IDENTIFICATION OF CHALLENGES CONFRONTING MATHEMATICS EDUCATION STUDENT-TEACHERS DURING THE TEACHING PRACTICE PROGRAMME FOR OPTIMUM TEACHER DEVELOPMENT

By:
Onele Theophilus Ikechukwu
oneletiyke82@gmail.com
08127964005,
08067980298

Abstract
This paper ascertained the challenges confronting mathematics education student-teachers during the teaching practice in secondary schools in Ebonyi State. Two research questions guided the study; a survey research design was used for the study. The population of the study comprised 1,529 mathematics education student-teachers who were involved in the 2024/2025 session of the teaching practice programme. Proportionate sampling was used to select 460 mathematics education student-teachers as the sample for the study. The instrument for data collection was a structured questionnaire validated by three experts. A reliability coefficient of 0.79 was obtained using Cronbach's alpha method. Data collected were analyzed using mean scores. Findings of the study revealed that challenges confronting mathematics students teachers during their teaching practice include but not limited to lack of adequate funding, leading to a lack of resources like laboratories and instructional materials as well as shortage of qualified and motivated teachers, especially in rural areas other obstacles involve outdated teaching methods that fail to engage students large class sizes that hinder individual attention and a curriculum that often focuses on note memorization rather than practical skills. It was therefore recommended, among others, that the administration of the teaching practice should provide stipend and decent accommodations to mathematics education student-teachers during the teaching practice.

Keywords: *challenges, student teachers, mathematics education, teaching practice, secondary schools, Ebonyi State.*

Introduction

The need to provide student-teachers with rewarding field experiences that could enhance their pedagogical competences in the teaching profession and bridge the gap between theory and practice gave rise to the introduction of the teaching practice (TP) programme in the education sector. Teaching practice, according to Endley (2024), is the practical use of teaching principles, teaching techniques, and practical exercise of different activities in daily school life by the would – be - teachers. Kyriacou and Stephen (2010) and Ebrahim, Eyadat and Alshammar (2017) defined teaching practices as the process of preparing student-teachers for teaching by practical training.

It could be deduced that teaching practice is a programme where student-teachers gain practical classroom and teaching experiences. It could therefore be seen as an apprenticeship programme where student-teachers gain practical and professional experiences to bridge the gap between theory and practice under the direction of the supervisor. This entails that the teaching practice programme is more about the utilization of knowledge than the acquisition of knowledge.

According to the National Commission for College of Education (NCCE, 2015), the main aim of teaching practice is to provide planned and carefully supervised learning activities which allow the teacher trainees not only to demonstrate but also to improve their resourcefulness as teachers to be. Specifically, the objectives of teaching practice are:

1. To provide student-teachers the opportunity to learn the art of teaching in actual classroom situations under the guidance of an experienced cooperating teacher.
2. To provide student-teachers the opportunity to demonstrate in the real classroom situation the mastery of teaching the subject matter and the methodology of facilitating it to learners.
3. To provide professional development and foster a positive attitude to teaching in student-teachers.
4. To assess the extent to which student-teachers satisfy the requirements for the award of the certificate they are pursuing.
5. To enable the School of Education to evaluate the adequacy or otherwise of the practical aspects of the teacher education programme.

Teaching practice is carried out mostly in teacher education programmes, such as faculties of education in the universities, colleges of education, schools of education in poly techniques and national teachers institute, national Institution for Nigerian Languages (NINLAN) and national mathematical centre (NMC) (Akpan, Ntukidem, Ekpiken & Etor, 2009). No teacher education programme can be said to be complete without an effective teaching practice programme. According to Obidile and Eze (2018), the essence of teaching is to bring about the desired competencies in the behavior of learners.

Teaching practice is geared towards equipping the student teacher with the necessary competencies needed to function effectively in the classroom (Josoh, 2011). It helps student-teachers to understand the principles of learning (Sarcoban, 2010). Teaching practice helps to produce future teachers who are professionally skilled and committed to their profession (Al-Momani, 2016). It acquaints student-teachers with the practical knowledge of the teaching and learning process, which includes lesson plan preparation, presentation, class management, communication skills, and evaluation (Koross, 2016). Teaching practice helps to familiarize student-teachers with the real school environment as their future workplace (Teachers Registration Council of Nigeria, TRCN, 2007). Teaching practice acquaints the student-teachers with the professional competencies that could enhance their effectiveness and expertise in the teaching profession. Teaching practice helps to bring about the required pedagogical competencies needed in the student teachers. It helps student-teachers to develop skills in the use of strategies and methods of teaching.

It creates an opportunity for student-teachers to interact with their environment. Through the teaching practice, student-teachers develop the inter personal relationship with the administrators, teachers, parents, and students. Teaching practice allows evaluating the student teacher's potential as a teacher. According to Ali (2010), the term teaching practice has five major aspects. They include student-teachers as the active participants of the programme, university supervisor as experts to help student-teachers before, during, and after the teaching practice, cooperating teachers as experts helping student-teachers in their schools; students as receivers of knowledge that student-teachers present during their teaching practice; and educational contexts and system that student-teachers are required for the accomplishment of their teaching requirements.

In Nigeria, the teaching practice programme lasts from three months to one year, depending on the mode of study; student-teachers are sent to schools to practice what they have learnt.

They are expected to be mentored by the in-service teachers who should provide them with the necessary assistance to make them feel engaged, empowered and even challenged. During the period of the teaching practice, supervisors are usually sent to assess the student teachers' performance in relation to the pre-established criteria.

It is therefore expected that upon completion of the teaching practice, student-teachers should have gained knowledge and experiences about the classroom activities which could enhance their competencies in the teaching profession. The experiences gained during the teaching practice could make them develop either a positive or negative attitude towards the teaching profession. Negative experiences could be developed as a result of several challenges confronting student-teachers, not being fully involved in the teaching practice programme in spite of its benefits.

Some of the student-teachers (Science Education Student-teachers inclusive) connive with the principals and appear at the assigned school only when the supervisors would assess them just to obtain their scores. To this kind of student teacher, teaching practice is a compulsory programme one must undertake to obtain a certificate in education. This kind of attitude implies that they are depriving themselves of the competencies which they could have acquired if fully involved in the teaching practice programme. Some of the supervisors even worsen the situation by not involving themselves in the actual supervision of the student teachers. They give orders to student-teachers to submit their offices for assessment without visiting the student-teachers in their assigned schools. Although this might be a result of non-payment of the teaching practice honorarium, by the case might be, these activities hinder the achievement of the goals of the teaching practice.

Student-teachers are expected to fully participate in the teaching practice until the expiration of the programme. Mathematics education student-teachers were chosen as respondents for the study because most of the institutions in the area of the study have science education either as a programme in a department or an option of a programme in a department.

Mathematics education student-teachers are the trainee teachers who have the official permission to be involved in the actual teaching practice programme. They are the student of the mathematics education programme.

Mathematics Education is a sub-set of science education.

Although the experiences gathered during the teaching practice might be stressful, as Ali (2010) opined, it is a worthwhile experience. It is therefore important that the teaching practice programme in developing countries, especially in Algeria, should be made attractive to student teachers. This could be done by eradicating the challenges facing student-teachers during the teaching practice programme. However, these challenges could only be eliminated or reduced when they are properly identified and adequate mechanism put in place and implemented. Hence, the need to ascertain the challenges confronting mathematics Education student-teachers during the teaching practice in secondary schools in Ebonyi State.

This study is important as scholars are currently addressing the issues in different aspects of teacher education programmes with a view to making meaningful contributions that would raise the standard of education in the country.

Purpose of the study

The main purpose of the study is to ascertain the challenges confronting mathematics education student-teachers during the teaching practice in secondary schools in Ebonyi State. Specifically, the study ascertained, in the opinion of mathematics education student-teachers:

1. The challenges they encounter during the teaching practice programme in secondary schools.
2. Ways through which the challenges could be eradicated.

Research Questions

The following research questions guided the study;

1. What are the perceived challenges confronting mathematics education student-teachers during the teaching practice?
2. What are the ways through which the challenges could be eradicated?

Theoretical Framework

The theoretical framework used in this study was the pragmatism theory on education. The theory was developed by John Dewely in 1938. Pragmatism theory on education states that learning should be done through a hands-on approach. This implies that learners should be provided with learning activities and experiences that use and practicable. This theory is related to this study in that when student-teachers are exposed to the teaching practice, it helps them to acquire practical experiences required to bridge the gap between theory and practice in the education sector, as suggested by Dewey.

Method

A survey research design was used for the study. Ebonyi State was the area of the study.

The state was chosen because it has several higher institutions that offer mathematics education and could produce mathematics education student-teachers for the teaching practice. The population of the study consisted of 1,529 mathematics education student-teachers from the

tertiary institutions in Ebonyi State who were involved in the 2023/2024 academic session of the teaching practice programme.

Proportionate sampling was used to select 460 mathematics education student-teachers for the study. Ninety-two mathematics education student-teachers were selected from each of the four institutions used for the study. The instrument for data collection was a structured questionnaire titled "perceived challenges confronting mathematics education student-teachers during the teaching practice "(PCCMESTTP)" the instrument consisted of two sections, A and B. Section A consisted of the personal data of the respondents, while Section B elicited information that was used to answer the research questions. A four–point rating scale of strongly agree (SA= ≥ 4), agree (A = ≥ 3), disagree (D = ≥ 2), and strongly disagree (SD = > 1) was used. The instrument was validated by three experts, two experts from the Department of Measurement and Evaluation and one from the Department of Administration and Planning, all in Ebonyi State University (EBSU), Abakaliki.

Their input was used to provide the final copy of the questionnaire.

The reliability of the instrument was ascertained using Cronbach's alpha method. In checking for the reliability, 45 mathematics education student-teachers from Enugu State who were not part of the population were used, and the reliability coefficient of 0.79 was obtained. Four hundred and sixty copies of the questionnaire were distributed using the on-the-spot method by the researchers with the help of two research assistants and were collected back immediately. Out of this number distributed, 445 copies of the questionnaire were collected back, and only 415 copies were properly filled and used for the data analysis. Data collected were analyzed using mean scores, and a criterion mean score of ≥ 2.50 was used as the acceptable mean score.

Findings of the Study

Table 1: Respondents' mean ratings on the challenges confronting mathematics education student-teachers during the teaching practice.

N = 415

S/N	CHALLENGES	MEAN	REMARKS
1	Inadequate provision of modern instructional technologies	4.70	5A
2	Inadequate duration for the teaching practice	4.50	5A
3	Indecent accommodation	4.60	5A
4	Lack of financial support	4.80	5A
5	Non-provision of transportation facilities	4.20	5A
6	Poor supervision	3.50	A

7	Large number of students in the classroom	3.50	A
8	Problem of dealing with students' disruptive behavior	3.20	A
9	Difficulty in transferring knowledge during classroom lessons	1.70	5D
10	Non-involvement of student-teachers in the school activities	2.20	D
11	Heavy workload	3.30	A
12	Not being mentored by the in–service teachers	2.30	D
13	Improper placement of mathematics education student-teachers to classes by principals	3.50	A
14	School principals not interested in accepting mathematics education student-teachers in school	2.20	D
15	School principals' interference in student teachers' activities	2.30	D

Data in Table 1 show that from the fifteen items listed, ten items have the accepted mean ratings ranging from 3.20-4.80. Five items have the mean ratings ranging from 1.70-2.30.
This indicates that ten items were agreed as challenges confronting mathematics education student-teachers during the teaching practice, and the other five items were not agreed as Challenges facing mathematics education student-teachers during the teaching practice.

Table 2: Respondents' mean ratings on the ways through which the challenges confronting mathematics education student-teachers during the teaching practice could be eradicated.
N = 415

S/N	WAYS TO ERADICATE THE CHALLENGES	MEAN	REMARKS
1	Through adequate provision of: modern instructional technology	4.60	5A
2	Decent accommodation	4.80	5A
3	Financial support	4.70	5A
4	Transportation facilities	4.40	5A
5	Maintaining stipulated number of students in the classroom	3.80	A
6	Extension of the duration for the teaching practice programme	4.60	5A
7	Effective supervision	3.70	A
8	Effective corrective measures for erring students	4.50	A
9	Appropriate workload	4.20	A

10	Proper placement of mathematics education student-teachers to classes by principals	4.70	A

Data in Table 2 show that from the ten items listed, they were all agreed by the respondents as ways to tackle the challenges confronting mathematics education student-teachers during the teaching practice, with the mean ratings ranging from 3.70-4.80.

Discussion of Findings

Findings from the study revealed that mathematics education student-teachers were faced with several challenges during the teaching practice in secondary schools in Ebonyi State, Nigeria, including dealing with disruptive behavior of the students, heavy workload, and improper placement of mathematics education student-teachers to class by the principals.

These are in line with the studies of Obidile J. I and Ikpat N.H, (2017), Ali (2010), Foncha, Abongdia and Adu (2015); Al-Momani (2016); Koross (2016); Ebrahim Eyadat and Alshammari (2017), which found the listed challenges facing student-teachers during their teaching practice in different countries such as Turkey, South Africa, Saudi Arabia, Kenya and Abia respectively. Furthermore, lack of financial support and non-provision of transport facilities were also agreed as challenges facing mathematics education student-teachers during the teaching practice in Ebonyi State.

However, the improper placement of mathematics education student-teachers to classes by principals, which was agreed as one of the challenges facing mathematics education student-teachers during the teaching practice, could be a result of a shortage of staff, which is usually found in so many secondary schools in the state. This could have made the principals assign mathematics education student-teachers to positions where there were vacancies, which might not be in line with their area of specialization, and this act disrupts the achievement of the teaching practice goals.

Findings from table 2 revealed that the challenges confronting mathematics education student teachers could be eradicated through adequate provision of modern instructional technologies, adequate provision of decent accommodation, adequate provision of financial support, adequate provision of transportation facilities, maintaining stipulated number of students in the classroom, extension of the duration for the teaching practice programme, effective supervision, effective corrective measures for erring students, appropriate workload and proper placement of mathematics education student-teachers to classes by principals. Adequate provision of modern instructional technologies must be made in schools since their application is needed in today's teaching and learning processes to enhance the competencies acquired by students which they would use in the field of work. Modern instructional technologies should therefore be adequately provided for teachers' utilization in the classroom.

Conclusion

It is therefore concluded that mathematics education student-teachers in Ebonyi State are faced with challenges ranging from student-related problems, institution-related problems, supervision-related problems, and economic-related problems during the teaching practice programme.

Recommendation

Based on the findings of the study, it was recommended that:

i. Administrations of the teaching practice should provide stipend to mathematics education student-teachers during the teaching practice.
ii. Teaching practice supervisors' forms should be given to the principals to help the teaching committee ascertain those supervisors that could not visit the assigned schools.
iii. Supervisors who are not visiting the assigned schools should not be assigned to supervise the student teachers.
iv. Teaching practice honorarium should be periodically reviewed and promptly paid to the teaching practice supervisors to encourage effective supervision.
v. The duration for the teaching practice should be extended to enhance the teaching practice programme's effectiveness.
vi. Decent accommodations should be provided by the principals for mathematics education student-teachers to enhance their safety during the teaching practice.
vii. Proper placement of mathematics education student-teachers to classes should be made by the principals during the teaching practice programme to enhance the achievement of the teaching practice goals.

References

Obidile J.I and Ikpat N. H (2019): Challenges confronting business education student-teachers during the teaching practice programme: Unizik Journal, Vol.6. Issue I. October, 2019. 236-245.

Ali, M. (2010); Self-reported problems of pre-service EFL teachers throughout teaching practice. Anadolu University Journal of Social Sciences 10 (2), 199-226.

Akpan, C.P., Ntukidem, P. J., Ekpiken, W., & Etor, R. (2009). The challenges of teacher education in Nigeria. International journal of internet education 169-178.

Al-Momani, F. (2016). Challenge of practicum at college of education: supervisors, students-teachers' perspective. International Journal of Novel Research in humanity and social sciences 3(3), 45-52.

Dewey, J, 1938. Experience and education. New York: Collier

Ebrahim, A, Eyadat, W, & Alshammari, F (2017). Challenges in teaching practice at the college of education based on the perceptions of preservice teachers: the case for Kuwait University Educational Review 49(3), 250-260.

Endeley, M. N. (2014). Teaching practice in Cameroon: the effectiveness of the University of Buea model and implications for quality.

Australian journal of teacher education 39 (11); 4-58. National Commission for Colleges of Education (NCCE, 2015). Nigerian certificate in education (NCE) minimum education standards: Abuja: National commission for colleges of education.

Foncha, J. W, Abongdia, J. A & Adu, E.O (2015) Challenges encountered by student-teachers in teaching English language during teaching practice in East London, South Africa, International Journal of Educational Sciences 9(2), 127-134.

Josoh, Z. (2011). Teaching practicum student teachers' perspectives, University of Zain Alabidin Journal, Malaysia 865-874.

Koross, R. (2015). The student-teachers' experiences during teaching practice and its impact on their perception of the teaching profession. Institute of research advances international journal of education and multidisciplinary studies 5(2), 76-85.

Kyriacou, C. & Stephens, P. (2010). Student teachers' concerns during teaching practice, Evaluation & Research in Education 1(1), 18-31.

Obidile, J. I & Eze, P. C. (2018), perceived effectiveness of instructional strategies for teaching business studies in secondary schools in Anambra State. UNIZIK Journal of Education Graduate 5(1), 34-40.