EXTENT OF UTILIZATION OF TECHNOLOGICAL FACILITIES IN TEACHING AND LEARNING IN PUBLIC PRIMARY SCHOOLS IN ANAMBRA STATE

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Abstract

The aim of this study is to ascertain the extent of utilization of Technological facilities in teaching and learning in public primary schools Anambra State. Four research questions guided the study. The study adopted the descriptive survey research design. The population of the study comprises of 8078 teachers in pubic primary schools in Anambra State. The sample size for the study is 807 using simple random sampling technique. A four point rating scale containing 30 items was used for data collection. This instrument was validated by three experts. Technological Facilities Utilization Questionnaire (BTIQ) was used to collect data. Cronbach Alpha method was used to establish the reliability of the instrument which yielded coefficients of 0.67, 0.62, 0.73 and 0.72 for the four clusters respectively with an overall reliability coefficient of 0.86. Mean and Standard Deviation were used for data analysis. The finding of the study indicates that public primary school teachers in Anambra State utilizes technological facilities in their teaching to a moderate extent. Based on the finding, it was recommended that appropriate technology items which supports teaching and enhances learning should be provided and made easily accessible to teachers so as to foster better academic performance for pupils, among others. Futher findings reveals that retraining of staff on digital skills, provision of ICT knowledge for digital skills, access to computers among others are the possible solutions to the constraints affecting the utilization of technological facilities in teaching.

Keywords*: Teaching and Learning, Technological Facilities, ICT Knowledge*

Introduction

The dynamics of technological facilities especially around the world encompasses many disciplines including education, and has been influential around academic activities. This explains why teaching has not only appeared more interesting but also interactive; and the need for teachers to diligently adopt the use of corresponding technological facilities while teaching. Teaching process can be defined as a transformation process of knowledge from teachers to pupils (Munna and Kalam, 2021). Also, teaching is simply the impartation of information or skills to another individual (Rajagopalan,2019). The impartation of skills, knowledge and information is usually not done in isolation but with the use of certain tools, in which technological facilities are included. According to Ansari, Shah, and Khoso (2022) technological facilities are referred to as tools which are capable of providing sustainable, inclusive, equal and lifelong learning, especially when used as a means geared towards transferring knowledge. Adewuyi(2020) explained technological facilities as tools, equipments and gadgets used for systematic application of knowledge during classroom teaching and learning activities. This above definition thereby explained technological facilities as a means carried out in an organized format so as to achieve certain academic goals especially in education.

Adewuyi further went on to name certain technological facilities which enhances classroom teaching and learning and they include the computers, videos, overhead projectors, television and lots more, like the internet, public address system and tablets. Onyekaba(2021) while narrowing technological facilities down to education defined it as those devices used to foster, support and improve teaching for teachers and learning for pupils; and also helps to develop desirable learning environment for all learning. This simply explains the usefulness of technological facilities in helping education to thrive more and even better than any earlier

estimated extent of success recorded in education. To support this view, Akudo and Eziuzo (2023) opined that education provided in the 21st century should be technologically based so as to respond to certain needs which past century teaching may not had responded to. Therefore, technological facilities, in its entirety, as pertaining to educational purposes, is simply referred to as those tools in teaching and learning that should be present in the classroom for the sole purpose of helping teachers achieve appropriate teaching geared towards individualized learning for all learners and they include all the tools and gadget that explains the teachers teaching more appropriately to the individual learner. The above mentioned individualization of learning for all learners reduces pupils poor interest towards learning(Acar and Ordu , 2022).

These tools includes the computer, electronic mail, internet, world wide web, telephone and lots more (Nweze ,2018). Nweze went on to opine that although these tools of teaching may not be sufficiently provided nor utilized in some public primary schools, it does not still prevent them from being identified as technological facilities which assist the acts of teaching. But worthy of note is that, without these tools, teaching will appear rigid (Ezeokaka and Anum,2019). Lawal, Ibanga, and Sunday(2024) opined that technological facilities are tools that adequately assist teaching, by reducing teachers workload and foster learning when teachers are provided with appropriate and necessary pre-service education, training and organized professional development programme with its focus on digital skills.

Digital skills or competence refers to a set of knowledge, skills and attitude that allows a person to achieve different goals through the use of digital technologies (Serezhkina, 2021). Those acquired skills enable teachers to organize the learning environment with necessary element of digital education so as to compliment the already available conventional elements of education. Therefore, the major goal of a digitalized teacher who is also skilled inconventional teaching, is to transfer sustainable and problem-solving strategies through the

use of digital technology combined with conventional teaching skills to the learner. Being a digitalised teacher expires with time and age, for this purpose Serezhkina explains that a teacher who choose to remain resolute in delivering instruction with the use of technology so as to meet the varying needs of pupils, must keep up with the various modern technologies, and must own at least, some of them, and must promote the use of those technology facilities. Saprikis, Kollia and Charitoudi (2019) in considering the pivotal role the use of technological facilities play in our society and schools opined that training teachers to be technologically inclined is a necessity. Hence, a teacher who acquired all the teaching skill aside from a digital skill is still a regular teacher who received all other training aside from the training that empowers him or her to teach with the use of technological facilities.

Secondly, the objectives of the instruction to be delivered determines the interface of the learning environment. A regular teacher, that is, a teaching who has acquired all other teaching skill apart from digital skills, structures the environment with the objectives of a conventionally prepared teaching methods,in that, what children should know at the end of the teaching is not affiliated to the assistance a computer can offer; while a teacher who has acquired digital skills upon acquiring other relevant conventional skills of teaching, prepares the learning environment with an objective which addresses, not only the child's peculiar needs, but also the child's adaptation need for our ever changing society.

The child is the centre of attraction in the classroom. Every activity that takes place revolves around the child, both the skill which a teacher acquired and the sum total of all the learning objectives of a given instruction, all is for the betterment of the child. Every child needs their learning to be digitalised. Roman in Clipa and Mata(2021) states that exposing the usefulness and manipulation of the digital world to the child will put parents and teachers in a crucial role of protecting children from the risks of the online environments; but educating

children without the use of technology is an education that may not meets their peculiar needs. Viner, Singhand Shaughnessy (2020) asserted that the use of technological facilities in education has changed the learning experiences of every child, including those children with special needs.The above assertion although may not be possible in every public primary schools in Anambra State, due to the cost of those facilities, and how user unfriendly they might appear to be, (Cochrane cited in Al-Shabaab, 2019). Therefore, GPS based navigation device for direction, sound and image assistive softwares for easy understanding of shapes and spoken words and lots more, which a teacher combines with the regular classroom instruction is highly essential for ensuring that every child receives an education that is worthwhile.

The act of teaching and learning with the use of technological facilities is very necessary in public primary schools, this is because technological facilities helps to capture pupils' interest, attention, and individualize each pupil's instruction, especially when utilized properly. Also, technological facilities help to tailor learning experiences to individual pupils' needs. It also provides the teachers with access to a range of digital resources and tools which enables the teacher to create engaging and interactive learning environment. Again, it fosters increased pupils' motivation and participation. Despite the above benefits, the researcher is aware of the availability of certain technological facilities found in public primary schools in Anambra State and then wants to find out the extent of its utilization and this becomes the problem in this study.

Statement of the Problem

As the cornerstone of education, primary education deserves high priority, including the provision and the utilization of technological facilities that can enhance the teaching and learning experience across all subjects. The absence of this provision and usage,

may limit pupils' ability to engage effectively with classroom activities and could hinder teachers' efforts to provide personalized learning experiences. This absence if filled by enlightenment and training programs by the government might enable teachers to thoroughly implement the utilization of various technological facilities.

Again, the researcher observed that pupils may not have a solid grasp of basic concepts, making it difficult to understand more advanced material and may also struggle to think critically and apply concepts to real-world situations. Furthermore, observation has revealed that a good number of teachers in public primary schools in Anambra state has no idea of how those technological facilities can be utilized in the classroom . Also, pupils may not have enough opportunities to receive adequate training on how to manipulate those facilities and to also practice using them, and these could lead to difficulties in retention and application.

The above listed problems, makes it pertinent for the researcher to examine the extent to which primary school teachers utilizes technological facilities in the teaching and learning in public primary schools in Anambra state.

Purpose of the Study

The general purpose of this study is to determine the extent to which technological facilities are utilized in teaching and learning in public primary schools in Anambra state. Specifically, this study determined;

1 Technological facilities used in teaching and learning in public primary schools in Anambra state.
2 The extent to which teachers utilize technological facilities in teaching in pubic primary schools in Anambra state.

3 The constraints affecting the utilization of technological facilities in teaching in public primary in Anambra state.

4 Possible solutions to the constraints affecting the utilization of technological facilities in teaching and learning in public primary schools in Anambra State.

Research Questions

The following research questions guided the study:

1. What are the technological facilities used in teaching and learning in public primary schools in Anambra state?
2. To what extent do teachers utilize technological facilities in teaching in pubic primary schools in Anambra state?
3. What are the constraints associated with utilizing technological facilities in teaching in public primary schools in Anambra state?
4. What are the possible solutions to the constrains affecting the utilization of technological facilities in teaching and learning in public primary schools in Anambra State?

Methods

This study is on the extent to which technological facilities are utilized in teaching and learning in public primary schools. The area of the study is Anambra State. It adopted a descriptive survey research design. The population for this study comprises of 8,078 teachers (521 male and 7557 female) (Anambra State Universal Basic Educational Board, ASUBEB, 2024). The sample for this study comprised 807 teachers in primary schools in Anambra state. The sample was selected using the multistage sampling procedure. Firstly, simple random sampling was used to select three out of the existing six education zones. 10 primary schools

were selected from each of the three LGEA sampled in the study, from 10 primary schools sampled, 20 teachers were selected making it a total of 600 public primary schools teachers selected in the study

The instrument for data collection was Technological Facilities Utilization Questionnaire (BTIQ). The 30-item instrument was constructed by the researcher to collect information on the constituents of technological facilities, the extent to which public primary school teachers utilized them while teaching, constraints to the utilization of technological facilities in teaching and learning and possible solutions to those constraints. The questionnaire was structures on a 4-point Likert scale of clusters 1,3 and 4 which are Strongly agreed, agreed, disagreed and strongly disagreed respectively, while cluster 2 is scaled on Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE). Any item that is at 2.50 and above will be accepted as agreed while any below 2.50 will be regarded as disagreed. Also, any item at 2.50 or above will be accepted as moderately extent. The instrument for data collection was validated by three experts. Two experts in the Department of Early Childhood and Primary Education, one from the Department of Educational Foundations (Measurement and Evaluation option). To establish the reliability of the instrument, the questionnaire was administered to 20 teachers in Awka education zone. The data was analyzed with Cronbach Alpha statistics and yielded an overall reliability coefficient of 0.86. Mean and Standard Deviation were used for data analysis.

Results

Research Question One: What are the technological facilities used in teaching and learning in public primary schools in Anambra state?

Table 1. Mean and standard deviation on the technological facilities used in teaching in public primary schools in Anambra State.

S/N	Technological Facilities	Mean	SD	Decision
1	Computers or laptop	3.49	.69	Agree
2	Internet resources	3.24	.70	Agree
3	Interactive whiteboard	2.31	.80	Disagree
4	Public address system	1.67	.83	Disagree
5	Digital projectors	3.21	.55	Agree
6	Tablets and phones	3.76	.67	Strongly agree
7	Educational softwares	3.58	.70	Strongly agree
8	Calculator	3.61	.70	Strongly agree
	Grand mean	**3.10**		**Strongly Agree**

Data presented in table 1 shows the Mean and standard deviation technological facilities used in teaching in public primary schools in Anambra State. Items 6, 7 and 8 was rated strongly agree, items 1, 2, and 5 was rated agree, items 3 and 4 was rated disagree. The grand mean of 3.10 shows that the respondents agreed to using computer, laptops, internet resources, digital projectors, phones, educational softwares and calculators in teaching and learning in public primary schools in Anambra State. The standard deviation reported ranged from 0.55-0.83, this indicates heterogeneity in the respondents rating.

Research Question Two: To what extent do teachers utilize technological facilities in teaching in pubic primary schools in Anambra state?

Table 2. Mean and standard deviation on the extent to which teachers utilize technological facilities in teaching in pubic primary schools in Anambra state.

S/N	Teachers utilize	Mean	SD	Decision
9	Computers or laptop	3.40	.51	V.H extent
10	Internet resources	3.41	.49	V.H extent
11	Interactive whiteboard	1.62	.54	Low extent
12	Public address system	1.11	.50	V.L extent
13	Digital projectors	3.06	.53	High extent
14	Tablets and phones	3.76	.49	V.H extent
15	Educational softwares	1.55	.48	Low extent
16	Calculator	3.71	.51	V.H extent
	Grand mean	**2.45**		**Low extent**

Data presented in table 2 shows the Mean and standard deviation on the extent teachers use technological facilities in their teaching in pubic primary schools in Anambra State. Items 9, 10, 13, 14 and 16 were rated to a high extent, items 11 and 12 was rated to a low extent. The grand mean of 2.70 shows that the respondents rated the extent teachers use technological facilities in pubic primary schools to a low extent. The standard deviation reported ranged from 0.48-0.54, this indicates homogeneity in the respondents rating.

Research Question Three: What are the constraints associated with the utilization of technological facilities in teaching in public primary in Anambra state?

Table 3. Mean and standard deviation on the constraints associated with utilization of technological facilities by teachers in teaching in public primary schools in Anambra State.

S/N	Constraints Associated with Utilizing Technological Facilities includes	Mean	SD	Decision
17	Lack of resources (e.g., technology, internet access)	3.70	.31	Strongly agree
18	Insufficient digital training for teachers	3.68	.56	Strongly agree
19	Time constraints in class periods	3.55	.50	Strongly agree
20	Pupils resistance or difficulties	3.62	.67	Strongly agree
21	Technical issues like tech malfunction	3.64	.71	Strongly agree
22	Power outage	3.64	1.10	Strongly agree
23	User unfriendly computer software	1.44	.49	Disagree
	Grand mean	**3.32**		**Strongly Agree**

Data presented in table 3 shows the mean and standard deviation on the constraints associated with utilizing technological facilities by teachers in teaching in primary schools in Anambra state. The respondents rated strongly agreed to items 17-22, item 23 was rated disagreed. The grand mean of 3.32 shows that the respondents strongly agreed to the constraints associated with utilizing technological facilities by teachers in teaching in public primary schools in Anambra state. The standard deviation reported ranged from 0.31-1.10, this indicates homogeneity in the respondents rating.

Research Questions Four: What are the possible solutions to the constraints affecting the utilization of technological facilities in teaching in public primary schools in Anambra State?

Table 4. Mean and standard deviation on the solutions to the constraints affecting the utilization of technological facilities in teaching in public primary schools

S/N	Solution to the Constraints	Mean	SD	Decision
24	Retraining of staff on digital skills	3.73	1.19	Strongly agree
25	Provision of ICT training for digital skills	3.28	1.32	Agree
26	Provision of ICT knowledge through programs	3.45	1.27	Agree
27	Access to computers	3.13	1.19	Agree
28	Favourable conditions for utilizing technological facilities	2.73	0.67	Agree
29	Manageable and controllable class size	2.64	1.25	Agree
30	Free interaction among pupils and teachers	3.46	0.79	Agree
	Grand mean	**3.20**		**Strongly Agree**

Data analysis presented in table 4 shows the mean and standard deviation on solutions to the constraints affecting utilization of technological facilities in teaching and learning in public primary schools in Anambra state. The respondents rated strongly agreed to items 24 with mean score of 3.73, items 25-30 had mean scores of 3.28, 3.45, 3.13, 2.73, 2.64, 3.46 respectively. The grand mean of 3.20 shows that the respondents rated strongly agree to solutions to the constraints affecting utilization of technological facilities in teaching and learning in public primary schools in Anambra state. The standard deviation reported ranged from 0.67-1.32, this indicates homogeneity in the respondents rating.

Discussion of Findings

Findings reveal that computers, internet resources among others are technological facilities utilized in teaching in public primary schools in Anambra State. This finding concurs with Ezekoka and Anum (2019) who posits that teaching may not be adequately possible without the inclusion of various technological facilities that should be found in the classroom during instruction delivery. Similarly, Acar and Ordu (2022) posit that items which serves as

teaching tools stands to help pupils have a vivid picture of a particular context while learning. Also, the helps to individualized learning among pupils.

The findings revealed that the extent to which teachers utilize internet resources, computers, and interactive whiteboard, educational software among others, in teaching in public primary schools is to a high extent and to a low extent, respectively. The finding negates the view of Ogwazu (2023) who stressed that many teachers in primary schools lack knowledge of technological facility and thereby, make little or no use of them in developing their teaching plans, lesson notes and in the teaching process.

Findings also reveals that lack of technological resources, insufficient training or supports for teachers among others are the challenges teachers face in the utilization of technological facilities in teaching in public primary schools in Anambra state. This finding is in line with that of Saprikis, Kollia and Charitoudi(2019) who posits that the various constrains such as teacher low self-efficacy and lack of proper teacher support mechanisms and similar more, makes the utilization of technological facilities by teachers almost impossible.

The findings reveals that retraining of staff on digital skills, provision of ICT knowledge for digital skills, access to computers among others are the possible solutions to the constraints affecting the utilization of technological facilities in teaching in public primary schools in Anambra state. This finding is in line with Akudo and Eziuzo (2023) who posit that introducing new innovative teaching strategies and methods which births adequate provision of ICT training and access to computers will help to improve academic outcomes and address real problems to promote equitable learning.

Conclusion

Based on the findings of this study, it was concluded that the utilization of technological facilities by teachers in teaching and learning in the public primary schools in Anambra state is to a moderate extent.

Recommendations

Based on the findings of this study, the following recommendations were made;

1. Appropriate technological facilities should be provided by the governments and made easily accessible to teachers so as to foster better academic performance in pupils.
2. Teachers should always integrate the use of technological facilities during teaching in primary schools.
3. Sensitization program should be organized so as to empower teachers for adequate usage of technological facilities in teaching pupils.
4. Conditions connected with access to technological facilities should be made more favourable by school heads in various schools.

REFERENCES

Acar, Ö., and Ordu, K. (2022). Investigation of students' attitudes towards science according to grade level and gender in middle schools with different science achievement levels. *Cukurova University Faculty of Education Journal*, 51(2), 1043–1072. https://doi.org/10.14812/cuefd.1018469

Adewuyi, K. W. (2020). New tools, gadgets, and devices in libraries. In S. M. Tripathi, M. S. Gaur, & M. R. M. S. Khan (Eds.), *Handbook of research on digital devices for inclusivity and engagement in libraries* (p. 20). IGI Global. https://doi.org/10.4018/978-1-5225-9034-7.ch012

Akudo, F. U., and Eziuzo, G. O. (2023). *Deployment of effective innovative methods for management of teaching and learning in the 21st century classroom in secondary schools in Anambra State*. Nnamdi Azikiwe University, Awka, Anambra State.

Alshabeb, A. M., and Alharbi, O. (2019). Critical analysis of the benefits and drawbacks of assistive technology with special needs. *Advances in Social Sciences Research Journal, 6*(8), 210–215.

Ansari, A. S., Shah, S. S., and Khoso, I. (2022). The impact of technological and infrastructural facilities on student's learning: A change management perspective. *Journal of Business and Social Review in Emerging Economies, 8*(2), 371–380. https://doi.org/10.26710/jbsee.v8i2.2289

Clipa, O., and Mata, L. (2021). European educational policies on teacher training for early childhood education. In *Trends and prospects of the education system and educators' professional training development* (pp. 15–26).

Ezeokaka, G., and Anum, O. A. (2019). Use of blended learning in Nigeria education system: Opportunities, benefits and challenges. *International Journal of Innovative Technology Integration in Education*, Faculty of Education, Imo State.

Isola Rajagopalan. "Concept of Teaching." Shanlax International Journal of Education, vol. 7, no. 2, 2019, 5-8. DOI: https://doi.org/10.34293/ education.v7i2.329

Lawal, U. M., Ibanga, I. J., and Sunday, P. (2024). Integrating digital skills competencies into Professional Diploma in Education curriculum in vocational and technical education in North-East Nigeria. *ALSYSTECH Journal of Education Technology, 2*(3), 206–226. https://doi.org/10.58578/alsystech.v2i3.3346

Munna, A. S., and Kalam, M. A. (2021). Teaching and learning process to enhance teaching effectiveness: A literature review. *International Journal of Humanities and Innovation (IJHI), 4*(1), 1–4. https://doi.org/10.33750/ijhi.v4i1.127

Nweze, C. A. (2018). Utilization of ICT facilities for quality teaching and learning in the 21st century: An overview of public secondary schools in Rivers State. *African Journal of Educational Research and Development (AJERD), 11*(2), 215–223.

Ogwazu, J. E. (2023). Impact of e-pedagogy and challenges in selected lower public primary schools in Lagos, Nigeria. *International Journal of Studies in Education, 19*(1).

Onyekaba, M. N. (2021). Assessment of utilization of information and communications technology (ICT) facilities in colleges of education in North-West geo-political zone, Nigeria. *African Journal of Science, Technology & Mathematics Education, 6*(1), 145. http://www.ajstme.com.ng

Saprikis, V., Kollia, A., & Charitoudi, G. (2019). The impact of ICT training on teachers' perceptions and use of technology in education: A case of Greece. *34th IBIMA Conference*, Madrid, Spain.

Serezhkina, A. (2021). Digital skills of teachers. *E3S Web of Conferences, 258*(2),07083.https://doi.org/10.1051/e3sconf/202125807083Viner, M., Singh, A.,

& Shaughnessy, M. F. (2020). Assistive technology to help students with disabilities. In *Special Education Design and Development Tools for School Rehabilitation Professionals* (pp. 240–267). https://doi.org/10.4018/978-1-7998-1431-3.ch012