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IMPACT OF TEACHING PRACTICE ON PROFESSIONAL DEVELOPMENT OF BIOLOGY EDUCATION STUDENTS IN FACULTY OF EDUCATION, KADUNA STATE UNIVERSITY.

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Abstract

This study investigated "Impact of teaching practice on professional development of biology education student in kaduna state university" the study has two research objectives, answered two research questions and tested two null hypotheses. The research design of the study is survey design. The sample for the study comprised of all 300 level biology education student at faculty of education, kaduna state university. Data were collected through classroom supervision, lesson plans/notes, teaching practice assessment form and principal/head teachers report. Research questions were answered using descriptive statistics and null hypotheses were tested at $p \leq 0.05$ level of significance using Pearson Product Moment Correlation. Results revealed significant relationship between teaching practice and professional development of biology education students. There is also a significant relationship between teaching practice and biology student confidence and teaching effectiveness. From the findings of the study, it was recommended among others, the need for proper attention should be given to the classroom management by the student teachers in order to achieve the specific objectives at the end of the lesson in the classroom

Keywords: Biology Education, Teaching Practice, Professional Development, Kaduna State University

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Introduction

The effectiveness of biology teaching in schools is largely dependent on the competence of the teachers, which can be enhanced through rigorous and well-supervised teaching practice programs (Adegoke, 2013). In the context of senior secondary schools, particularly in Kaduna State, Nigeria, the effectiveness of teaching practice is crucial for the development of competent biology teachers. Biology, being a science subject that requires both conceptual understanding and practical application, presents unique challenges and opportunities for teaching and learning. Effective teaching practice in biology not only enhance students' comprehension of complex concepts but also foster their interest and engagement in the subject (Smith, 2019).

Teaching practice is an essential component of teacher education programs worldwide, providing student with the opportunity to apply theoretical knowledge in real classroom settings. It is during this period that student teachers transition from being learners of teaching to becoming practitioners, gaining hands-on experience in managing a classroom, delivering lessons, and engaging with students. The experience is designed to prepare future teachers for the challenges of the teaching profession, equipping them with the necessary skills, confidence, and practical knowledge to effectively teach their subjects (Muhammad, 2017).It gives student teachers a chance to see what teaching is really like and take part in professional events in the education field (Adeniyi, 2017). The teaching practice activity also helps students become more familiar with a range of teaching materials and tools, as well as builds their professional personality in the teaching and learning process (Aliyu, 2020).Students can put what they've learned into practice in the classroom through teaching practice. Students' experience as teachers is a big part of getting them ready for their future teaching jobs.

The teaching practice experience is particularly important for student teachers specializing in biology, as it provides them with the opportunity to develop pedagogical skills tailored to the subject. Teaching biology involves not only imparting theoretical knowledge but also demonstrating practical skills in laboratory settings. This dual aspect of teaching requires student teachers to be proficient in both instructional and practical teaching methods. Therefore, the impact of teaching practice on professional development and ability to facilitate effective learning

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among students is significant. This experiential learning phase is designed to help student teachers develop the skills, confidence, and professionalism necessary to succeed in their teaching careers (Aliyu, 2020).

In Nigeria, where education is undergoing significant reform and development, the quality of teacher training programs is critical. Kaduna State, a region with a diverse educational landscape, provides a unique setting for examining the impact of teaching practice on professional development of biology education students in kaduna state university.

OBJECTIVES OF THE STUDY

The objectives of the study are:

i. To find out the impact of teaching practice on the professional development of biology education students.
ii. To ascertain how teaching practice influences biology education student's Confidence and effectiveness in delivering biology lessons.

RESEARCH QUESTIONS

The study will be guided by the following research questions:

i. How does teaching practice affect the professional development of biology education students
ii. What impact does teaching practice have on biology education students' confidence and teaching effectiveness

RESEARCH HYPOTHESES

i. There is no significant relationship between teaching practice and professional development of biology education students
ii. There is no significant relationship between teaching practice and student teachers' confidence and teaching effectiveness

METHODOLOGY

This study adopts a survey design where biology education students are supervised regularly by their lecturers in their various assigned schools. Students are been observed during their teachings by supervisors in the classroom. The population of the study comprised all 300level undergraduate Biology education students. The sample comprised of 59 Biology education students studying biology education at Kaduna State University, Faculty of Education, Kakuri Campus (2023/2024) who are undergoing teaching practice exercise. Data for the research were collected through classroom observations, lesson plans/note, teaching practice assessment form and principals/head teachers report from the assigned schools.

RESULTS

The data collected from the research was analyzed using the statistical package of social science (SPSS) at $P \leq 0.05$ level of significance using Person Product Moment Correlation

ANSWERING RESEARCH QUESTIONS

Research Question One: How does teaching practice affect the professional development of biology education student?

TABLE 1: IMPACT OF TEACHING PRACTICE ON BIOLOGY EDUCATION STUDENT PROFESSIONAL DEVELOPMENT

S/No	Items Statement	n	Mean
1	Introduction	75	4.08
2	Statement of Objectives	75	4.33
3	Subject Matter Knowledge	75	5.30
4	Pedagogical Content Knowledge	75	4.93
5	Active learner participation	75	5.10
6	Equity and Inclusivity	75	5.00
7	Class Management/Control	75	4.50

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Result from Table1 shows the impact of teaching practice experience on biology education student in teaching biology at public senior secondary schools in Kaduna State. A mean score of 4.08 suggests that teaching practice make majority of biology education student to start their lessons with attention grabbing so as to spark curiosity and connect their students with the topics. Some of them linked the new topic to what the student already knows. A mean score of 4.33 indicates that teaching practice influence biology education students to clearly state learning objective. Biology education students let their student know what they will learn and why it matters. A mean score of 5.30 indicates that teaching practice enable biology education students have strong subject matter knowledge as they explain biological concepts correctly and clearly, avoiding misconceptions and allowing them to breakdown content in a way that suits different learning levels. A mean score of 4.93 suggests that teaching practice influence biology education students to use different methodologies to meet diverse student needs, abilities and learning style. They make biology lessons interactive and related to real life. A mean score of 5.10 indicates that teaching practice influence biology education student to actively engage learners in the learning process and become curious about what they are learning. It also enhanced collaboration among students. A mean score of 5.00 indicates that regardless of background, ability and identity, student had equal access to learning opportunities and feel valued and supported in the classroom. A mean score of 4.50 indicated that teaching practice enable biology education students to effectively manage classrooms as there was no disruptions. This kept student on task and motivated.

Research Question Two: What impact does teaching practice have on biology education student confidence and teaching effectiveness?

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TABLE2: IMPACT OF TEACHING PRACTICE ON BIOLOGY EDUCATION STUDENT CONFIDENCE AND TEACHING EFFECTIVENESS.

S/No	Items Statement	n	Mean
1	Teachers Personality	75	4.61
2	Teachers Composure	75	5.57
3	Clarity/Audibility	75	5.54
4	Language Fluency	75	4.30
5	Sustainability	75	5.54
6	Attainment of Stated Objectives	75	4.90
7	Lesson Assessment	75	5.00

Result from Table 2 shows the mean score of 4.61 which suggests that teaching practice has impact on majority of biology education student to be passionate, approachable, confident, patient, empathetic, open minded and enthusiastic in terms of their personality as they encourage their student to ask questions and express ideas without fear. A mean score of 5.57 indicates that teaching practice has impact on biology education students to maintain a positive learning environment by staying calm and composed during their lessons. This kept student focused and motivated during lessons. A mean score of 5.54 indicates that teaching practice has positive impact on biology education student to speak to their student clearly and audible so as to maintain student attention and encourage participation. A mean score of 4.30 suggests that teaching practice has impact on biology education student to express idea smoothly, accurately and confidently in language fluency. A mean score of 5.54 indicates that teaching practice has impact on biology education student skills of integrating sustainability into biology lessons and activities. A mean score of 4.90 suggest that biology education student stated objectives are met as their students demonstrate better understanding, retain more information and succeeded in assessment. A mean score of 5.00 indicated that teaching practice has a positive impact on biology education student lesson assessments as their students have understood and achieved the lesson objectives. It also guides teachers in evaluating the effectiveness of their instructional methods and materials, allowing for necessary adjustments to improve future lessons.

TESTING HYPOTHESES

To test for hypotheses, Pearson Product Moment Correlation was used for data analysis. The hypotheses was tested at P≤0.05 level of significance.

HYPOTHESIS One: There is no significant relationship between teaching practice and professional development of biology education student in biology.

Table 3: Pearson Product Moment Correlation Analysis of Relationship between Teaching Practice and Professional Development of Biology Education Student

S/n	Variable	n	Mean	SD	MD	P-value
1	Teaching practice	75	45	.40	48	.64
					2.13	0.61
2	Professional development of biology education student in biology	75	43	.27	28	.98

Significant at p≤ 0.05 level of significance

Results from table 3 indicate that the calculated p-value of 0.61 is greater than P≤0.05 level of significance. The null hypothesis which state that there is no significant relationship between teaching practice and professional development of biology education student in biology is there by rejected. Hence, there is significant relationship between teaching practice and professional development of biology education student in biology.

HYPOTHESIS Two: There is no significant relation between teaching practice and biology education student confidence and teaching effectiveness in biology.

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Table 4 Pearson Product Moment of Correlation Analysis of Relationship between Teaching Practice and Biology Education Student Confidence and Teaching Effectiveness

S/n	Variable	n	Mean	SD	DF	p-value
1	Teaching practice	30	45	.40	48	.64
					2.01	0.71
2	Biology Education Student confidence and teaching effectiveness	30	47	.41	49	.12

Significant at $p \leq 0.05$ level of significance

The result from table 4 indicate that the p-value of 0.71 is greater than the $p \leq 0.05$ level of significance. Therefore, the null hypothesis with stated that there is no significance relation between teaching practice and biology education student confidence and teaching effectiveness in biology is hereby rejected Hence, there is significant relationship between teaching practice and biology education student confidence and teaching effectiveness in biology.

CONCLUSION

As a result of the findings in this study, it could be concluded that teaching practice is a vital component of teacher education, particularly for biology, a subject that integrates theoretical knowledge with practical application. The experience significantly improves biology education student professional development, confidence and teaching effectiveness, leading to positive academic outcomes among students.

RECOMMENDATIONS

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

i. Biology education student should be allowed to teach only subject of their area of specialization which will lead to mastering of the subject matter, effective utilization of instructional material and competency in lesson delivery during their teaching practice.

ii. The government should provide financial assistance for biology education student which will help them to afford accommodation, instructional materials and transportation during their teaching practice

iii. The government should endeavour to ensure those teaching practice biology education students are paid as those students who go for industrial attachment SIWES.

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