

**INFLUENCE OF ON-THE-JOB TRAINING OF BEGINNING TEACHERS (NOVICE)
ON STUDENTS' ACHIEVEMENT IN MATHEMATICS AT SENIOR SECONDARY
SCHOOLS IN DELTA STATE**

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Abstract

The study used a correlational survey design with a population of 1,421 teachers to assess the influence of new teachers' on-the-job training on students' mathematics achievement at senior secondary schools in Delta State. 370 teachers who were sampled using the stratified random sampling technique took part in the study. Data collection was carried out via a teacher questionnaire. The first part contained the demographic variables. The second part contained ten items which measured teachers' content knowledge of the subject. The third part contained thirty items which measured utilisation of resources and the fourth part contained ten items which measured teachers' classroom management. Three expert opinions from the Department of Science Education and Measurement and Evaluation were used to validate the instrument. The data received from the respondents was examined using Pearson product moment correlation at a significance level of 0.05. The findings revealed a strong positive correlation between teachers' subject-matter knowledge, use of instructional resources and classroom management as a result of on-the-job training and students' mathematics achievement. Therefore, it was recommended that the Delta State government prioritise on-the-job training for mathematics teachers in order to improve their subject-matter knowledge, use of instructional resources and classroom management.

Keywords: Training, Knowledge of Subject Matter, Classroom Management, Use of Resources, Academic Achievement

Introduction

As mentors and role models, teachers play a crucial part in helping students develop their creativity. They are the largest and most significant contributors to the educational system, impacting the calibre of educational outcomes. Since what students learn depends on their teachers' effectiveness, teachers must set a good example for their students and be successful teachers. Teachers' effectiveness is determined by their knowledge, character traits and behavioural expressions that help pupils meet the necessary learning objectives. The teacher encourages students to acquire useful knowledge and abilities, and the formation of socially acceptable attitudes for their present and future development. This could be the reason why teachers are thought to have the greatest impact on student's lives and society at large.

Iloabuchi, Abraham and Afangideh (2016) claim that a teacher is a credentialed person who aids learning in a classroom context to achieve certain educational goals. Teachers can be classified as experienced and inexperienced teachers depending on the number of years, they have spent on the teaching service. Experienced teachers are those who have been in the classroom for more than five years. Teachers with less than five years of experience in the classroom are considered inexperienced. Beginning teachers could include inexperienced teachers. Beginning teachers, often known as novice teachers, are newly hired, newly trained teachers. The teacher instructs the students and works with them to develop particular abilities and attitudes as well as the necessary changes in conduct. Teachers with a passion for their topics and the capacity to communicate that passion to their students, as well as solid knowledge, outstanding communication, and interpersonal skills, are essential for a nation's social and economic success. An excellent teacher contributes to students' overall academic, emotional,

research, economic, and cultural development in addition to instruction. Therefore, the job performance of the teacher is vital for the attainment of the educational goals in any country.

Teachers' job performance encompasses all of the activities carried out by the teacher in order to accomplish the desired impacts on students. A teacher's job performance is measured by how much they contribute to the overall management of the school in order to meet the desired objectives and goals of the institution. In other words, achievement of school goals is what the job performance of the teacher is all about. However, observation has revealed that teachers' dedication to their duties in the classroom is no longer a reflection of the ethics of teaching profession. Teachers have had an unwholesome attitude toward their obligations in recent years. They arrive late for class, are unkind to fellow teachers, and trade at the expense of education. They consistently cause setbacks in the achievement of educational goals as well as in the type of education given to students because they teach with a lack of subject matter knowledge, fail to give students regular assessments, fail to maintain accurate records of student performance and display a lack of commitment to their duties.

According to Bada, Ariffin and Nordin (2020), stakeholders frequently complain about the state of secondary education in Nigeria, which is deteriorating and may be due to the teachers' inefficient work performance. The poor performance of public-school teachers, particularly in Delta State, is reflected in the behaviour of the elites, who refuse to send their children or wards to public schools, preferring instead to send them to private schools, despite the fact that most private schools employ less qualified and experienced teachers (in terms of years of experience) and less on-the-job training than public schools and even pay their teachers less than public schools. This could explain why many Nigerians choose not to enrol their children in public schools, according to Nakpodia (2011), as those who graduate from them are

more likely to be illiterate. More private schools are opening as a result of public-school teachers failing to meet their responsibilities, despite the fact that they are better qualified than those in private schools.

There are several explanations for why teachers perform poorly on the job including; absenteeism, truancy, negligence of duty, and lack of training for professional development (Asiyai, 2017). However, of interest to the present study is the influence of training in the form of mentoring on beginning teachers' job performance. One way for new teachers to get the assistance they need as they grow during their initial years in the profession of teaching is through mentorship. A popular method for fostering both personal and professional growth is mentoring. Mentorship is one of the most effective ways to impart knowledge and give people the chance to acquire the skills they need to operate at a more senior level (Odimmega, Udemba & Obiekwe, 2021). It provides professional growth in a less demanding environment. The provision of one-on-one support to beginning teachers in schools, often by seasoned veterans, during the first year of their professional practising as a teacher is also referred to as mentoring. A connection of continual support, cooperation, and the acquisition of information and skills that result in better teaching methods is fostered by teacher mentoring. In a supportive connection with the new teacher, the mentor acts as an example, facilitator, coach, and advisor and shares knowledge and experiences with them. Through workshops for teacher professional development, teacher mentoring initiatives have recently risen to prominence as a major method of teacher introduction.

Beginning teachers are a strong workforce that can assist a school's future growth. A teacher in a public school who has been in the classroom for less than five full academic years is referred to as a beginning teacher. Because they are new to the teaching profession and the

school, professional development through mentoring is an effective ways to orient beginning teachers to the learning community and its culture. Giving beginning teachers a welcoming environment will aid in keeping the top instructors in the classroom. Principals play a big part in helping beginning teachers get into the teaching profession by working with them. Less experienced teachers will benefit from mentorship as they get more familiar with the practical aspects of teaching. Teacher mentorship helps new teachers be more effective and stay in the profession. Teacher mentoring significantly alters the educational system for the better. It is critical to keep in mind, according to Uche (2018), that teacher mentoring helps the mentee develop professional competence and confidence through the cycle of observation, evaluation, practise and assessment.

A trained teacher will probably do better than an untrained one. According to Emechebe (2019), teacher mentoring is a programme that should be implemented if the educational system wants to have well-developed teachers. Lankua and Scandura (2014) outlined the roles and responsibilities of monitoring, noting that mentors provide career-enhancing services like sponsorship and coaching, facilitating exposure and visibility, and providing challenging work or protection, all of which help the protégé establish a role within the organisation, learn the roles, and prepare for advancement in the modelling. Mentors also provide counselling, affirmation, and friendship, all of which help the protégé.

Considering the aforementioned viewpoints, it would seem that professional development is most effective when it is intended to help teachers improve in areas of their work that actually matter to students, when those areas targeted for observation and improvement are clearly defined, and when all participants agree that the targets of the observation are legitimate goals to work towards. One method to enhance the professional growth of new teachers that appears to be

employed frequently is mentoring. To bring public secondary school teachers up to par, they must get ongoing professional development and assistance. The overarching goal of mentoring is to meet both the emotional and professional requirements of beginning teachers as well as the needs of their students in order to enhance teaching and learning. However, there is a need for continual professional development in mathematics instruction because all teachers must adapt to changes in a changing environment. The major objective of this study is to ascertain how teachers' on-the-job training affects students' mathematics achievement in secondary schools in Delta State.

Statement of the Problem

Beginning teachers have a lot of difficulties teaching mathematics during their classroom practise in schools based on the researchers' observation. Reality shock and an unexpected feeling of loneliness at work characterise their first encounter in the classroom. While teachers in secondary schools engage with students frequently, their job is typically completed independently of their colleagues. For rookie mathematics teachers with little to no teaching experience, this solitude can be quite challenging. The demands of daily instruction, creating lesson notes, student discipline and motivation, large teaching loads, and the utilisation of instructional materials are other areas of difficulty. The early years of teaching are a challenging and formative period in learning to be a teacher; it affects not only whether people stay in the profession but also the type of teachers they end up being. The only job that appears to demand beginning teachers to perform the same tasks as seasoned professionals is teaching. It might be so difficult to implement academic information into practical mathematics instruction that even the most academically qualified beginners have a lot to learn.

When beginning teachers start their professional teaching careers, they learn the most crucial elements of instruction in the classroom, even if teacher training institutions provide beginning mathematics instructors with crucial knowledge regarding practical teaching. Building their capacity through on-the-job training can help them overcome some of the initial shocks and facilitate a smooth transition into the profession. On-the-job training of teachers could enhance teachers' knowledge of subject matter, use of instructional resources and classroom management. Therefore, the goal of this study is to determine how mathematics teachers' on-the-job training affects their students' achievement.

Hypotheses

The following hypotheses were tested in the study:

1. There is no significant relationship between teachers' knowledge of subject matter and students' achievement in mathematics.
2. There is no significant relationship between teachers' utilisation of instructional resources and students' achievement in mathematics.
3. There is no significant relationship between teachers' classroom management and students' achievement in mathematics.

Methodology

A population of 1,421 teachers participated in the study utilising a correlational survey design. The study included 370 teachers. Data were gathered using a questionnaire given to the teachers. The first part of the questionnaire contained demographic variables. The second section included ten questions that assessed the influence of teachers' subject-matter expertise on students' achievement. The third part contained thirty items which measured the influence of teachers' use of instructional resources on students' achievement and the fourth part contained

ten items which measured the influence of teachers' classroom management on students' achievement. Three expert opinions from the Department of Science Education and Measurement and Evaluation were used to validate the instrument. The data gathered from the respondents were analysed using Pearson product moment correlation, with a 0.05 threshold of significance.

Results

Hypothesis One: There is no significant relationship between teachers' knowledge of subject matter and students' academic achievement in mathematics.

Table 1

Teachers' Knowledge of Subject Matter and Students' Achievement in Mathematics							
Variables		Mean	SD	r	r²	P	Decision
Subject knowledge	70	55.03	14.82	0.980	0.961	0.000	Significant
Achievement	70	60.03	14.82				
P<0.000							

Table 1 shows significant relationship between teachers' knowledge of subject matter and students' achievement in mathematics, $r = 0.980$, $P(0.000) < 0.05$, which led to rejection of the hypothesis. Hence, there is a significant relationship between teachers' knowledge of subject matter and students' academic achievement in mathematics.

Hypothesis Two: There is no significant relationship between teachers' utilisation of instructional resources and students' academic achievement in mathematics.

Table 2

Teachers' Utilisation of Resources and Students' Achievement in Mathematics							
Variables		Mean	SD	r	r²	P	Decision
Use of Resources	70	61.61	14.61	0.950	0.903	0.000	Significant

Achievement	70	63.03	14.82
P<0.000			

Table 2 shows significant relationship between teachers' utilisation of instructional resources and students' achievement in mathematics, $r = 0.950$, $P(0.000) < 0.05$, thus, null hypothesis is rejected. Hence, there is a significant relationship between teachers' utilisation of instructional resources and students' academic achievement in mathematics.

Hypothesis Three: There is no significant relationship between teachers' classroom management and students' academic achievement in mathematics.

Table 3

Teachers' Classroom Management and Students' Achievement in Mathematics							
Variables		Mean	SD	r	r²	P	Decision
Classroom management	70	57.03	14.82	0.970	0.941	0.000	Significant
Achievement	70	60.03	14.82				
P<0.000							

Table 3 shows significant relationship between teachers' classroom management and students' achievement in mathematics, $r = 0.970$, $P(0.000) < 0.05$. Therefore, the null hypothesis is disproved. As a result, there is a significant relationship between students' achievement in mathematics and teachers' classroom management.

Discussion

The following sub-headings are used to discuss the study's findings:

Teachers' Knowledge of Subject Matter and Students' Achievement

The study initial finding indicated strong relationship between teachers' knowledge of subject matter and students' achievement in mathematics. This means that students' achievement in mathematics grows as the teachers' knowledge of subject matter increases. This may be

connected with the fact that good knowledge of subject matter exposes teachers to more pedagogical skills, teaching methods, classroom management practices and more knowledge in his/her area of specialization. This result supports the findings of Duru, Dominic, Udoha and Ochuba (2020), who found a favourable correlation between teachers' subject-matter expertise and students' achievement. This study also supports that of Yassin (2021), who noted that in the public elementary schools of the Hargeisa area, teachers' subject-matter expertise has a favourable impact on children' academic progress.

Teachers' Utilisation of Instructional Resources and Students' Achievement

Once more, the study showed a strong relationship between teachers' use of instructional tools and students' achievement in mathematics. This suggests that using educational materials improves students' achievement in mathematics. This may be predicated on the fact that the use of instructional resources make lesson clearer and close to reality. This reduces students' abstraction and enhances students' comprehension and retention of learnt concept. This could be the reason why students who received mathematics teaching utilising instructional materials performed better than those who received it without them. This finding concurs with that of Awolaju (2016), who claimed that students who were taught biology with instructional resources performed better than those who were not.

Teachers' Classroom Management and Students' Achievement

Thirdly, the study found a strong correlation between students' achievement in mathematics and teachers' classroom management. This suggests that teachers' classroom management affects students' mathematical proficiency. This may be due to the fact that as effective learning can only take place in a conducive classroom. Teachers' ability to maintain a conducive learning environment propel students to learn. This finding concurs with that of Muhammad, Igbal and Faridullah (2019) who identified a strong connection between teachers'

classroom management techniques and students' academic accomplishment as a crucial and fundamental component for the school's high academic results.

Conclusion

The study's findings led to the conclusion that on-the-job training positively influences students' academic achievement in mathematics. On-the-job training improves mathematics teachers' knowledge of subject matter, instructional resources and classroom management among others. Therefore, for effective and efficient teaching and learning of mathematics, there should be regular professional development training for mathematics teachers.

Recommendations

The following recommendations are made in light of the study's findings and the conclusions reached as a result:

1. The government should hire qualified educators for secondary institutions. Specifically, instructors who are knowledgeable in mathematics as a topic.
2. Government should offer in-service training for teachers to keep them up to date on contemporary educational advancements.
3. In secondary schools, the government should provide appropriate teaching resources and infrastructure to make learning more real and concrete rather than abstract.
4. In the classroom, teachers should make good use of existing teaching materials.
5. Teachers should ensure conducive learning environment.
6. Government at all levels should reward and motivate experienced teachers adequately.

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