

Predictive Factors influencing the Performance of Mathematics Student-Teachers in Teaching Practice at College of Education, Ikere-Ekiti, Nigeria

*Ojo, O. A.

Ayodele, O. B.

Department of Mathematics

College of Education, Ikere-Ekiti, Nigeria

*E-mail: joladeniyi@gmail.com, oludolapo123@yahoo.com

ABSTRACT

This study on Predictive Factors influencing the Performance of Mathematics Student-Teachers in Teaching Practice at College of Education, Ikere-Ekiti, Nigeria aims at determining student-teachers performance in Teaching Practice in relation to Education Method, Mathematics Method, Micro-Teaching and Problem Solving course among 185 mathematics students in College of Education Ikere Ekiti. They were selected from nine subject's combinations in three consecutive sessions by using stratified random sampling techniques. The major instruments for data collection for this study are mathematics students' scores in EDU 311, EDU 113, EDU 213, MAT 123, and MAT 212. Data were analyzed using correlation coefficient, multiple regression and analysis of variance. Mathematics Method (MAT 123) and Problem Solving course (MAT 212) were found to be significant factors influencing student teachers performance in Teaching Practice, while Education Method (EDU 123) and Micro-teaching (EDU 311) have contributed significantly to Teaching Practice skills. Hence, there is also a need to restructure the course contents in such a way that each of them will have strong and positive relationship with teaching practice.

Keywords: Teaching practice, Education, Micro Teaching, Mathematics, Methodology Course.

INTRODUCTION

The teacher has been identified as a very important factor in a nation's education system. It has been shown that the quality of any educational programme is a function of the quality of teachers (Akpan 1987, Ajewole 1990, Lassa 1978; Ojo, 2005). In arguing for the need for teachers who are equipped both intellectually and professionally to carry out the teaching of mathematics, Baja (1990) remarks that teachers could make or ruin an educational programme. The Teachers Education Programme in Nigeria with particular reference to National Certificate in Education is usually made up of three major parts, viz:

- i. Study in one or two approved teaching subject.
- ii. Professional training in education and
- iii. General studies

The main objective of these three parts is to produce competent and dedicated teachers, well equipped and versed in the theory and practice of education in the content area to be transmitted and interpreted to group of learners up to junior secondary school three levels. In line with the NCCE directives, students go on teaching

practice for a period of twelve weeks during their third year of study in the college. Furthermore, orientation programme is organized for both the supervisors and student teachers before embarking on the exercise. Also, schools and department do have their own orientation programmes. Within the professional training in education, the student teachers are exposed to related courses such as foundation studies, psychology, curriculum and teaching methods (Falayajo and Osafehinti, 1990). At college of Education Ikere, Teaching Practice (EDU 311) is a compulsory course for all the students. The Teaching Practice is the time when the students have the opportunity to try out and apply the psychology, methods and principles of teaching that they have learned theoretically in the lecture rooms. It is compulsory that a student must obtain at least a pass grade in the teaching practice before he/she could be award the Nigeria Certificate in Education (NCE).

Ohuche and Obioma (1983) in a study carried out on Teaching Practice conclude that teaching practice and methods courses are two very important aspects of curriculum of undergraduate pre service teachers. Performance of these courses should have strong positive relationship. Thus, there is need to find out whether there is a strong relationship between mathematics students-teachers performance in Teaching Practice and Methodology courses including Problem Solving Courses in Mathematics. There is also the need to find out which of the courses contributed significantly to the performance of student-teachers of College of Education, Ikere, Ekiti State in teaching practice. This study therefore aims at determining student-teachers performance in Teaching Practice in relation to Education Method, Mathematics Method, Micro-Teaching and Problem Solving course among mathematics students in College of Education Ikere Ekiti. The following null hypotheses were generated for the study.

- H₀1:** There is no significant relationship between mathematics student-teachers performance in Teaching Practice and Methodology/Problem Solving courses.
- H₀2:** There is no significant relationship between mathematics student-teachers performance in Teaching Practice and each of the Methodology/Problem Solving courses.
- H₀3:** There is no significant contribution to Teaching Practice (EDU 311) by Education Method (EDU 113), Micro-teaching course (EDU 213), Mathematics Method (MAT 123) and Problem Solving Course (MAT 212).

METHOD

This study adopts an ex-post facto design since research variables already existed and the researcher can neither control nor manipulate them. The sample for the study is made up of 185 final year students in Mathematics Department in the year 2012/2013 of College of Education, Ikere-Ekiti. They were selected from nine subject's combinations in three consecutive sessions by using stratified random sampling techniques. The major instruments for data collection for this study are mathematics students' scores in the following courses:
EDU 311: Teaching Practice denoted by T
EDU 113: The principle and methods of teaching denoted by M_1
EDU 213: Micro-Teaching denoted by M_2

MAT 123: Mathematics Method denoted by M_3

MAT 212: Problem- Solving denoted by M_4

Both the scores of students sampled in each of the courses used for the study and their final cumulative grade point average (CGPA) in teaching practice were collected from the examination and record department of the college. The data collected were analyzed using product-moment correlation, multiple regression analysis, Beta weight and Analysis of Variance (ANOVA). The multiple regressions were fitted as:

$$T = A + B_1M_1 + B_2M_2 + B_3M_3 + B_4M_4$$

The beta-weight of the listed courses M_1, M_2, M_3 and M_4 show the relative contribution of the predictor variables to the criterion variables (T). The correlation r shows the strength of association between the predictor and criterion variables. The F-test and ANOVA show whether there is any significant difference between Teaching Practice and methodology/ Problem solving courses.

RESULTS AND DISCUSSION

Table 1 shows that there is a significant different between Mathematics students teacher's performance in Teaching Practice and Method/Problem Solving courses at $\alpha = 0.05$ level of significant. Hence the null hypothesis that there is no significant relationship between mathematics student-teachers performance in Teaching Practice and Methodology/Problem Solving courses is rejected. Table 2 shows that there are no significant relationships between the following pairs at $\alpha = 0.05$:

- i. Teaching Practice (T) and Education Method (M_1)
- ii. Teaching Practice (T) and Micro Teaching (M_2)
- iii. Education Method (M_1) and Micro Teaching (M_2)

On the other hand, there are significant relationships between the following pairs:

- i. Practice (T) and Mathematics Method (M_3)
- ii. Teaching practice (T) and Problem Solving course (M_4)
- iii. Education Method (M_1) and Mathematics Method (M_3)
- iv. Education Method (M_1) and Problem Solving courses (M_4)
- v. Micro Teaching (M_2) and Mathematics Method (M_3)
- vi. Micro Teaching (M_2) and Problem Solving method (M_4)
- vii. Mathematics Method (M_3) and Problem Solving method (M_4)

Also there are very poor relationships between

- i. Teaching Practice (T) and Education Method (M_1)
- ii. Teaching Practice (T) and Micro Teaching (M_2)

Table 3 shows that Problem Solving Course (MAT 212) has the highest predictive strength of 52.7% to the Teaching Practice and Education Method is the worst predictive of 5.6% negative contribution on Teaching Practice. Furthermore, Mathematics Method is also a very good predictor of 48.3% on Teaching Practice. Based on the findings of this study, Mathematics Method and Problem Solving were found to correlate significantly with Teaching Practice. They were both correlated significantly with other courses. Problem Solving Course has the highest predictive strength with Teaching Practice and contributed

most to Teaching Practice. This may be due to his direct relationship with Mathematics, since it covers Junior and Senior Secondary schools syllabus in Mathematics. On the other hand, Mathematics Method is a general course without particular reference into any course. Problem Solving Course equipped the Mathematics student-teachers with what they would teach during their Teaching-practice exercise.

Table 1: Analysis of Variance (ANOVA) between Mathematics student's performance in Teaching Practice and Methodology/Problem Solving courses

Source of Variations	SS	DF	MS	F_{cal}	F_{tab}	Result
Between Group	7682.356	4	1920.589	22.142	2.99	S
Within Group	79786.08 920	86.724				
Total		924				

Source: An ex-post facto study, 2012/2013

Table 2: Inter Correlation/Regression Matrix between mathematics student's performance in teaching practice and each of the Method/Problem Solving courses

Variables	T	M ₁	M ₂	M ₃	M ₄
T	1.000	0.127	0.215	0.734	0.765
M ₁	0.127	1.000	0.248	0.583	0.486
M ₂	0.215	0.248	1.000	0.522	0.431
M ₃	0.734	0.583	0.522	1.000	0.751
M ₄	0.765	0.486	0.431	0.751	1.000
Mean	55.426	51.362	53.745	58.914	59.521
SD	6.129	12.965	11.573	9.942	7.542
N	185	185	185	185	185

Note:

T = Teaching Practice; M₁ = Education Method
M₂ = Micro Teaching; M₄ = Problem Solving course
SD = Standard Deviation; N = Subject

Source: An ex-post facto study, 2012/2013

Table 3: Inter-multiple relationship between Education Method (M₁), Micro teaching Course (M₂), Mathematics Method (M₃), Problem Solving Course (M₄) and Teaching Practice (T).

Variables	R	b	Beta
M ₁	0.127	-0.056	-0.176
M ₂	0.215	-0.024	-0.095
M ₃	0.734	0.483	0.654
M ₄	0.765	0.527	0.723

Source: An ex-post facto study, 2012/2013

CONCLUSION AND RECOMMENDATIONS

This study was conducted to evaluate the student-teachers performance in Teaching Practice in College of Education Ikere Ekiti. It focused on Education Method, Mathematics Method, Micro-Teaching and Problem Solving course among mathematics students. Based on the

findings, it was observed that Mathematics Method and Problem Solving correlated significantly with Teaching Practice and as well correlate significantly with other courses. Hence, it is concluded that Education Method and Micro-teaching Courses must be revisited in terms of contents and restructured so as to have significant relationship with other courses and Teaching Practice. There is a need to involve experts from various fields of specialization to handle the Education Method (EDU 113). Micro-teaching course should also be planned towards having a greater weight on Teaching Practice. Finally, since the focus of NCE is to prepare better teachers for tomorrow, there is need for better plans for the programme to reflect better performance in Teaching Practice.

REFERENCES

- Ajewole, G. A.** (1990). Teacher Factors in the implementation of Science Technology and Mathematics Curricular Objectives of the Ninety's. 31st Annual Conference Proceedings of Science Teacher Association of Nigeria (STAN), 113-117
- Akpan, E. U. U.** (1987). Winning more students for sciences: The Factors of Attitudes, Sex, Intelligence, Personality and Type of School. 28th Annual Conference Proceedings of Science Teachers Association of Nigeria (STAN) 52-56.
- Baja, S. T.** (1990). Direction of research in sciences, technology and mathematics in Nigeria. 31st annual conference proceedings of Science Teachers Association of Nigeria (STAN), 125-135
- Falayejo, W and Osafehinti, T. O.** (1990). A study of Curriculum coverage in Mathematics in relation to Studies achievements. *Abacus*, 20 (1), 27-36.
- Lassa, P. N.** (1978). Some categories of mathematics questions which senior school pupils fail: Suggestion for remediation. A Paper presented at the Annual Conference of Mathematics Association of Nigeria (MAN). University of Nigeria, Nsukka.
- Ohuche, R. O. and Obioma G. O.** (1983). Perceived competencies in elementary mathematics of some primary school teachers. A Paper presented at the conference on teacher's effectiveness held at university of Ibadan under the sponsorship of WAEC. 28-29
- Ojo, O. A.** (2005). A survey of factors influencing student's attitude towards learning mathematics in junior secondary school. *Journal of Mathematics Education, Ikere-Ekiti Nigeria*, 1 (1), 23-28.