that some of the modern technology based classroom that are available were marker, whiteboard, human voice, maps, field trips, model and radio; whereas the following namely video conferencing, Skype, smart phones, e-library, power points, projectors, videos were not available. Almost 50% of the items were not available.

Question 2: what are the various sources of modern technology based classroom materials for teaching in basic education centers.

S/N	ITEMS	SA	A	D	SD	x	REMARKS
1.	National mass education commission	50	40	5	-	2.97	A
2.	NERDC	5	24	35	30	2	R
3.	Facilitators improve the materials	20	20	40	15	2.3	R
4.	Facilitators make direct purchase	10	10	25	50	2.3	R
5.	Universal basic education	55	20	10	5	3	A
6.	Donation from UNICEF & EU	50	30	10	5	3	A
7.	Donations from NGOs	15	15	25	40	2.14	R

Table 2 shows that National mass education commission and Imo State universal basic education were the sources of provision of technology classroom. Very few facilitators improvised some of the tentative classroom materials. contrary, National agency such as UNICEF, EU, NERDC, NGO, do not supply technology materials for the basic education centers in isiala- Mbanda, Imo state.

Research question 3: how regularly do facilitators utilize technology based classroom in teaching and learning.

Talk 3; Responses of facilitators on how regularly technology were used in teaching and learning.

S/N	Items rated	AL	ST	Sp	Not at all	x	De
1	Marker	55	-	-	-	4.00	A
2	White board	55	-	-	-	4.00	A
3	Human voice	55	-	-	-	4.00	A
4	Maps	10	10	15	25	1.16	R
5	Field trips	10	10	-	35	1.0	R
6	Model	5	-	-	50	1.10	R
7	Radio	10	10	15	25	1.16	R
8	Video conference	-	-	-	55	1.0	R
9	Skype	-	-	-	55	1.0	R
10	e-library	-	-	-	55	1.0	R
11	Smart phones	-	-	-	55	1.0	R
12	Power point	-	-	-	55	1.0	R
13	Computers	-	-	5	50	1.03	R
14	Projectors	-	-	-	55	1.00	R
15	Micro phones	5	5	25	20	2.00	R
16	Smart phones	-	-	-	55	1.00	R
17	Photographs	10	15	-	30	1.50	R
18	Videos	-	-	-	55	1.00	R
	Total mean					1.67	

NOTE: AL-Always, ST-Sometimes, SP-Sparingly, Not at all Take 3 shows facilitator’s response and regular utilization of the available technology classroom materials as indicated above the mean is 1.67. This applies that technology based class were not in the teaching and learning.

**Academic Scholarship**

Research Question Four: What factors militate against the utilization of technology classroom teaching resources?

Facilitator’s response on the factors that militate against the use of technology based texting resources in basic education.

S/N	Items	SA	A	D	SD	-X	Remarks
1	Lake of fund to procure technology.	45	40	5	5	3.45	A
2	Inadequate budgetary allocation.	50	35	10	0	3.25	A
3	Lack of insensitive to facilitators.	50	35	5	5	3.10	A
4	Lack of skill to develop appropriate Medium technology classroom.	10	15	25	45	2.5	A
5	Lack of interest on the integration of technology in teaching and learning.	50	20	20	5	2.90	A
6	Lack of workshop and seminars to update skills.	65	15	10	5	2.65	A
7	Facilitators are not technology compliant	60	20	10	5	2.64	A
8	Inadequate supply of electricity.	55	30	5	5	2.62	A
9	Improper orientation on the use of technology.	10	15	25	45	2.50	A
10	Lack of support from the government.	50	35	10	0	3.23	A

In table 4 basic education in Isiala Mbanjo Imo State were faced with hindrances as listed in the table; lack of fund to procure technology teaching resources, inadequate budgetary allocations, lack of incentives to facilitators, lack of skills to develop appropriate modern technology classroom-based resources, lack of interest or the integration of technology in teaching and learning, lack of workshops and seminars to update skills, more so, facilitator were not technology compliant, inadequate supply of electricity, improper orientation on the use of technology as well as lack of support from government in terms of giving grant and others.

**Discussion**

The findings from research questions were discussed as follows. The analysis on table 1 indicated that there were very few available of technology based classroom teaching resources in basic education in Isiala Mbanjo, Imo state. From the result on table 2, show that technology teaching resources were provided by some organizations and agencies for the basic education in Imo state. The funding was in disagreement with Okeke (2004) who states that facilitators at the LGAs play vital role of providing technology based classroom teaching resources.



Data collected in table 3, also showed that the technology teaching resources were not fully utilized in basic education classroom. However Akude and Anulobi (2014) rightly observed that no effective teaching and learning can take place without careful planning and integration of educational technology resources. The poor quality or non existence of technology resources affects the performance of the learners and therefore little or nothing can be achieved after investing huge resources of the country in the implementation of illiteracy programs (Aderinoye, 2004). This is also against the view of Otu(2008) that proper use of resource materials like; charts, diagrams, models, pictures, specimens and so on can make presentation of learning events more vivid, lively, faster and interesting in a way to facilitate the mastery of what is being taught.

Table 4 revealed that there were some factors militating against the utilization of teaching based classroom teaching resources in basic education in Isiala Mbano. Among the factors include facilitators lack of interest, lack of fund, denial of incentive, epileptic power supply, inadequate financial support, lack of workshops and seminars, improper orientation on modern technology resources among others. This is in line with Ajaeli (2009), Anulobi (2010) and UNICEF(2010) that shortage of fund, poor management, lack of technology resources among others militate against the utilization of technology resources. According to Ewereuzor, Nzeako and Ukaegbu(20019), poor technology resources are the fundamental causes of decline in the quality of teacher education. However, Akude and Anulobi (2014) further observed that some facilitators in the schools lack cognate experience on how to integrate technology teaching resources into the implementation process, and are ignorant of workshops and seminars on the effective utilization of technology resources. This implies that success of basic education goals would not be achieved without proper use of technology in the classroom teaching and learning.

## **Conclusion**

The rapid development of technology has changed the way facilitators teach and interact with basic education students. Basic education is modernized with the usage of technology resources. Therefore, 21st century trained facilitators are required for contemporary classroom technologies as young demographics are more receptive to new fangled devices, ideas and systems. The use of technology in the classroom will be most fitting for each level of education depending on the technology tool to be used, and care must be taken in selecting the teaching media that will be appropriate for any age group. Any neglect to the provision of technology resources into our educational system will contribute to the decline in basic education.

## **Recommendations**

Based on this, the following recommendations were made;

1. The Nigerian government should build and equip special classroom even if in selected schools which should run as models that would be for technology resources centers. It would be necessary to tie in power packs designed to be re-charged periodically for the orientation of the technology resources.
2. For facilitators the study embrace with technology, they would need to be retrained periodically.

### Academic Scholarship

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3. Young teachers should be trained in the use of technology in teaching as many teachers in service today are digital illiterates and are too old to learn the ways of the internet.
4. Technology devices are often adequate. In the absence of reliable electric power compact solar units can be provided for the model learning classrooms.
5. Some money should be set aside for overhead cost like; maintenance , consumables, software, upgrades, Web searchers computer applications and replacement parts
6. Allusion and utilization of technology teaching resources in Nigeria learning school, this will improve education.

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