Science Teachers Association of Nigeria

SCIENCE, TECHNOLOGY, AND MATHEMATICS (STM) EDUCATION AND PROFESSIONALISM

Proceedings of the 46th Annual Conference 2005

UCHENNA NZEWI

Editor

Sponsored by

Heinemann Educational Books (Nigeria) Plc

CAPACITY BUILDING IN THE SCIENCES: IMPERATIVE FOR PROFESSIONALISM IN TEACHING

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Abstract

The study investigated capacity building in science education by inquiring into the enrolment of pre-service science teachers of some selected tertiary institutions situated in Lagos State. 200 in-service teachers were selected by simple random sampling as sample of the study. Data were collected through a questionnaire and documentary analysis of school records of enrolment. Findings revealed among others the low enrolment of students in science education and lack of adequate training opportunities for in-service teachers. Recommendations were proffered to improve the existing situation.

Introduction

Teaching is a complex task, which carries heavy responsibility and therefore requires a specialized training. This training is needed to inculcate the skills, knowledge and ethics of the profession. In Nigeria however, teaching has been regarded as a job for all-comers (Ciwar, 2003). There are also a large number of persons (birds of passage) who use teaching as a stepping-stone to other professions (Osafehinti, 1999). Also everyone found in the classroom claims to be a teacher and there seems to be no clear yardstick for determining a teacher.

A giant stride at ameliorating the precarious situation of the teaching profession could be the on-going Teachers' Registration (TR) exercise. It should, however be noted that government's effort at professionalizing teaching was dated back to the 1950s. Ogundele [2004) had noted that teachers in primary and secondary schools then were registered in each region with a national registration number. Such a laudable effort was however nipped in the bud. This vision has been

rejuvenated by the establishment of the Teachers Registration Council through Decree 31 of 1993, and the council is taking a bold step towards professionalism in teaching.

Professionalism in teaching will offer theoretical and practical knowledge, ethical codes of conduct, continuous in-service development and rendering of essential and qualitative services to society (Ciwar, 2003). All these will bring about improved quality of teaching and public image of teachers. Complaints about the quality of teaching are not new and have become particularly loud because of the recurring poor performance of students in external examinations. No doubt, a country's quality of education cannot rise above the quality of its teachers. Therefore, the present forms and methods of preparing future teachers for their duties should be restructured to enhance the quantity and quality of teachers. In realization of this, the Federal Government of Nigeria had in the past stepped up effort at attracting more students into the Sciences. Such include among others, 60:40 Science to Arts admission ratio policy for universities and science allowance to science teachers. These are enough commitment and support of government for continuous capacity building in the sciences.

Capacity building refers to the process particularly in the formal education sector of"Enhancing the abilities and capabilities of human resources, identifying and meeting national development challenges in a sustainable manner"(Ajeyalemi, 2002).

Capacity building in Science teaching should include pre-service and in-service education. The pre-service education prepares the would-be teacher to participate effectively in teaching. The in-service on the other hand is either a short or long-term, up-dating courses usually in form of seminars, workshops and conferences or further studies and meant for teachers still in active service.

The present effort of the TRC at establishing register for teachers and also encouraging those that have no teaching qualification to acquire necessary skills in teaching should be complemented with a strong and articulated teacher training programme. This should be capable of attracting more people to the pre-service education, and encouraging those in teaching to keep abreast of development in teaching.

The present study therefore was designed to investigate the capacity building in science education in the five tertiary institutions where education courses were offered in Lagos State. These are: Lagos State University, LASU; University of Lagos (UNILAG); Adeniran Ogunsanya College of Education (AOCOED); Lagos State College of Primary Education (LACOPED) and

Federal College of Education, Akoka (FCEA). The study also inquired into the training opportunity provided for the in-service teachers to enhance their skills and competencies.

Research Questions

1. Are there adequate enrolments of Students in Science Education in Lagos State tertiary institutions?

2. Are there requisite training opportunities for the in-service science teachers?

3. What are the contributions of the various curriculum development agencies towards training of teachers?

Methodology

This is a descriptive survey-research designed to inquire into the capacity building ofteachers of science. In-service science teachers in Lagos State public secondary schools constituted the study population. Of these, 200 in-service teachers, 10 from each of the 20 existing local governments were selected by simple random sampling as sample for the study.

Data was collected in two stages: The first stage involved collection of data through a self-developed questionnaire titled Questionnaire on Retraining of Science Teachers (QRST). The questionnaire dealt with issues relating to the training of teachers. It consisted of eight types of training programmes (improvisation, teaching method, continuous assessment, management of large classes, teaching difficult topics in science, usage of science curriculum and further studies). Teachers were to indicate the type of training acquired, when the training was received and the body organizing the training (WAEC, STAN, TESCOM, NERDC and the School).

The instrument was validated by giving the initial draft to two Science Education lecturers in Lagos State University. Necessary modifications resulting from their criticisms and reviews improved the content validity of the instrument. The reliability of the instrument was established using the test-retest method within an interval of two weeks; this produced a correlation co-efficient value of 0.82.

Data was also obtained from the secondary source at the second stage. This involved a documentary analysis of the records of students' enrolment in each of the tertiary institutions.

Data was analyzed using simple percentage, ratio and component bar chart.

Results

Table I: Students' Enrollment In Education and Science Education

School	Students' Enrollment In College/Faculty	Students' Enrolment In Science Education	Ratio Of Scienceto otherDisciplines
LASU	1061	141	12:88
UNILAG	4700	882	17:83
AOCOED	1021	154	14:86
LACOPED	1000	167	14:86
FCEA	2606	638	20:80

Table 1 shows that the enrolment of students in science education is too low and a far cry from the policy requirement of ratio 60:40, science to arts. It can also be deduced from Table 1 that there is about equal ratio of students' enrolment across the five-tertiary institutions in Lagos State.

The low enrolment of students noticed in Table 1 becomes pronounced and better captured with the component bar chart displayed below:

Figure 1: Component bar chart of enrollment in education and science

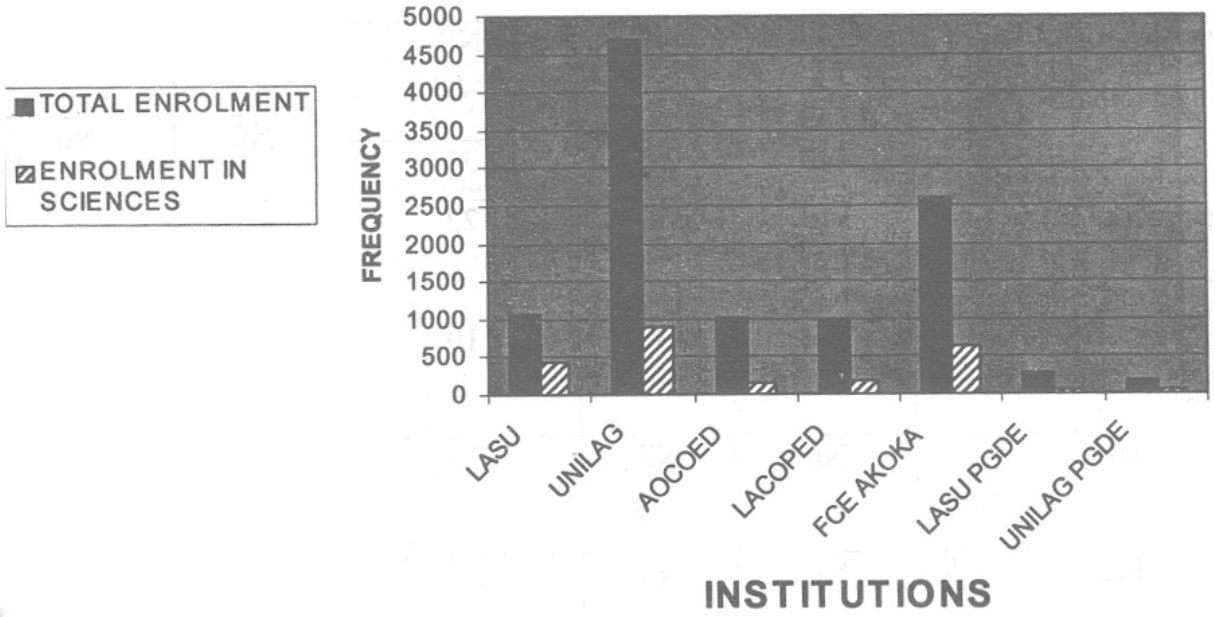

Table 2: Frequency and percentage of in-service teachers response on nature of training received

Types of Training	Nature of Training				
	Induction	Refresher	Further	Total	Total
Improvisation	22(11.0)	26(13.5)	Nil	48(24.0)	152(76.0)
Teaching Method	23(11.5)	50(25.0)	Nil	43(36.5)	127(63.5)
Continuous	45(22.5)	63(21.5)	Nil	108(54.0)	92(46.0)
Management of large	16(8.0)	60(30.0)	Nil	76(38.0)	124(62.0)
Teaching difficult	12(6.0)	43(21.5)	Nil	55(27.5)	145(72.5)
Usage of Science	Nil	23(11.5)	Nil	23(11.5)	177(88.5)
Further Studies	Nil	Nil	37(18.5)	37(18.5)	163(81.5)

Note: The figures in parentheses representpercentage

Table 2 reveals generally that few training opportunities are offered to in-service science teachers. It therefore means that science teachers are denied opportunity to update their knowledge.

Table 3: Frequency and percentage of in-service teachers response on body organizing training

Types of Training	WAEC	STAN	TESCOM	NERDC	SCHOOL
Improvisation	Nil	48	Nil	Nil	Nil
Teaching Method	Nil	33	25	Nil	15
Continuous Assessment	Nil	54	30	Nil	24
Management of large classes	Nil	36	22	Nil	18
Teaching difficult topics in Science	Nil	40	10	Nil	05
Usage of Science Curriculum	Nil	Nil	23	Nil	Nil
Further Studies	Nil	Nil	37	Nil	Nil

KEY:
WAECWestAfrican Examinations Council
STAN Science Teachers Association of Nigeria
TESCOM Teaching Service Commission
NERDC Nigerian Educational Research and Development Council

Table 3 shows that STAN, TESCOM and the school organize one or more types of training listed. The table further reveals that WAEC and NERDC as examining body and curriculum development agency respectively have no contribution to the professional training of teachers.

Discussion of Findings

The low enrolment of students into science education implies no bright future for science teaching, and a shaky base for the realization of technological breakthrough. This is so because

the quantity and quality of pre-service teachers hold the ace for the future of the teaching profession. As the saying goes: “Young shall grow and Old shall die.” The quantity of pre-service teachers may eventually not be enough to fill the vacant positions created as a result of large classes in science and also due to ageing teachers who will eventually retire. Little wonder therefore that the teaching profession still remains a dumping ground and a field for all corners. A situation which has remained a recurring decimal over years.

The study also revealed that in-service teachers lacked opportunity for retraining. This corroborated earlier finding by Maduabum (1990) where the unsatisfactory state of personnel both in quantity and quality was stressed. It equally supported the finding of Ivowi (1988) that science teachers lacked the needed training to implement the curriculum as desired. The quality of science teaching is therefore in great doubt bearing in mind the dynamics of discoveries in science and numerous innovations on science teaching. No doubt keeping abreast according to Afolayan (1982) requires a continuous process of education and re-education which must include both subject matter and evolving methodologies. As rightly observed by Etuk and Etuk (1989), in a situation where teachers do not undergo refresher courses they tend to loose trend with currentdevelopments in their areas of specialization.

The finding in the study that STAN offered the best opportunity for training of teachers is not surprising going by Silber’s (1981) assertion that “Science teaching organizations have a major role in encouraging, assisting and developing good teachers.” In addition, STAN as a body is-only performing one of its cardinal responsibilities; this is not the case with NERDC. NERDC ought to show more commitment to organization of training. This is because professional growth and development of teachers is an integral part of any curriculum development process.

Conclusions and Recommendations

By the findings ofthis study, it can be inferred that the journey to professionalism in teaching should actually commence at the doorstep of pre-service teachers. This implies that capacity building process should be re-strategized to attract more pre-service teachers. The following recommendations are therefore offered to improve on existing situation:

a) Motivation to students in science education. This should take the form of bursary or monthly allowance as was done for nursing students some years back.

b) Continuous process of education and re-education of in-service teachers to sharpen their competence.

c) Adequate provision of modern instructional facilities in tertiary institutions.

d) Adequate funding of tertiary institutions.

e) Only people with teaching qualification should be considered for appointment into the Teaching Service Commission.

f) Applicants with teaching qualification should be placed on salary grade level 9 step 1 instead of 8 step 3 which is the current practice.

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