



Impacts of Utilization of Facilities in the Centre for Educational Technology for Effective Training of Teachers in Colleges of Education in North-Eastern Nigeria

¹ Aishatu. A. Nyako, ²Fadimatu Usman and ³Haruna Danjuma

^{1,3} Department of Curriculum and Instruction, Federal College of Education, Yola

² Educational Foundations, Federal College of Education, Yola

Email: usman.fadimatu@fceyola.edu.ng

ABSTRACT

The main objective of the study is to investigate the impact of utilization of facilities in the Centre of Educational Technology for effective training of Teachers in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria. Two research questions were raised to guide the conduct of the study. The study adopted and make use of survey research design. The population of the study is 7,510 respondents. Out of which a sample of 375 respondents were randomly selected for the study. The instrument that was used for data collection in the study was questionnaire designed by the researchers and tagged "impact of utilization of facilities in the Centre of Educational Technology for effective training of Teachers opinion questionnaire". The instrument was subjected to face and content validity. The questionnaire was trial-tested in a pilot study at Adamawa State College of Education Hong, which is not part of the sampled colleges for the study. The reliability of the instrument was determined through Cronbach Alpha reliability procedure. The instrument was administered to all sampled population in the sampled colleges in the study area by the researchers and their research Assistants. The mean score method of data analysis was used to answer research questions. The finding of the study revealed that the use of resources available at the Centre for Educational Technology (CET) greatly influences the successful training of educators in colleges of education located in North-Eastern Nigeria. Nevertheless, it is crucial to address the current challenges to ensure that these advantages are completely achieved. Based on the above conclusion, the paper recommends that: The incorporation of educational technology into teacher training programs is imperative for improving the overall quality of education and it is essential to provide educators with access to digital libraries, online courses, and multimedia teaching resources.

Introduction

During its 27th General Congress session, the United Nations Education, Scientific and Cultural Organization (UNESCO) acknowledged education as a vital means for enhancing human potential, acting as a key driver for shaping the future. In a similar vein, Nigeria's National Policy on Education highlights education as a crucial instrument for the development of the nation (Federal Government of Nigeria, 2013). To realize this objective, it is imperative to have a functional education system accessible to all segments of society. Education is often regarded as fundamental for cultivating quality human resources and creating wealth, offering a dependable route to success in life while serving humanity (Barakat & Buhari, 2019).

As a result, teachers are essential in adequately preparing the youth for their societal contributions, thereby fulfilling national goals. This is due to the fact that teachers are the ones tasked with implementing policy and translating principles into action through their engagement with students, serving as the curriculum implementers. Ogunyinka, Okeke, and Adedoyin (2015) emphasize that achieving educational goals relies on both the number and quality of teaching staff available. The National Policy on Education stipulates that the minimum qualification for teaching at the primary education level is the Nigeria Certificate in Education (NCE).

The NCE program lasts three years and is also the required qualification for teaching in junior secondary schools and technical colleges. The Colleges of Education are the sector in Nigeria's higher education system dedicated to training teachers to obtain professional certifications in education, although they do not confer degrees. The origins of Colleges of Education in Nigeria date back to the 1950s, with the Ashby Commission's 1959 report underscoring the necessity for developing a middle-level workforce to meet the teaching sector's demands in Nigeria. The report indicated that many educators lacked certification and appropriate training, leading to a recommendation for an expansion of intermediate education to improve the qualifications of current teaching staff (Isiyaku, 2007). As per Wikimedia (2010), teacher training in education refers to the preparation of individuals to become professional teachers equipped with the unique skills and competencies necessary for success in the teaching field. This essential training is typically delivered by the Centers for Educational Technology at the designated institutions, which is a prerequisite for establishing a college of education. Research indicates that

incorporating technology in the teaching and learning processes is crucial. This is primarily because media can alleviate many barriers to learning, particularly when teachers are adept at utilizing media.

Consequently, the National Commission for Colleges of Education (NCCE) has mandated the establishment of a Centre for Educational Technology (CET) as a required standard for the accreditation of teacher training institutions (NCCE, 2020). It is undeniable that the effective use of these resources in daily classroom activities enhances the teaching and learning process, making it less burdensome and stressful for both teachers and learners alike. It renders teaching more efficient while simultaneously facilitating learning.

According to Salami (1992), the adequate provision of facilities and equipment, along with their effective use, has consistently been positively linked to strong examination performances, while poor performances have been attributed to insufficient and ineffective use. For an efficient teaching and learning process—especially in today's information age where ICT plays a significant role—there is an urgent need for the provision and effective use of Educational Technology resources. This will undoubtedly make classroom activities in our teacher training institutions more dynamic, practically oriented, and activity-based.

The Federal Government of Nigeria in the 2009 National Policy on Education outlined the challenges facing the Nigerian education system on Information and Communication Technology (ICT). The Policy equally outlined the turnaround strategies, one of which is to promote the development of instructional materials in electronic format. It is against this background that this study is designed to investigate the availability adequacy and utilization of the Centre of Educational Technology for effective training of Teachers in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria

Objectives of the Study

The main objective of the study is to investigate the impact of utilization of facilities in the Centre of Educational Technology for effective training of Teachers in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria. Specifically, the study is designed to:

1. Examine the impact of utilization of facilities in the Centre for Educational Technology for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria.
2. Determine the challenges facing the utilization of facilities in the Centre of Educational Technology for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria.

Research Questions

The following research questions were raised to guide the conduct of the study.

1. What is the impact of utilization of facilities in the Centre for Educational Technology for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria?
2. What are the challenges facing the utilization of facilities in the Centre of Educational Technology for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria?

Literature Review

Centers for Educational Technology are referred to by various names depending on the perspective of different stakeholders, including scholars, educational institutions, and governmental bodies. This observation aligns with the findings of Agun as cited in Okwo and Eze (2013), which identify several designations for these centers, such as Resource Centres, Teachers' Centers, Education Centers, Curriculum and In-service Training Centers, Educational Technology Centers, Modern Aids to Educational Centers, and Curriculum Development Centres. Okwo and Eze (2013) argue that although these centers have different names, they share a unified goal: to offer opportunities for educators, learners, and specialists to enhance their skills, knowledge, and competencies through exposure to innovative materials, methods, and techniques in various educational fields. The main aim of utilizing the resources provided by the Centers for Educational Technology is to improve educational outcomes for students. Research suggests that teachers who are well-trained and make use of modern educational technologies typically promote better student performance (Darling-Hammond et al., 2017). For example, schools that emphasize comprehensive teacher training programs often see greater student success on standardized tests compared to those that do not prioritize professional development.

Moreover, the effective use of CET facilities can lead to increased teacher retention rates. Educators who benefit from ongoing professional development are more likely to remain in their positions for longer durations (Ingersoll & Strong, 2011). A significant advantage of using CET facilities is the cultivation of a better learning environment. The implementation of modern educational technologies such as interactive whiteboards, multimedia projectors, and computer labs—encourages a more engaging and interactive teaching approach. Research indicates that when teachers are trained with advanced technological tools, they become more adept at introducing innovative teaching practices in their classrooms (Adedoyin & Soykan, 2020). This not only improves teacher effectiveness but also positively impacts student engagement and educational results. CETs provide professional development for teachers through workshops, seminars, and training sessions focused on current educational technologies and teaching methodologies. These programs help educators stay updated on the latest advancements in education technology and instructional strategies. The utilization of CET facilities fosters

collaboration among educators from different institutions. By serving as a networking platform, CETs promote the sharing of best practices and experiences among teachers.

Furthermore, such interactions can motivate creative solutions to challenges faced in the educational environment. CETs often operate as resource centers that provide access to a variety of educational materials, including e-books, research articles, and online courses. This access is especially beneficial for teachers in North-Eastern Nigeria, who may encounter difficulties in acquiring physical resources due to economic or geographical limitations. A report from the National Commission for Colleges of Education (NCCE) reveals that increased access to digital resources correlates with improved teacher performance and enhanced student outcomes (NCCE Report, 2011). Despite this, several barriers hinder the effective use of CET facilities in North-Eastern Nigeria. The technologies utilized in the Centers for Educational Technology present their own challenges for educators. Research has indicated varying levels of commitment to resolving the issues related to integrating technology into education. Addressing these challenges is essential for maximizing the benefits provided by CET facilities. Okworo and Adie (2017) noted that educators do not fully grasp the objectives of ERC. The negative views held by teachers, staff, and other users of the centers are exacerbated by the evident ICT phobia shown in limited computer skills for lesson delivery. Other obstacles include budget constraints, along with issues related to skills, attitudes, and experience, as well as inadequate computer access, time restrictions, technical difficulties, insufficient funding, resistance to change, lack of administrative support, low levels of computer literacy, misalignment of technology with the curriculum, absence of incentives, inadequate training programs, and a lack of a clear vision for integrating technology into educational processes; in addition, challenges related to teachers, such as negative attitudes, beliefs, and hesitance towards technology, also persist.

RESEARCH METHODOLOGY

The study was conducted in the northeast geopolitical zone of Nigeria comprising of six states namely: Gombe, Bauchi, Yobe, Adamawa, Taraba and Borno States. The study adopted and make use of survey research design. The adoption of survey research design is because survey research design provide researchers with reliable, usable, primary data to inform business decisions (Elisha et al, 2023).

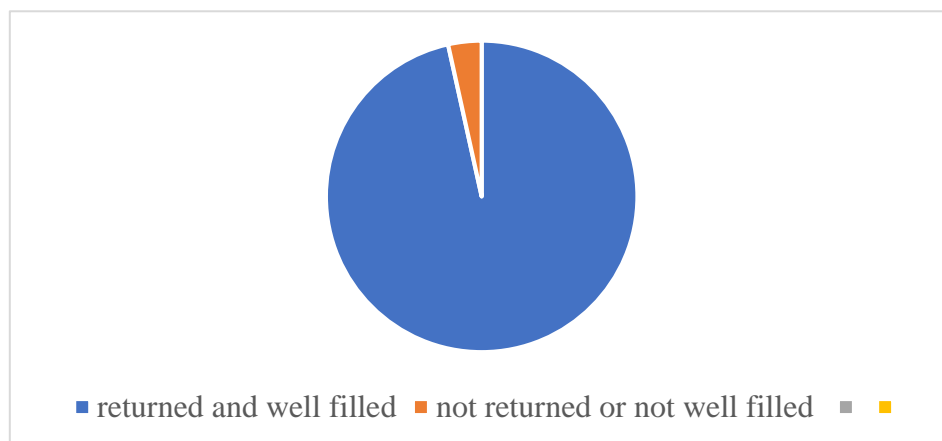
The population of the study is 7,510 respondents. This comprised of 22 Supportive staff in the Centre for Educational Technology and 1,512 lecturers in three Federal Colleges of Education in North-Eastern Nigeria and 5,976 NCE II students in the three sampled federal colleges of Education in North-Eastern Nigeria. The sample size for this study is 375 respondents. This sample size comprises of 3 CET staff, 75 lecturers, and 297 NCE II students in the three sampled Federal Colleges of Education in North Eastern Nigeria. The sample represents 5% of the entire population as recommended by Gall, Gall and Borg (2007). Gall et al. stated that if the population of a study is between 5000 and 10,000, 5% should be used. Based on the above, since the population of study is 7510, 5% of 7510 is 375 respondents. The, proportionate sampling technique was adopted to select the 375 sampled respondents.

The instrument that was used for data collection in the study was questionnaire designed by the researchers and tagged “impact of utilization of facilities in the Centre of Educational Technology for effective training of Teachers opinion questionnaire”. The questionnaire contained 16 closed ended item constructed using the modified 4-point Likert scale. The instrument to be used for the study was given to three experts to determine its validity. The instrument was subjected to face and content validity. The questionnaire was trial-tested in a pilot study at Adamawa State College of Education Hong, which is not part of the sampled colleges for the study. The reliability of the instrument was determined through Cronbach Alpha reliability procedure. The instrument was administered to all sampled population in the sampled colleges in the study area by the researchers and their research Assistants. The mean score method of data analysis was used to answer research questions.

RESULT AND DISCUSSIONS

Questionnaire Return Rate

Figure 1: Questionnaire Return Rate



Source: Calculated Simple Percentage

From the analysis in table 1 above, it is clear that even though 375 questionnaire were distributed to the sampled population for the study in the three sampled Federal Colleges of Education in North East Geo-Political Zone, it is obvious that only 362 questionnaire (96.5 percent) were returned and well filled while 16 questionnaire (3.5 Percent) were either not returned or not well filled.

Answering the Research Questions

Research Question One: What is the level of availability of facilities in the Centre of Educational Technology facilities for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria?

Descriptive statistics of mean and standard deviation was used to analyse the responses on the the impact of utilization of facilities in the Centre of Educational Technology for effective Teacher training in Colleges of Education in the North-Eastern Geopolitical Zone of Nigeria. The summary is presented in table 1 below:

Table 1 impact of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria.

S/N	ITEMS	Mean	Decision
1	Utilization of facilities in Centres for Education Technology enhance academic performance for students	3.05	Retained
2	Utilization of facilities in Centres for Education Technology foster improved student performance	2.84	Retained
3	Effective utilization of CET facilities can lead to higher teacher retention rates.	2.73	Retained
4	Utilization of facilities in Centres for Education Technology facilitate the development of an improved learning environment.	2.65	Retained
5	Utilization of facilities in Centres for Education Technology promotes a more dynamic and interactive teaching style.	3.01	Retained
6	Utilization of facilities in Centres for Education Technology introduce innovative teaching methods in their classrooms	2.57	Retained
7	Utilization of facilities in Centres for Education Technology has a positive influence on student involvement and educational outcomes.	2.62	Retained
8	Utilization of facilities in Centres for Education Technology help educators to remain informed about the latest developments in education	2.53	Retained
9	Utilization of facilities in Centres for Education Technology leads to greater access to digital resources is associated with enhanced teacher performance and improved student outcomes	2.51	Retained
TOTAL		2.72	Retained

Source: Calculated Mean and Standard Deviation

From the analysis in table 1 above it is clear that with a calculated mean range of 2.51 and 3.05 the respondents agreed with the nine items. On the average the impact of the utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria received an agreed rating from the respondents as indicated with an average mean score of 2.72. This means that: Utilization of facilities in Centres for Education Technology enhance academic performance for students, foster improved student performance, lead to higher teacher retention rates, facilitate the development of an improved learning environment, promotes a more dynamic and interactive teaching style, introduce innovative teaching methods in their classrooms, has a positive influence on student involvement and educational outcomes, help educators to remain informed about the latest developments in education and also leads to greater access to digital resources is associated with enhanced teacher performance and improved student outcomes

Research Question Two: what is the level of adequacy of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria?

Descriptive statistics of mean and standard deviation was used to analyse the responses on the level of Adequacy of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria. The summary is presented in table 2 below:

Table 2: Challenges facing resource availability, adequacy, and utilization in the Centre for Educational Technology for Training Teachers in Colleges of Education in North-East Nigeria.

S/N	ITEMS	Mean	Decision
1	Limited Funding	3.17	Retained
2	Outdated Technology	3.34	Retained
3	Inadequate Infrastructure	3.27	Retained
4	Inadequacy of Inspection	3.14	Retained
5	Lack of Training Opportunities for Lecturers	3.45	Retained
6	Limited Access to Learning Resources	3.24	Retained
7	Population explosion in the school system	3.33	Retained
TOTAL		3.28	Retained

Source: Calculated Mean and Standard Deviation

From the analysis in table 2 above it is clear that with a calculated mean range of 3.14 and 3.45, the respondents agreed with the seven items. On the average the challenges of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria receive a fairly adequate rating from the respondents as indicated with an average mean score of 3.28. This means that Limited Funding, Outdated Technology, Inadequate Infrastructure, Inadequacy of Inspection, Lack of Training Opportunities for Lecturers, Limited Access to Learning Resources and Population explosion in the school system are the challenges of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria

Summary of the Findings

1. From the analysis in table 1 above it is clear that with a calculated mean range of 2.51 and 3.05 the respondents agreed with the nine items. On the average the impact of the utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria received an agreed rating from the respondents as indicated with an average mean score of 2.72.
2. From the analysis in table 2 above it is clear that with a calculated mean range of 3.14 and 3.45, the respondents agreed with the seven items. On the average the challenges of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria receive a fairly adequate rating from the respondents as indicated with an average mean score of 3.28.

Discussion of the Findings

From the analysis in table 1 above it is clear that with a calculated mean range of 2.51 and 3.05 the respondents agreed with the nine items. On the average the impact of the utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria received an agreed rating from the respondents as indicated with an average mean score of 2.72. This means that: Utilization of facilities in Centres for Education Technology enhance academic performance for students, foster improved student performance, lead to higher teacher retention rates, facilitate the development of an improved learning environment, promotes a more dynamic and interactive teaching style, introduce innovative teaching methods in their classrooms, has a positive influence on student involvement and educational outcomes, help educators to remain informed about the latest developments in education and also leads to greater access to digital resources is associated with enhanced teacher performance and improved student outcomes. This finding agreed with the findings of Darling-Hammond et al., (2017), Ingersoll & Strong, (2011), Adedoyin & Soykan, (2020), Adebayo & Adetunji, (2021), NCCE Report, (2022),

From the analysis in table 2 above it is clear that with a calculated mean range of 3.14 and 3.45, the respondents agreed with the seven items. On the average the challenges of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria receive a fairly adequate rating from the respondents as indicated with an average mean score of 3.28. This means that Limited Funding, Outdated Technology, Inadequate Infrastructure, Inadequacy of Inspection, Lack of Training Opportunities for Lecturers, Limited Access to Learning Resources and Population explosion in the school system are the challenges of utilization of facilities in the Centre for Educational Technology for effective Training of Teachers in Colleges of Education in North-East Nigeria. This finding agreed with the findings of Umar & Abubakar, (2021), Okworo and Adie (2017), and Olugbemi, (2015).

Conclusion and Recommendations

The use of resources available at the Centre for Educational Technology (CET) greatly influences the successful training of educators in colleges of education located in North-Eastern Nigeria. This area, marked by distinct socio-economic difficulties and specific educational requirements, gains

considerable advantages from the innovative pedagogical approaches and technological advancements promoted by CET. By improving learning environments, offering professional development opportunities, encouraging collaboration among teachers, and providing access to important resources, CET is instrumental in enhancing the quality of education. Nevertheless, it is crucial to address the current challenges to ensure that these advantages are completely achieved.

Based on the above conclusion, the paper recommends that:

1. The incorporation of educational technology into teacher training programs is imperative for improving the overall quality of education.
2. It is essential to provide educators with access to digital libraries, online courses, and multimedia teaching resources.
3. The establishment of ongoing professional development initiatives centered on educational technology is crucial.
4. Fostering collaborative learning environments within the CET can enhance peer-to-peer learning opportunities among educators.
5. It is essential to invest in infrastructure enhancements at the CET to optimize its effectiveness in teacher training.
6. A comprehensive monitoring and evaluation framework must be established to effectively assess the impact of technology use in teacher training programs.

ACKNOWLEDGEMENTS

We would like to express our deepest gratitude to TETFund Abuja for their generous support and funding of the research project titled “*Availability, Adequacy and Utilization of Facilities in Centre for Educational Technology for Effective Training of Teachers in Colleges of Education in North-Eastern Nigeria*” from where this paper was extracted. Their financial assistance has been instrumental in enabling the successful execution of this study.

REFERENCES

- Adedoyin, O. B., & Soykan, E. (2020). COVID-19 Pandemic and Online Learning: The Challenges and Opportunities. *Interactive Learning Environment*. <https://doi.org/10.1080/10494820.2020.1813180>
- Barakat, B. I., and Shakirudeen, B. A. (2019). Counseling for positive attitudes towards teaching profession: a panacea for quality teacher education and employability in the 21st century. Second national conference of faculty of education, federal university Dutsin-ma held between Mondays 2nd – Friday 6th December 2019 unpublished
- Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective Teacher Professional Development*. Palo Alto: Learning Policy Institute.
- Gall, M., Gall, J., & Borg, R. (2007). *Educational research: An introduction* (8th ed.). New York, NY: Pearson Education.
- Ingersoll, R., & Strong, M. (2011). The Impact of Induction and Mentoring Programs for Beginning Teachers. *Review of Educational Research*, 81, 201-233. <https://doi.org/10.3102/0034654311403323>
- Isiyaku, K. (2007). The training of NCE teachers in Nigeria, how far, how well. *Nigerian Journal of Professional Teachers* (Vol. 2007). Teacher Registration Council of Nigeria
- National Commission for Colleges of Education (2020) NCE new Minimum Standard 2020. NCCE: Abuja
- National Commission of Colleges of Education. (2011). *Contextualization and Piloting of ICT Competency Standards for Teachers in Nigeria Needs Assessment and Situation Analysis Report*. World Bank Publication.
- Ogunyinka, E.K, Okeke, T.I and Adedoyin, R.C, “Teacher education and development in Nigeria: An analysis of reforms, challenges and prospects”, *Education Journal*, 4(3). 111-122. July 2015.
- Okwo, F.A. and Eze, P.I. (2013). *Introduction to Educational Technology*. Enugu: Snaap Press Nigeria Ltd.
- Okworo, G. S., & Adie, P. I. (2017). Educational resource center: A veritable delivery system for effective implementation of distance learning education in a cloud computing environment. *International Journal of Education and Evaluation*, 3(6), 33-45.
- Salami SA (1992). Secondary education program under the new NPE: an assessment based on WAEC SSCE. A paper presented at WAEC monthly seminar. August, 1992.
- Wikimedia, (2008). Evaluation World Foundation Trust. www.Wikimedia.en.org/. Retrieved on 29th February, 2010