
Mathematics Achievement and Student Teachers' Performance in Teaching Practice: The Case Study of Cross River State College of Education, Akamkpa

By

BASSEY EDU ENI

*Department of Mathematics,
Cross River State College of Education,
Akamkpa.*

DR. SAM W. BASSEY

*Department of Educational Foundations,
Cross River University of Technology,
Calabar.*

And

PATRICK OBERE ABIAM

*Department of Mathematics,
Cross River State College of Education,
Akamkpa.*

Abstract

This study was designed to ascertain the influence of mathematics achievement on student-teachers' performance in teaching practice. One hypothesis was formulated for the study: there is no significant difference between the students teachers mathematics scores in course work and teaching practice. Purposive sampling technique was adopted in the study. Thirty (30) out of Ninety Six (96) Mathematics student teachers who participated in the teaching practice of the 2011/2012 academic session were used for the study. Data were collected from grade ratings of student-teachers by the Mathematics supervisor during the teaching practice (TP) exercise. The data analysis was done using the dependent t-test. Findings indicate that there is a significant difference between course work in Mathematics and teaching practice grade scores of the sampled NCE III students. That is, the levels of performance in course work and teaching practice are not equal. The researcher therefore recommended that micro

teaching be beefed up, and prospective teachers should endeavour on their own to under study or review O'level Mathematics to boost their subject mastery.

There is every evidence that teaching is a profession. However, unlike medicine, Engineering, Law and other professions, practitioners in education hardly profit from post-graduation internship. For instance, the Medical Doctors undergo internship, the Lawyers go to Law schools before they are licensed to practice. In the case of teachers, they are expected to be posted to a school for teaching practice for a period of at least 12 weeks as prescribed by the National Commission for Colleges of Education (NCCE) and the National Universities Commission (NUC) before certification to practice. It therefore becomes imperative for all those who desire to teach to be well grounded in the various aspects of teacher training programme. Adetula (1997) perceived teaching practice as a series of laboratory experience, carefully conceived and directed to develop a degree of expertise in understanding student teachers' teaching techniques and procedure. He further showed that Arts students on teaching practice are significantly rated better by science lecturers than by arts lecturers and also science students on teaching practice are significantly rated better by arts lecturers than by science lecturers. He suggested that arts lecturers should supervise arts and science lecturers, science.

But today, in Nigeria, especially in Cross River State for instance; it is heart-warming to note that recruitment of teachers at the primary school level is always open to all those who hold the senior secondary school certificate (SSC), OND, ND, HND, and others. Furthermore, at the secondary school level recruitment of teachers is open to all those who hold first Degree (B.Sc, BA, BL, B. Tech or HND). The situation is different from the case of Medical Doctors, Engineers, Lawyers' entry into their various professions restricted only to those who possess the relevant qualifications in the various professions.

Another odd situation is that students who make A and B grades in Senior Secondary Certificate Examination and score highly in UTME (from 250 and above) are admitted to study either Law and Medicine or Engineering while those with low credit passes in Senior Secondary Certificate Examination and relatively low scores in UTME are usually deemed eligible for admission into teacher training programmes of the Universities and Colleges of Education. Hence teacher trainers and their institutions are left with no option but to accept students who are relatively academically inferior to undergo training as teachers. What do you expect? Low teacher quality, and consequently based on the garbage in, garbage out maxim, low learning outcomes.

Ogar (1999) advocated that teaching should not be a profession for those with low intelligence or for those who did not do well in their secondary school level. A

Mathematics Achievement and Student Teachers' Performance in Teaching Practice: The Case Study of Cross River State College of Education, Akamkpa

student who did not do well in secondary school will not also do much better all things being equal, as a teacher of mathematics even after training in a College of Education or University. This goes with the public saying that one cannot give out what one does not have. Emeh and Enufoha (2004) are of the view that a teacher needs to have a good mastery of the subjects in which he/she specialized or for which he/she was trained. Enoh (2008) averred that the teacher's mastery of his/her subject matter is an added advantage to the teacher's ability to manage and control a class. He further advocated that when a teacher lacks the grip of the subject matter, his/her presentation will not be coherent. The above views indicate the necessity for the teacher to increase the level of his/her subject mastery.

Also Ogar (1999) suggested that those seeking for admission into teacher training institutions with deficiency should undergo a preliminary course for a period of one year to increase or boost their knowledge in the subject area they intend to specialize on. Akalonu and Gila (1998) in their studies on the validity of interview test score for admission into Colleges of Education revealed that admission of candidates into College of Education should be based on the combination of indicated interest and their aptitude test scores with disregard to the weight placed on the pre-entry certificate of the candidates. Against the background, one begins to wonder what constitutes the relationship between theoretical and practical learning outcomes of teachers trainees.

Hypothesis

The hypothesis was:

There is no significant difference between the student teachers' Mathematics scores in course work and teaching practice.

Method

The research design used for this study was the ex-post factor research since the record, of academic achievement in Mathematics and student teachers' performance were already kept.

The sample used for this study was made up of 30 out of 96 mathematics student teachers that participated in the teaching practice in the year 2012 in Cross River State College of Education Akamkpa. Purposive sampling technique was adopted to select the students teacher. The sample comprised 30 student teachers of Mathematics.

Data was obtained through scrutiny of records of grades of sampled student teachers obtained from the academic and examination unit of the College Registry. Both the grades in teaching practice and Mathematics course offered at 100 and 200 levels were obtained at the records office for processing and analysis. The Grade Point

Average GPA of each student on the two year Mathematics based course was computed and stated against the grade point on teaching practice.

Data Analysis

The data analysis was done using the dependent t-test statistical analysis to test the hypothesis at 0.05 level of significance. The dependent t-test statistic was used because of one group. That is, one respondents in one group were is measured twice and two sets of scores were produced during the course of the investigation. The mean and standard deviation of the two set of scores were compared.

Results

Hypothesis 1

There is no significant difference between the student’s Mathematics course work and teaching practice scores.

Table 1

Dependent t-test Analysis: of Significant Difference between Mean Students’ Mathematics Scores in Course Work and Teaching Practice

Variables	n	\bar{x}	$\Sigma d/n$	Σd	Σd^2	SD	t-Cal.	Decision at P<.05
Academic Achievement								
Grade Point Average Scores in Mathematics (GPAS)	30	2.112						
Grade point scores (GPAS) in Teaching Practice (TP)	30	3.733	-1.017	-3.03	74.0	0.222	- 4.58	

*P<.05 (significant at .05 level); t-critical value = 1.699.

From Table 1, since the calculated t-value of 4.580 is greater than the critical t-value of 1.699 at 0.05 level of significance and 29 degree of freedom, it means there is a significant difference between the two sets of grades (course work and teaching practice).

Discussion of Findings

The main findings of this work is that there is a significant difference between course work in Mathematics and teaching practice scores of the sampled college students. This means that the level of performance in course work and teaching practice are not equal. This is understandable, for whereas course work measures cognitive learning outcomes obtained cumulatively over time in Mathematics content areas, the teaching practice measures in the rubric include adequacy of statement of objective, lesson presentation (including knowledge of subject matter content), use of instructional materials and the teacher’s personality. Furthermore, whereas the former mostly utilized the essay format test of achievement, the latter uses non-test assessment/observation instrument. Since the findings in this study point to the fact

that there is a significant difference between course work in mathematics and teaching practice, this could also imply that student teachers' level of subject mastery of mathematic content is on the low side. This is consistent with Enufoha's (2006) assertion that teacher needs to have a good mastery of the subject in which he/she is specialized or trained. This further agrees with Enoh's (2008) contention that "a teacher's mastery of the subject matter is an added advantage to manage and control the class. The implication of this study is that teaching practice committees in Colleges of Education should make sure that assignment of lecturers for teaching practice supervision should be subject based. That is, mathematics educators should supervise mathematics student-teachers, and the mathematics education trainee should as a matter of fact teach mathematics during their teaching practice exercise. This way, the latest trait both in subject matter and professional competency of the students in their subject area will be correctly assessed. One of the limitations of this study is that some mathematics student teachers were assigned to teach other subjects of their combination rather than teaching mathematics. This limitation should be noted in future studies of this research.

Conclusion and Recommendations

A good grip of the subject matter in conjunction with pedagogy in mathematics would influence the student teachers' effective performance in teaching mathematics during their teaching practice period. It will also help the teacher trainee to turn out to become an effective teacher of Mathematics.

1. The prospective teachers should endeavour on their own to study or review the O-level Mathematics content to boost their subject mastery. In doing this, they should equip themselves adequately by studying the O' level mathematics textbooks and probably, Teacher Guide.
2. There is need for the teaching of the O' level Mathematics content to prospective teachers at the early stages of their programme in the Pre-NCE or NCE 1 for the acquisition of basic prerequisite knowledge.
3. Administrators of Teacher Training Colleges should attach greater preferences to development of teachers professional skills as this is what post training job performance actually requires.
4. Lecturers should organize more of micro-teaching, internal workshops and seminars aimed at beefing up students' skills in teaching.

References

- Adetula, L. O. (1997). NCE student's teaching practice performance: Any difference between Science and Arts Lecturer Rating? *Journal of Teacher Education*, (2), 1-10
- Akalonu, H. O. & Gila, M. A. (1998). Validity of interview test scores for admission in Colleges of Education. *Journal of Teaching Education*, 5 (1), 1-8.
- Emeh, J. U. & Enokoha, O. I. (2004). The philosophy of teaching. In Uche, S. C. & Enukoha, O. I. (ed.) *The philosophy of teaching professional skills for effective teaching*. Calabar: Stiffaith publishers, 11-23.
- Enoh, A. O. (2008). *Subject mastery in teaching and learning*. A paper presented at the Retraining of Secondary School Teachers in Cross River, August, 1-6.
- Ogar, M. N. (1999). Comprehensive study of J. M. E. and Pre-NCE admitted students' performance in teaching practices in Cross River State College of Education, Akamkpa. *Journal of Educational Issues*, 2 (ii), 179-186.