

PROFESSIONALISM: AS A SOLUTION TO CONTEMPORARY PROBLEMS IN FUNCTIONAL MATHEMATICS EDUCATION IN NIGERIA

OJO A.A, EGBON F.O. & ALADESAYE C.A.

DEPARTMENT OF MATHEMATICS

COLLEGE OF EDUCATION

IKERE EKITI

ABSTRACT

This paper stresses on categories of mathematics Teachers and controversy over professional recognition as regards challenges that confront educational professionals most especially functional issues in Nigeria. Stakeholders of today and tomorrow should be prepared to effect changes and innovation and promote the image of mathematics teacher education in Nigeria through professionalism. Standard for practice vis-a-vis the quality and effectiveness of teachers who have competencies through specially designed programmes for solving specific task. The characteristics of a professional, the code of conduct, control of entry and the recognition of the occupation of teacher is being zero into. Some recommendations were made. Professional association like MAN, NMS should provide new teachers and their mentors with external peer support through meetings, conference, publication and other resources. The association should ensure that mathematics teachers education programme should be built around professional standards provided by accrediting agencies, department of education and other educational entities. Hence educational authorities should reach a consensus such that mathematics education must be transformed to meet the needs of an emerging information technology and service –based society.

Keyword: *Mathematical Association of Nigeria (MAN), Nigeria Mathematical Society (NMS), Occupation, Profession and Standard.*

INTRODUCTION

Mathematics education should be built around professional standards provided by accrediting agencies, local and National profession association and other educational entities Abubakar (2011). Professional mathematics teachers should be involved in continuous improvement assessing their daily professional teaching standards with these, we can only continue to improve on quality brand rather than outright rebranding which come from crises situation Egbon (2015). Professionalism in teaching is not as straight forward to define as professionalism in more elite expert professions such as medicine and law that are commonly identified with professional status, the professional teacher works hard to establish an equitable and safe classroom in which all students feel cared for and fairly treated. Amuche (2013) stressed that professionalism in teaching refers to teacher with students as well as teacher interaction with other teachers and supervisors then it becomes imperative to explore how much professionalism is exhibited by secondary school mathematics teachers since this has direct implication in improving secondary school students achievement in mathematics.

Mathematics teacher education must provide a mathematics teaching with competence in mathematics. Perhaps, the greatest necessary condition for good mathematics teaching is the possession in oneself of sound and adequate competence in the subject. No one give what he does not possess. While this is not completely true, we can often help others find things we do not have ourselves but one has a hard time teaching or guiding the mathematics students without adequate mathematical competence.

CONTINGENCY TABLE AND CHI –SQUARE FOR THE TEST OF NO RELATION BETWEEN TEACHERS’ CONCEPTION OF MATHEMATICS PROBLEM SOLVING AND ACADEMIC QUALIFICATION

(n = 226, $\alpha = 0.05$)

Conception	Academic qualification				Chi-square Test of Significance		
	NCE	Bachelor	Graduate degree	Total	X ² - value	df	sig
Correct observed	21	108	34	163	15.52	2	0.00
Expected	16.6	119.7	26.7	163.0			
% within	91.3	65.1	91.9	72.1			
Incorrect observed	2	58	3	63			
Expected	6.4	46.3	10.3	63.0			
% within	8.7	34.9	8.1	27.9			
Correct observed	23	166	37	226			
Expected	23.0	166.0	37.0	226.0			
% within	100	100	100	100			

Sources: Amuche (2013)

This study revealed that teachers who teach mathematics come from all imaginable disciplines. The result showed a total of 22 distinct fields of study which are food science, biology, engineering, statistics, special education, Biochemistry, physics economics, business studies, science education, finance and Banking, operational research, estate management, accounting laboratory technology, geology, public administration and industrial technology.

It is important to note that not that majority of these teachers did not major in mathematics, they do not have any teaching certificate, this findings support that sixty percent of American secondary school mathematics teachers did not major in and are not certified to teach mathematics. The result also showed that more female than male teachers teach mathematics at secondary schools level, and majority of the teachers hold a bachelor's degree. Quite impressively, many of the teachers profiled have taught mathematics for more than 10 years. Teaching experience often plays an important role in instructional delivery. In this study, teaching experience presented an interesting relationship with correct conception, with teachers of less than three years of experience being similar with more than nine years' experience, both groups have better conceptions than middle experience teachers (four years to nine years). The fact teachers who have less than three years experience have better conception than those who have between four and nine years experience lends credence to saying that new broom sweeps best. Those who have between four and nine years experience could be suffering from bornout self doubts as to whether they should continue or leave teaching to try other professions or go for higher degree. It appear also that those who have experience of ten years and above are settled on their job, have accepted it well and seen to be putting in their best efforts. It helps if they have higher degree or even NCE with many years of experience. Respondent with NCE have similar conception with respondents with graduate degree, and the two groups have significant with bachelor's degree. According to this study, the best years for all

teachers are the first three years when they are still enthusiastic and passionately ready to deliver their new knowledge and the period beyond their ninth year in the classroom when they have probably settled for a career in secondary school teaching Amuche (2013)

The Mathematics Programme

What is the scope of content for the mathematics programme? How is this content organized and sequenced? What attentions is mathematics processes? To the development of skills or concepts? To the development of problems solving ability in its broad sense, encompassing more than just word problem? Where alternative interpretations of content and alternative mathematical procedures are possible, which shall be included in the programme. How are the contents for primary to be articulated with that for secondary and that of the secondary to that of the university or college Lassa (1984). There should be an integrated programme where there is a balance between mathematical background and pedagogical theories. More research activities should be carried out in order to establish how the balance could be achieved and what experiences should be given to would-be-teachers in university, colleges of education and other institutions where mathematics teachers are prepared Madu (2011).

Functional Issues of Mathematics Education

In the popular mind education and affluence are usually associated with rich countries which boast of advanced educational systems while poor countries are educationally backward, apart from also providing occupational training to

future entrants into the employment market, the educational system of a modern society acts also as a filtering agency - a sieve for selecting and directing people to different areas of specialization and levels of operation when the educational system performs this function satisfaction, society is able to make full use of the so-called "pool of capability" that is, the sum total of the intellectual qualities, talents and other abilities of the people. Datta (1983).

It was observed that the average teacher in Nigeria was no more committed to his job and that teachers who perform their duties with great enthusiasm, dedication and earnestness were still very few and were an increasingly scarce commodity. In discussing issues concerning teachers and the professionalization of teaching matters like apparent poor public image of teachers with respect to the very low regard which members of the public seems to associate with teachers, unlike medical doctors, Lawyers and Engineers which the public yern to gladly and proudly embrace. As a result of this, many people are learning the vocation at the earliest opportunity since it appears not to have professional stats. It is an open secret in Nigeria that many teachers, especially those at the primary and secondary levels are not academically and professionally qualified. Many of them did not undergo any teacher training programme before. Being sent to the classrooms as teacher, talkless of acquiring specialized knowledge, after a long period of training. Many would-be teachers, such as the holders of Bachelor degrees in Arts, Sciences or Social Sciences without any qualifications in teaching: as we as the holders of the ordinary and Higher National Diploma, and other professional

Certificates. Through the job of teaching demands intellectual ability, the curriculum contents of the various teacher education programmes in the country do not favour subject specialization. The course contents were designed to make the teachers able to teach all subjects, at least at the primary school level. Even at secondary school level there had been several cases of people being made to teach in subjects areas other than the ones they studied at the University or college.

Towards Professionalism of Mathematics Teachers in Nigeria

The job of teacher and teaching in Nigeria are not accorded high status and regard by the society. Because of the poor image of teacher and teaching in the country, young people are not willing to embrace teaching as their future career. It is time the job of mathematics Teachers in Nigeria is professionalized and to do this successfully, the Nigerian Union of Teachers (NUT), Mathematics Association of Nigeria (M.A.N) and Nigeria Mathematical Society (N.M.S) must take immediate step to rectify the anomalies of the employment of mathematics teacher in order to eliminate the hiring of allied science based discipline to teach Mathematics. If this is not done by the NUT and the mathematical body, the science and Technological advancement which we yearn for will merely be a mirage. Hence, there should be an immediate stop to the idea and practice that anybody can just enter the classroom and teach. An entry standard into teaching would have to be set and maintained. Doing this will go a long way in improving the qualities of education and consequently bring about an improvement in the quality of the products of our schools.

Occupation or Profession

Occupations which the general public usually refers to as the professions. During the last hundred years there has been an increase in the numbers of those claiming to be members of profession. In the main this has been a result of the rising proportion of occupations that have required a high standard of education. Many members of these newer occupations, for example engineers and accountants have established a professional status. The layman who is sick consults his doctor is assumed to know how to cure it. In the same way the lawyer can help his client because of his knowledge of the complexities of the law. Therefore, the professional situation is characterized by the expert practitioners in consultation with the ignorant client who has absolute trust in the advice tendered to him. The practitioner does not use his knowledge expect to benefit his client.

Characteristics of a Professional

Knowledge

The ignorance of the client is fundamental to the need to consult the practitioners therefore a member of many of those occupations that are normally called professional must have a command over a very definite field of knowledge, much of which will be particular to one profession. The mastery of such a core of relevant knowledge requires high intelligence and some training. Law and medicine provides clear examples, since considerable training is necessary in both cases, the nature and the complexity of the knowledge demands high level of intelligence. Under modern conditions the mass media and advertising have shown

that they can sometime teach better than many teachers. In the schools children have some time now learnt from the radio and films.

Teaching grows to be less of an art and more of a science as research reveals more about the process of learning and the best way to communicate information. Musgrave (1979) and Fakunle (2011) agreed that since education is a potent factor in achieving political, social and economy freedom, the better the quality of education provided and the larger the number of people exposed to the more assumed hope we shall have for better Nigeria. Yet it is still true that to practice as a teacher in Nigeria assumes a core of specialized knowledge and skills, and that a relatively high level of intelligence is needed to be teacher.

Control of entry

The knowledge and training essential for any profession can be specified so that control of entry to the profession is possible. The academic qualifications and length of training necessary for admission to the register are laid down in details but the struggle by the teachers to establish a strong professional body in Nigeria is still a failure, in the sense that anybody could go into the teaching profession without teaching qualification and many fresh graduate these days use the profession as a stepping stone before being gainfully employed.

Code of professional Conduct

A professional man must not only be of proved competence but he must be trustworthy, teachers usually are not cannot apply for post without supplying some references of their character, many questions fairness are raised by this system

which is certainly less objective than most formal education. It has said that the professional man does not work in order to be paid but is paid in order that he may work.

Recognition of the occupation

This case has sometimes been made that the existence of any profession merely depends on recognition by the public. If the majority of teachers considered themselves to be members of a profession and on the whole the public and the authorities treat them as having that status, then the principle of the self-fulfilling prophecy will operate in the case of the teaching profession.

Professional standards

The raising and maintenance of professional standards of teachers must be reflected in teacher education programmes in Nigeria. There is a popular belief that the standard of teachers today is by common knowledge inferior to the old. Until adequate research has substantiated this, generalizations would be very difficult to make. There is evidence however to suggest that standards in general have been lowered. The rush and anxiety to expand, the automatic promotion system in the primary schools, the high failure rates, the lack of facilities in training institution and the increasing dilution of a trained pool with boys and girls introduced into the profession on a crash basis, would lead anyone to think that standards have in fact that primary school teachers in particular are doubly orientated toward the primary system in that they are both products of this system and are three years or sometime less working in it, also reinforce the argument

about poor standards since the low standards of primary education itself is already acknowledged.

Series of measures would be required to ensure the professional standards of teachers. Since most of the Nigeria school children would receive primary education only, priority should be given to strengthening the quality of teachers at this level. A secondary school certificate cannot be considered a luxury as the basic education required of all Nigeria primary school teachers, Because knowledge in education quickly becomes outmoded and sometime stale, maintenance of professional standards would require constant updating of skills. Practicing teachers should be afforded opportunities to update their skills at least once in five years. It is difficult to determine how much of academic or pedagogy should be given to teacher-trainees. Two points are undisputable. First a practicing teacher must know his subjects, then he determining the balance between theory and practice, between content and methods, or between academic and professional courses.

The overall emphasis is identifying the task to be done, the goals to be met, the interests to be served, rather than becoming embroiled in extraneous debates. Depending on circumstances, needs and interests; a two-to-one ratio between theory and practice or between academic and pedagogy may work well for students in community A and be found unworkable for students in community B. teaching is both art and science the less dogma one puts into it is the happier for all concerned (Adesina 1988)

Conclusion

A final step towards the maintenance of standards in the professionalization of Mathematics Education. Professionalization here refers to building into teaching career some control devices to ensure that the practitioners are worthy members of the profession. The belief that any allied based personnel can teach mathematics should be discouraged and a system of licensing members can be introduced. The most serious charge against urban teachers is that they are heavily involved in part time enterprises at the expenses of their whole time appointments. Professionalization therefore, would also involved determination and enforcement of a code of professional performance by M. A.N and NMS which will come to grips with such inconsistencies and tackle the problems that hinder the effectiveness and quality assurance of teacher education in Nigeria today.

Recommendations

- ❖ Government should employ adequate number of qualified mathematics teachers in our public schools.
- ❖ Professional association like MAN, NMS should therefore provide both new teacher and their mentors with external peer support through meetings, conference publications and other resources. The association should ensure that mathematics teachers education programme should be built around professional standards provided by accrediting agencies, departments of education and other educational entities. Hence, government of Nigeria should reach a consensus such that mathematics

education must be transformed to meet the needs of an emerging information technology and service –base society.

- ❖ The learning environment is critical for e – learning to be effective, mathematics educators, given their breadth of expertise and their connections to industry should create student – centered, e –learning environments that involve more than just using technology to disseminate information but provide exemplary molds of e-learning environments.

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