

AN INVESTIGATION INTO MATHEMATICS TEACHERS' PROFESSIONAL AND UNPROFESSIONAL PRACTICES IN CROSS RIVER STATE SECONDARY SCHOOLS

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Abstract

This paper seeks to find out the professional and unprofessional practices of secondary school mathematics teachers in Cross River State. Two research questions were formulated and answered. A total of 80 mathematics teachers and 150 randomly selected senior secondary school students from five secondary schools in Boki Local Government Area responded to the four-point likert-like scale questionnaire. The result of the study reveals that the mathematics teachers in Cross River State exhibit a high level of mathematics competence in their professional practice. Only one unprofessional activity was found among the secondary school mathematics teachers: that are coming late to school and to the class for instruction. It is therefore recommended that mathematics teachers in Cross River State should maintain the high standard of their professional activities and avoid going to class late for instruction.

For any country to develop technologically that country must have a very strong manpower training system. No system can succeed technologically without dedicated and well-trained professionals. A train will derail if it moves without a qualified driver, a plane will crash-land when there are no dedicated and qualified pilots championing its course, a ship will capsize or sink into the sea if there are no qualified captains to man the ship, so also a nation that wants to develop technologically must have well-trained and professional mathematicians leading the training of its young scientists.

Ukeye (2006) stated that it is only through a sound and well-articulated science, technology and mathematics educational programme that appropriate technically skilled professionals can transmit their wealth of knowledge and understanding to the youths today and the scientists of tomorrow. The strategic importance of teacher professional education can hardly be over-emphasized. That is why Ukeye (2006) stated that if an engineer makes a mistake a bridge or a house may collapse, if a doctor makes a mistake patients in the hospital may die, but if a teacher makes a mistake, generation yet unborn will suffer. The teacher is therefore the key to proper development of the child and consequently the development of a nation.

Mathematics like any other profession has personnel who are professionally trained in the art of teaching mathematics. That there are still some non-professionals teaching mathematics in our schools today, does not make mathematics education an occupation that needs no special knowledge (Glongshot, 2006). In fact the content knowledge of the subject matter of mathematics is a vital factor of professionalism in relation to mathematics education. Much is yet to be done in the Nigerian educational setting on the mathematics teachers' professional practices in terms of providing researches based on the professional improvement or development of mathematics educators. Interestingly, the need for the professionalism of teachers in Nigeria has been generally recognized of recent, by the establishment of the Teachers Registration Council (TRC) by Act number 31 of 1993. TRC of Nigeria has statutory duties which include the registration and the certification of professionally trained and qualified teachers as well as spelling out clearly the professional code of conduct. It is against this background that this research was conceived to investigate the professional and the non-professional activities engaged in by mathematics teachers in Cross River State secondary schools.

Green (2004) and Crukshout (2002) define a Professional Mathematics Teacher (PMT) as one who has acquired some specialized knowledge and sometimes long and intensive preparation in order to display the business qualities that should characterize members of the teaching profession. Several

other studies have revealed that a professional mathematics teacher should have a good mastery of the subject, a thorough understanding of how learning should take place and how to also promote learning in a variety of ways. He should also have a positive attitude to his work, a healthy personality and commitment to his students and how to keep growing in his profession. Excellence in any learning centre either at primary, secondary or tertiary institution is directly linked to the commitment, willingness and professional preparedness of the teacher. In the same vein, Socket (2006) acknowledged that professional teachers must be capable of profound reflection on practice, competent to enter into dialogue of practice, able to engage in the interpretation and critique of ideas with other professional colleagues and with children. Professional practice in general devotes a commitment to a set of governing principles that are in the best interest of both the professional and the clients they serve.

In view of all these challenges, the mathematics teacher is expected to possess certain competences which are relevant to the objectives of teaching mathematics in schools. Notable among them according to Enifayeju (2005) in Glongshak (2006) are the following:

1. Appropriate relevant knowledge of the facts; laws; concepts and principles of mathematics.
2. **Pedagogy:** Trained professionally and well-oriented to teach mathematics.
3. Resourcefulness, creativity and ability to improve maintain and repair some relevant teaching aids.
4. Capable of stimulating and sustaining students' interest in mathematics through the use of appropriate mode of dressing and reaction to environmental stimuli.
5. The ability to carry out students' evaluation, through appropriate construction of test items in the cognitive, psychomotor and affective domain.

Glangshak (2006) also asserts that the professional mathematics teacher has among other things the following tasks to perform as part of his normal job schedules:

1. Plan and teach his students mathematics.
2. Select relevant books and materials for use.
3. Use a variety of teaching strategies and methods.
4. Provide moral leadership through such functions as science or mathematics clubs.
5. Be a role model for his students.
6. Maintain a pleasant personality and rapport with his students, other teachers and the school administration.
7. Liaise between the parents of his students and the school administration.
8. Evaluate and record learning outcomes in mathematics at prescribed times.
9. Attend staff meetings and professional conferences and workshops.

In view of the above qualities expected of mathematics teachers as stated by Enifayeju (2005) the researcher will investigate the professional and the non-professional practices of secondary schools teachers in Cross River State.

Purpose of Study

This study is aimed at investigating the mathematics teachers' professional and non-professional practices in Boki Local Government Area of Cross River State.

Research Questions

1. To what extent are secondary school mathematics teachers engaged in professional practice?
2. To what extent are secondary school mathematics teachers engaged in non-professional practice.

Method

The research was conducted using an investigatory survey research approach. A sample of thirty SS 2 and SS 3 students each were randomly selected including all the mathematics teachers from 5 secondary schools within Boki Local Government Area.

Instrument for Data Collection

Since this research centred mainly on the teachers' professional and non-professional practice, two instruments were constructed adopting the four- likert scale type to obtain data from both the teachers and the students. The first instrument 'teachers' professional practice questionnaire was given to the teachers while "teachers' non-professional practice questionnaire" was administered on the students. Experts in mathematics education at the University of Calabar, Calabar and some mathematics teachers in Cross River State University of Technology that did not form part of the sample validated the instrument to ascertain its content validity.

Procedure for Data Analysis

The data collected were analyzed using the mean ratings. A decision was taken on the mean ratings as follows:

- (i) $X < 2.50$ implies that the professional practice does not exist.
- (ii) $X < 2.50$ implies that the non-professional practice does not exist.
- (iii) $X = 2.50$ implies that the non-professional practice exists.

Results

Research Question 1

To what extent are secondary school mathematics teachers engaged in professional practice?

Table 1: Teachers' Professional Practice

| S/N | Item | Teacher | Decision |
|------------|-----------------------------------------------------------------|----------------|-----------------|
| 1 | I write my lesson notes for each lesson | 3.40 | Always |
| 2 | I mark students class work to get feedback from them | 3.78 | Always |
| 3 | I mark students homework to get feedback from them | 3.88 | Always |
| 4 | I mark student test and hand it over to them | 3.50 | Always |
| 5 | I buy my own reference materials for lesson in my class | 3.34 | Always |
| 6 | I attend assembly | 3.29 | Always |
| 7 | I attend meetings and briefings called by the principal | 3.24 | Always |
| 8 | I attend extra-curricular activities in the school | 3.78 | Always |
| 9 | I attend professional development programme to develop myself | 3.13 | Always |
| 10 | Each term, I arrive at school before the first class of the day | 2.88 | Always |

From Table 1, none of the items stated has its mean class lower than 2.50. This shows that mathematics teachers exhibit professional practice in the teaching of mathematics in Cross River State secondary schools.

Research Question Two: To what extent are secondary school mathematics teachers engaged in non-professional practice?

Table 2: Teachers Unprofessional Practice

| S/N | Item | Teacher | Decision |
|------------|-----------------------------------------------------------------------------------------------------------------|----------------|-------------------|
| 1 | My mathematics teacher comes to class late | 2.49 | Always |
| 2 | My mathematics teacher comes to class drunk | 3.39 | Not always |
| 3 | My mathematics teacher stays in the staff room or somewhere else when he is scheduled to be in my class | 2.89 | Not always |
| 4 | My mathematics teacher hits students in my class | 3.06 | Not always |
| 5 | My mathematics teacher comes to my class ill-prepared | 2.94 | Not always |
| 6 | My mathematics teacher goes on official assignments without work for the students in our class to do | 2.52 | Not always |
| 7 | My mathematics teacher scolds us when we asked question on what we don't understand in the class during lessons | 3.36 | Not always |
| 8 | My mathematics teacher make sexual advances to female students in my class | 3.37 | Not always |
| 9 | My mathematics teacher gives higher marks to female student in our class | 3.51 | Not always |
| 10 | My mathematics teacher gives lower marks to male students in our class | 3.50 | Not always |
| 11 | My mathematics teacher does not have time to mark and correct our assignments even if we submit them to him | 3.30 | Not always |
| | Total grand mean | 3.10 | Not always |

From Table 2, the general mean of 3.10 is greater than 2.50 and none of the items listed had the mean less than 2.50 except item one showing that mathematics teachers in Cross River State do not exhibit non-professional attitude but that these mathematics teachers come to class late with the mean of 2.49 less than 2.50.

Discussion

From Table 1, none of the items stated has its mean less than 2.50. This shows that mathematics teachers exhibit positive professional practice in the teaching of mathematics in Cross River State secondary schools. This agrees with the findings of Myers (2007) which stress that a professional mathematics teacher should have a good mastery of the subject, a thorough understanding of how learning should take place and how to also promote learning in a variety of ways. He should also have a positive attitude to his work, a healthy personality and commitment to his students and how to keep growing in his profession.

From Table 2 is greater than 2.50, and none of the items listed had a mean of less than 2.50. Mathematics teachers in Cross River State do not exhibit non-professional attitude. However these mathematics teachers come to class late with the mean of 2.49 less than 2.50. This agrees with the

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findings of Enifayeji (2005) which state that the mathematics teacher is expected to possess certain competencies which are relevant to the objectives of teaching mathematics in schools.

Summary of Findings

From the above study the following findings were made:

1. Cross River State mathematics teachers exhibit a high level of professional behaviour in the teaching of mathematics in secondary schools.
2. Unprofessional behaviours are not being practised by mathematics teachers in Cross River State secondary schools.
3. Late coming to work and to classrooms for instruction was recorded as the only non-professional attitude exhibited by the mathematics teachers in Cross River State.

Conclusion

Based on the findings above, it could be concluded that the mathematics teachers in Cross River State exhibit a high level of mathematics competence in their professional practice. Also traces of non-professional activities are not found among the secondary school, mathematics teachers. However, late coming to school and to class for instruction was the only non-professional activities recorded against the mathematics teachers in Cross River State secondary schools.

Recommendation

Since the professional activities of secondary school teachers are positive and the non-professional activities are minimal. It is recommended that mathematics teachers in Cross River State should be encouraged to keep up the good work they are doing. A close observation of the items one by one however reveals that weak professional and non-professional activities of secondary school mathematics teacher exist in not marking students scripts, coming late to class without giving students assignment while in official assignments, not being fully prepared for lessons and staying away from class when scheduled to be in the class for lesson. These should be completely discouraged among mathematics teachers in Cross River State secondary schools.

It is also recommended that further research in this area be conducted in Cross River State using a wider sample and score or on the relationship between teachers' professional practice and students' performance in mathematics in Cross River State and other states.

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