

Availability and adequacy of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State Nigeria

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Abstract

The study was undertaken to ascertain the status of availability and adequacy of educational technology facilities in teacher training institutions in Enugu State, Nigeria. The study adopted a quantitative approach and specifically used descriptive survey research design. The population for the study consisted of all the 1,850 teaching staff in the two government owned teacher training institutions in Enugu State, Nigeria. 140 teaching staff that is 70 from each of the two institutions were randomly drawn and used as the study sample. Data for the study were collected using an 18-item Availability Checklist and a 36-item questionnaire titled: Questionnaire on Adequacy of Educational Technology Facilities for Micro Teaching Practicum (QOETF-MTP) The two instruments were developed by the researcher and were validated by three experts. The collected data were analyzed using frequency count, percentage and mean. The findings of the study revealed that: most of the required educational technology facilities were not available and also were not adequately provided in teacher training institutions in Enugu State, Nigeria. Certain factors were revealed to be constraints to the adequate provision of these facilities among which are: poor funding of the education sector, corruption and poor maintenance culture among others.. Recommendations were made based on the findings of the study among which is that education should be appropriately funded and required infrastructure provided in institutions at various levels of education.

Keywords: Micro Teaching, Availability, Adequacy, Educational Technology Facilities and Teacher Training Institutions.

Introduction

Micro teaching is one of the most essential programmes that prospective teachers or teacher-trainees must undertake before the completion of their training. One may begin to wonder what exactly constitutes the difference between micro teaching and teaching practice. In answer to the concern above, both exercises are student-teachers' intern programme designed as a training and diagnostic tools for teacher education. However, micro teaching is different because it provides prospective teachers and professional teacher with opportunities to have immediate and individualized evaluation of their performance with particular emphasis on the effective application of the teaching skills. Teaching skills are those skills that enable teachers increase students' learning, achievement and the ability to apply knowledge. They also enable teachers to be able to effectively convey and explain academic subject matters as well as effectively teach higher order analytical, evaluation, problem solving and communication skills. As a matter of fact, the quality of a teacher is assessed on the teacher's ability to effectively integrate and use teaching skills in facilitating teaching and enhancing learning in order to achieve the required and desired learning outcomes. In teacher education programmes, micro teaching is the platform through which a teacher trainee is drilled on acquiring the teaching skills and also applying the same skills in instructional delivery.

Micro teaching therefore is a teaching technique aimed at preparing a teacher trainee for the real classroom setting. It can also be seen as an innovative method of training wherein a prospective teacher or a teacher trainee conducts a class for a small group of learners for a small period and is intended to enhance the prospective teacher's skills which is done by focusing on a particular teaching skill at a time until mastery of such skill is achieved. Micro teaching has been variously defined by experts. It is defined

as a training technique that provides prospective teachers with an opportunity to improve their teaching skills by receiving immediate feedback from peers and teachers (*igi.global.com*). It is also a scaled down teaching encounter that was developed at the University of Stanford in the mid 1960s and it was expected then to serve three main purposes namely: as a preliminary experience and practice in teaching; as a research vehicle to explore training effects under a controlled and safe condition and environment and as an in-service training instrument for experienced teachers. Micro teaching is also seen as a training strategy for teachers in training as well as professional teachers, during which they practice small amount of teaching skills by conducting a lesson which is limited in size, time and the number of instructional objectives, to their fellow students. The teaching session is usually videotaped so as to be watched and evaluated afterwards by teacher trainees, their peers or classmates and their supervisor(s) (teacher(s)).

From the above definitions, it has been discerned that micro teaching has the following nature or characteristics:

- It is a training technique in teacher education programmes not a teaching technique.
- As the name implies, it is micro or miniaturized in nature because it is scaled down in the sense that the different complexities involved in teaching is taken one at a time. For instance one skill at a time; class size between 5-10 students, lesson duration is between 5-10 minutes and lesson content is reduced to a single concept.
- In micro teaching, feedback is provided on completion of the lesson because it provides the teacher trainee with adequate information about his/her performance during the lesson.
- It is a highly individualized training procedure that permits the imposition of a high degree of control in practicing a particular skill.

From the above nature of Micro teaching, Mangal and Mangal (2009), gave what this writer adopted as an operational definition of micro teaching as a technique or device of imparting training to the inexperienced or experienced teachers for learning the art of teaching by practicing specific skills through a scaled down teaching encounter that is reducing the complexities of real normal teaching in terms of class size, time and content. Micro Teaching has lots of benefits to teacher education programme. Some of these benefits include among others, these few:

- a. Micro teaching exercise creates opportunity for student teachers to put into practice what they have learnt in an enclosed and safe environment.
- b. It creates room for self assessment since the student teacher will be given an opportunity of having a replay of his/her performance during the exercise for self criticisms and to see where he/she has made certain mistakes and then make amends.
- c. It prevents the incident of acquiring skills through trial and error but to perfect and acquire new skills.
- d. It gives the student teacher an opportunity of being constructively criticized by his/her peers and teachers.
- e. Improves attitude of the teacher trainee: One of the objectives of MT is to guide a student teacher towards attaining positive attitude especially when being criticized. Also when feedback is being given by peers and teacher educators, there could be negative feedbacks that are meant to motivate student teachers to strive for better results.

From the above relevance of micro teaching, one would observe that through micro teaching exercise, teacher trainees are given instant feedback on their performance in the course of the micro teaching session. These feedbacks can be gotten from classmates, micro teaching group members, peers, supervisors and most importantly from technological facilities that are expected to be available and utilized in the course of the micro teaching practicum session. These technological tools are meant to be used to cover individual student-teacher's micro teaching session. At the end of each micro teaching session, the student-teachers are expected to replay these technological facilities used for on-the-spot coverage of the trainee's micro teaching session. Be that as it may, the present study is focused on ascertaining the status of availability of these educational technology facilities and the adequacy of the available ones.

Availability according to Kirvan (2025) is the ration of time a system or component is functional compared to the total time it is required or expected to function. It also means the physical presence of something be it information, physical equipment, gadgets and other resources in a particular place. Adequacy on the other hand implies being sufficient in quantity and quality to meet the required needs (Achuba, 2025). Educational technology according to Noorwise (2025) is a systematic application and technological knowledge to the design, implementation and evaluation of the learning process. It involves creating, using and managing appropriate technological processes and resources to improve education outcomes. Educational technology therefore is essentially concerned with finding solutions to problems of teaching and learning through the application of appropriate media or modern technologies especially electronic media and devices. It is these devices that the present paper refers to as educational technology facilities.

There is no over emphasizing the fact that when these facilities are adequately made available and effectively utilized especially in micro teaching practicum, they have the potentials to enable teacher-trainees not only to self evaluate themselves, but also facilitate easy acquisition of the required teaching skills which is the hub of professionalism in classroom activities. Salami as cited in Etesike (2014) observed that adequate provision of facilities and equipment and their proper utilization have always been positively correlated to good performances in examination while poor performances have been blamed on inadequate and ineffective utilization. However, the present paper is focusing on availability and adequacy of these facilities. For effective teacher education in the present digital age in which information and communication technology facilities are impacting on virtually every aspect of human endeavor especially in education process and practice, there is urgent need to re-assess the status of availability and adequacy of these all important educational technological facilities especially in Colleges of Education which are tertiary institutions focused on training professional teachers for primary and junior secondary education. They award the Nigeria certificate in Education (NCE) which is a three-year programme that qualifies its recipients to teach or pursue further studies. (Schooling.org, 2025)

As clearly stated in National Policy on Education of the Federal Republic of Nigeria that no education system may rise above the quality of its teachers, it becomes imperative that teacher training programmes especially micro teaching practices must be dynamic, practical oriented and activity based and this can be achieved through adequate provision of educational technology facilities in teacher training schools especially colleges of education. Educational technology facilities when adequately provided in education processes and activities, especially in the teaching-learning processes, have been established to facilitate teaching and enhance learning. It has also been empirically proven that schools that are richly and

adequately equipped with ICT facilities, achieve better results than those that are poorly equipped. Furthermore, schools with higher e-maturity demonstrate a more rapid positive increase in performance than those with lower levels (Balanskat & Blamire, 2007). Be that as it may, the problem statement of the present study is: are the required educational technological facilities available in Colleges of Education and if available, how adequate are the available facilities for effective micro teaching practice for student-teachers.

A lot of research studies have been carried out on the present topic and other related areas. Time and space can permit just few of such studies to be reviewed here. Mukagihana, Nsanganwimana and Aurah (2020) carried out a study on Biology Instructional Resources availability and extent of utilization in teaching pre-service biology teachers. The study adopted descriptive survey. 3 private universities were selected from those offering education in Rwanda. 82 pre-service biology teachers and 5 biology lecturers were the study sample. Data for the study were collected using questionnaire and observational checklist. Collected data were analyzed using frequency count and percentage. Findings of the study revealed that some instructional resources like classroom, chairs, chalkboard, microscope, laboratories were available while resources such as whiteboard, overhead projectors, and recorders were not available. There is also very low utilization of the available resources. They recommended that those concerned should make adequate provision of these resources and their utilization should be effectively monitored. The reviewed study focused on teaching of pre-service teachers generally but the present study dealt with technological facilities for effective micro teaching practicum.

Muhammed et al.,(2015) carried out a study titled: Availability and Utilization of Micro teaching facilities in the teacher education division of Mohammed Goni College of Legal and Islamic Studies. The study adopted descriptive survey and stratified sampling technique. Study sample was 70 NCE 111 students of the 2014/2015 academic session. Questionnaire and checklist were used for data collection. Collected data were analyzed using SPSS. Findings of the study showed that micro teaching facilities were not adequately available and the level of utilization was quite poor. They recommended that government and concerned institutions should provide these facilities. Also teachers should be equipped with technological literacy to make their work smooth and comparable to the 21st century in teacher training centers.

Etesike (2015) carried out a study titled: Availability, Adequacy and Utilization of Educational Technology resources in classrooms: implications for conflict resolution in Nigeria. 5 research questions guided the study and sample survey design was adopted. The study sample was 75 lecturers randomly selected from 5 colleges of Education in Enugu State, Nigeria. Questionnaire was used for data collection and the collected data were analyzed using frequency count, percentage and mean. Findings of the study revealed that very few educational technology resources were available and the available ones are grossly inadequate and underutilized by lecturers and students. The paper recommended that these resources should be adequately provided and teachers trained on how to effectively utilize these resources for classroom activities.

With an ever increasing reliance and dependence of countries all over the world on information and communication technology facilities to address a wide range of perplexing issues especially in education sector, it becomes imperative to ascertain the status of availability and adequacy of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State

Nigeria. Be that as it may, the main purpose of the present study is to investigate the status of availability and adequacy of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State, Nigeria. In specific terms, the study tried to:

- a. ascertain the available educational technology facilities for micro teaching practicum in teacher training institutions in Enugu State.
- b. find out the adequacy of the available educational technology facilities
- c. ascertain the constraints to the provision of educational technology resources for effective micro teaching practicum in teacher training institutions in Enugu State.

The following research questions were posited and equally guided the study:

- a. what educational technology facilities are available in teacher training institutions for micro teaching practicum?
- b. how adequate are the available facilities?
- c. what are the possible constraints to adequate provision of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State.

3. Research Method

The present study adopted a quantitative approach and specifically used descriptive survey research design. Descriptive survey is described as the research design that deals with determining the characteristics, attributes and features or facts about a given population (Nworgu, 2023). This design is considered appropriate to the present study because it dealt with large data collected from teachers concerning the availability and adequacy of educational technology facilities for effective micro teaching practicum in colleges of education in Enugu State. Three research questions guided the study.

The study was carried out in Enugu State, Nigeria. Enugu State is one of the states that make up the South-East geo-political zone of Nigeria. Enugu State presently is made up of seventeen local government areas. Enugu State has two government owned colleges of education and seven private colleges of education (NCCE Statistical Digest, 2021), however, the present study is focused on government owned colleges of education.

The study population consists of one thousand, eight hundred and fifty teaching staff in the two government owned colleges of education in Enugu State (Personnel Unit of both institutions, 2023). The sample for the study is one hundred and forty lecturers purposively drawn from the two colleges used for the study. Simple random sampling was used to draw 70 lecturers from each of the colleges giving a total of 140 study subjects that form the study sample.

Data for the study were collected through an 18-item Availability Checklist which was meant to collect data on availability of educational technology facilities with a rating scale of Available and Not Available. Also a structured response 36-item questionnaire titled: Questionnaire on Adequacy of Educational Technology Facilities for Micro Teaching Practicum (QOAETF-MTP) was equally used for data collection. The questionnaire was made up of two sections namely A and B. Section A consists of items that elicited respondents' personal data while section B consists of 2 clusters. Cluster 1 has 18 items on adequacy of available educational technology facilities while cluster 2 has 18 items on possible constraints to adequate provision of educational technology facilities for effective micro teaching practicum. The questionnaire which was developed by the researcher, used the four point rating scale of Very Adequate: (4points), Adequate (3points), Inadequate (2points) and Very Inadequate (1point) and Strongly Agree (4 points), Agree (3 points), Disagree (2 points) and Strongly disagree (1 point).

The instruments used for data collection were face validated by three experts: one from Curriculum and Instruction department and two from measurement and evaluation unit of educational psychology department, all of Federal College of Education, Eha-Amufu. The questionnaire was tested for reliability using Cronbach Alpha to determine its internal consistency and dependability. This gave a coefficient index of 0.82. This showed the instrument was reliable and hence was used for the study.

The collected data were analyzed using frequency count and percentage for the observational checklist a frequency count and mean for the items on adequacy and constraints. The decision rule for the study is that any facility that has 60% and above indicates “Available” while any that is below 60% indicates “Not Available”. For the other items in the research question, any facility or item that has a mean rating of 2.50 to 2.99 indicate “Adequate and Agree” while any facility or item that has a mean rating of 3.00 and above indicates “Very adequate and Strongly Agree”. Any facility or item with a mean rating below 2.50 indicates “Not Adequate and Disagreement”.

4. Results

The results of the data analyses are presented in the following tables in line with the research questions formulated for the study.

Research Question 1: what educational technology facilities are available in teacher training institutions for micro teaching practicum?

Table 1. Lecturers’ mean responses on available educational technology facilities available in teacher training institutions for micro teaching practicum

S/N	Educational Technology facilities for Micro teaching Practicum	Avail Freq	%	Not Avail Freq	%	Rmk
1	Micro Teaching Laboratories	140	100	-	-	Available
2	Interactive Whiteboard	80	57	60	43	Not Avai
3	White board	120	86	20	14	Available
4	Overhead projectors	40	28	100	72	Available
5	Virtual Classroom	80	57	60	43	Not Avai
6	Desktops	140	100	-	-	Available
7	Photo Cameras	40	28	100	72	Not Avai
8	Laptops	140	100	-	-	Available
9	Filmstrips	20	14	120	86	Not Avai
10	Motion pictures	30	21	110	79	Not Avai
11	Personal Digital Assistants (PDAs)	10	7	130	93	Not Avai
12	Magnetic Boards	100	72	40	28	Available
13	Video conferencing systems	10	7	130	93	Not Avai
14	Internet Connectivity	10	7	130	93	Not Avai
15	PowerPoint Projectors	20	14	120	86	Not Avai
16	Closed Circuit Television	-	-	140	100	Not Avai
17	Virtual Reality devices	-	-	140	100	Not Avai
18	Digital microphones	-	-	140	100	Not Avai
Grand Availability %:		33%				

Data analysis in Table 1 indicated that in terms of availability of educational technology facilities, out of the 18 listed educational technology facilities, only 6 namely micro teaching laboratories, white boards, over head projectors, computer sets, laptops and magnetic boards, were termed available because they

have 60% and above ratings. The other 12 facilities have below 60% which according to the decision rule were termed not available. Furthermore, with the grand Availability Percentage of 33% which is far below the cut off % of 60%, it could be concluded that educational technology facilities are not available for effective micro teaching practicum in teacher training institutions in Enugu State.

Research Question 2: How adequate are the available educational technology facilities in teacher training institutions for micro teaching practicum?

Table 2. Lecturers' mean responses on adequacy of available educational technology facilities in teacher training institutions for micro teaching practicum

S/N	Educational Technology facilities for Micro teaching Practicum	VA	A	I	VI	Mean	Rmks
1	Micro Teaching Laboratories	30	10	20	80	1.9	NA
2	Interactive Whiteboard	10	10	20	100	1.5	NA
3	White board	80	50	10	-	3.5	VA
4	Overhead projectors	10	10	10	110	1.4	NA
5	Virtual Classroom	-	-	40	100	1.3	NA
6	Desktops	90	20	10	20	3.21	VA
7	Photo Cameras	-	-	10	130	1.1	NA
8	Laptops	90	20	10	10	3.21	VA
9	Filmstrips	10	10	20	100	1.5	NA
10	Motion pictures	-	-	10	130	1.1	NA
11	Personal Digital Assistants (PDAs)	-	-	10	130	1.1	NA
12	Magnetic Boards	70	50	10	10	3.28	VA
13	Video conferencing systems	-	-	30	110	1.21	NA
14	Internet Connectivity	-	10	10	120	1.21	NA
15	PowerPoint Projectors	-	-	20	120	1.14	NA
16	Closed Circuit Television	-	-	-	140	1.0	NA
17	Virtual Reality devices	-	-	10	130	1.07	NA
18	Digital microphone	-	-	50	90	1.35	NA
	Grand Mean	1.73					

Data analysis in Table 2 indicated that in terms of adequacy of available educational technology facilities, out of the 18 listed educational technology facilities, only 4 educational technology facilities are very adequately provided and they are the following: white boards with a mean rating of 3.5, computer sets and laptops with mean ratings of 3.21 respectively and magnetic boards with mean rating of 3.28. The other 14 facilities have mean ratings below 2.50 which is the cut off mean for adequacy. Furthermore, with the grand mean of 1.73 which is far below the cut off mean of 2.50 (adequate), it could be concluded that educational technology facilities are not adequately provided for effective micro teaching practicum in teacher training institutions in Enugu State.

Research Question 3: What are possible constraints to adequate provision of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State?

Table 3. Lecturers' mean responses on possible constraints to adequate provision of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State

S/N	Possible constraints to adequate provision of educational technology facilities	SA	A	D	SD	Mean	Rmk
1	Insufficient Fund	120	20	-	-	3.85	SA
2	School Location	100	10	10	20	3.35	SA

3	Lack of maintenance culture on the part of schools	100	20	10	10	3.50	SA
4	Dearth of enabling infrastructure for effective use of these facilities	120	10	8	2	3.20	SA
5	Lack of ICT skills acquisition on the part of teachers for effective use of these technologies	80	30	10	20	3.21	SA
6	Little or no competence on the part of teachers to use these facilities	80	40	10	10	3.35	SA
7	Lack of awareness on the part of teachers on the imperative of using these facilities for Micro Teaching	30	20	20	70	2.07	D
8	Lack of knowledge on how to use these facilities	30	20	40	50	2.21	D
9	Endemic corruption that has bedeviled every sector of Nigeria Society	110	20	5	5	3.71	SA
10	Under funding of teacher producing institutions of higher learning by government	120	20	-	-	3.85	SA
11	Nonpayment of teachers' salaries and other allowance	120	10	10	-	3.78	SA
12	Lack of job satisfaction on the part of teachers	130	10	-	-	3.92	SA
13	Lack of separate budget for educational technology facilities procurement and utilization	120	20	-	-	3.85	SA
14	Lack of interest on the part of government in education sector	120	20	-	-	3.85	SA
15	Placing more emphasis on paper Certificate with less emphasis on doing it yourself	10	20	10	100	1.57	D
16	Poor funding of education sector	120	20	-	-	3.85	SA
17	Lack of trained expert for maintenance and repair	100	20	10	10	3.50	SA
18	Poor management of available fund by school heads	120	10	4	6	3.74	SA
GRAND MEAN: 3.35							

Data analysis in Table 3 showed that in terms of possible constraints to adequate provision of educational technology facilities for micro teaching practicum, out of the 18 listed items, the respondents strongly agreed with 15 items as possible constraints to adequate provision of these facilities. They are items 1,2,3,4,5,6,9,10, 11, 12, 13, 14, 16, 17 and 18. These items have mean ratings of 3.00 and above which indicates strongly agreed. However, the respondents disagreed with items 7, 8 and 15 with mean ratings below 2.50 which indicate disagreement. Furthermore, with the grand mean of 3.35 which is far above the cut off mean of 2.50 and also within the mean range for strongly agree, it could be concluded that respondents strongly agreed that there are possible factors that constrains adequate provision of educational technology facilities for effective micro teaching practicum in teacher training institutions in Enugu State.

Discussion

The findings based on research question one revealed that most of the educational technology facilities are not available for effective micro teaching practicum in teacher training institutions in Enugu State. The only available educational technology facilities are micro teaching laboratories, white boards, overhead projectors, desktops and laptops. Other educational technology facilities such as interactive whiteboards, virtual classrooms, cameras etc are not available. The findings of the present study are in agreement with Muhammed et al., (2015) and Etesike (2015) that most of the educational technology facilities for effective teacher training in schools are not available.

The findings based on research question two indicated that most educational technology facilities are not adequately provided for effective micro teaching practicum in teacher training institutions in Enugu State. The findings of the study are in agreement with Muhammed, Iya and Yagana (2015) that most educational technology facilities for teaching learning purposes are not adequately provided.

The findings based on research question three showed that there are many factors that are capable of hindering adequate provision of educational technology facilities for effective micro teaching practicum in teacher training institutions. Some of these factors include among others: poor funding, lack of maintenance culture, poor management of facilities and endemic corruption in almost every facet of the society, poor infrastructure and school location. The findings of this study are in agreement with Etesike (2015) and Mukagihana et al., (2020) that some factors exist that hinder adequate provision of educational technology facilities for effective instructional activities in schools.

The above findings have serious implications in teacher education programme in present day digitalized world. Micro teaching is one of the core courses in teaching training and when prospective teachers who are expected to teach at the foundation level of education in any society are poorly trained, it poses a very big problem for such society in terms of national and human development. It is a fact that no nation can develop beyond the abilities and capabilities of its teachers. Education is an instrument per excellence in nation and human development and teachers through the classrooms are key players in nation building process. A weak foundation begets a weak structure.

5. Conclusion

Based on the findings of the present study, it is concluded that most of the required educational technology facilities for effective micro teaching practicum are not available. Such facilities like cameras, video recorders, internet connectivity are not available. Some of the insignificantly available resources are inadequately provided. However certain factors are discovered as being constraints to the provision of these facilities and some of these factors include among others these few: poor funding of education sector, lack of maintenance culture, corruption and dearth of infrastructure to mention these few.

5.1 Recommendation

Based on the findings of the study, the following recommendations are made:

The government agencies, ministries and persons saddled with the responsibility of funding education in Nigeria should do the needful and that is to provide adequate fund for the Nigeria education sector.

The findings of the study showed that there are constraints to the adequate provision of these facilities in teacher training institutions; it therefore becomes imperative that efforts and machineries should be put in motion to address these constraints and get them eradicated so that these educational technology facilities would be adequately provided and used in micro teaching practicum in teacher training institutions in Enugu State in particular and Nigeria in general.

Educational technology facilities should be included as part of the techniques for classroom instructional delivery and activities in teacher training institutions.

To facilitate teacher training programmes, educational technology facilities should be adequately provided and utilized during instructional delivery especially for micro teaching practicum sessions. To

achieve this, schools should be equipped with state of the art ICT facilities/gadgets and micro teaching laboratories.

Electricity supply in Nigeria has become a perennial problem that has defiled all remedies. Government and those concerned should not rest until there is steady and uninterrupted electricity supply in Nigeria especially in schools at whatever level.

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