



Keywords

Profession,
Competency,
Technical & Vocational
Education (TVE)

Received: September 18, 2014

Revised: October 09, 2014

Accepted: October 10, 2014

Professional competence of technical teachers: A factor analysis of the training needs of technical college teachers

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Citation

Adameji James Oluwasola. Professional Competence of Technical Teachers: A Factor Analysis of the Training Needs of Technical College Teachers. *American Journal of Science and Technology*. Vol. 2, No. 1, 2014, pp. 22-26.

Abstract

Much concern has been expressed in the way and manner in which vocational technical education (VTE) is being taught in Nigeria and specifically in Ekiti State technical colleges. This concern stems partly from the fact that the nation cannot effectively develop her human and material resources without adequate and well skilled manpower at all educational level. As a result of this, the study investigates Professional Competency Training Needs of Vocational Technical Teachers in Technical Colleges in Ekiti State. The survey research design was used. The study population consisted of all technical college teachers in Ekiti State; the sample comprised all the sixty (60) technical teachers which formed the population. Professional Competencies of Training Needs of Vocational Technical Teachers Questionnaire (PCTNVTQ) was used for data collection. The test-retest method was used to determine the reliability coefficient of which 0.72 was obtained. Data collected were analysed using Mean and Standard Deviation statistical tool. The findings from this study showed that technical colleges' teachers in Nigeria are not exposed to workshop, seminars and other means of acquiring technical base knowledge and skill and that many technical colleges' teachers are not competent. It was therefore recommended that all technical teacher training institutions as a matter of necessity should work in concert and produces an acceptable curriculum that will foster the needed competencies to our young teachers in training and those already in the field through in- service training.

1. Introduction

A profession according to BBC English Dictionary (2000) is a type of job that requires advanced education or training. The National Teachers Institute NTI (2000) defines a profession as any occupation which demands of all who work in it a prolonged and specialized knowledge, skill and attitudes that are necessary for a particular service in the society.

Competency according to the Wikipedia Dictionary (2014) means the ability to be a competent, adequate possession of required skills and knowledge; qualification, or capacity. Competency in a cogent term reflects the ability to do something in contrast with more traditional ability to demonstrate knowledge. Competencies for technical and vocational education (TVE) as expressed by Finch and Crunkilton (1984) specifically, are those tasks, skills, attitudes, values and appreciations that are deemed critical to

success in life and or in earning a living.

The federal Republic of Nigeria FRN (2004) describes technical and vocational education (TVE):

“As a comprehensive term referring to those aspect of educational process. Involving in addition to general education, the study of technologies and related sciences and acquisition of practical skills attitudes, understanding and knowledge related to occupations in various sector of economic and social life. This education was further described by FRN to mean;

- a. an integral part of general education
- b. a mean of preparing for occupation field and effective participation in the world of work.
- c. an aspect of lifelong learning and preparation for responsible citizenship.
- d. an instrument for promoting environmentally sound and sustainable development and
- e. a method of alleviation property.

Therefore, from the above, it can be deduced that the wealth of a nation is proportional to the level of her scientific and technical development. The level of science and technology as nightly painted out by Unameye and Oviawe (2006), is also in turn dependent on the quality of teachers. This view is in line with Lassa (1991) observation that the teacher lays the foundation for technological advancement of a nation and this advancement depends on the quality and efficiency of the teachers. He further maintained that whether technology will solve problems or create problems for men depends on the value appreciation imparted by the teacher.

Vocational Technical teachers are special group of interested teachers who have been variously assisted by technical teachers training programme(TTTP) to acquire manipulative skills in this chosen occupations as well as in general education. These teachers are professionally trained to teach in the various vocational technical education institutions including technical colleges, even the introductory technology at junior secondary schools which is prevocational. Nwachkwu, Igbo, Onyemachi and Ekong (1999), declared that individual vocational technical teacher is specifically trained for competency in the classroom and laboratory instructions. Therefore, on the success of vocational technical education, teachers must indeed command confidence in the technical content as well as methodology of improving knowledge.

FRN (1981) noted that no education can rise above the quality of its teacher. This means that the success of any educational programme (TVE inclusive) depends largely on the availability of adequate number of professionally competent, committed, efficient, conscientious and highly motivated classroom teachers. Commenting on the quality Olaitan (1996) asserted that there is no substitute to the pursuit of excellence in technical and vocational education in Nigeria.

Despite the assertions of various authorities on TVE, the most disturbing thing about TVE in Ekiti state and Nigeria as a whole since the introduction of 6-3-3-4 system of education some decades ago, evolve on non-realization of the lofty

ideas of people concerning TVE. The poor quality of graduates compelled with high level of unemployment among them are clear indication of non-possession of adequate knowledge and skill that can enable them to take up the available job or establish on their own. This problem has seriously led people to doubt the quality efficiency and professional as well as the education competences of technical teachers participating in producing them.

Hence, this call for need for relevant curricular for the training of professionals in various occupations to meet current labor requirements, it also necessitates that we continuously seek new and better ways of measuring the effectiveness of the teaching learning process, and identification of significant task for developing needed curriculum to train professionals in their various occupations is one of the best ways of meeting the labour market's current requirements and ensuring the effectiveness of teaching and learning process.

According to Odumah (2002) a technical education curriculum is considered relevant if it is tailored to the need and aspirations of the individual vocational and technical teacher. It is adequate if the recipient is capable of effectively passing them on to someone else. The national commission of colleges of education, minimum standard (1990) is for Technical Education teachers and practitioners of technology capable of teaching technical courses in technical colleges, even in the junior secondary school (JSS), as introducing technology teachers and values into the society. The NCCE standard (1990) provide of vocational training and re-training of technical education teachers to love a general knowledge of the occupational areas and to specialize in one area in addition to one aspect of technical drawing towards the end of his training. Considering that the technical education teacher is expected to teach a more comprehensive vocational or technical courses including technical drawing after the training, his competency and effectiveness is inherently questionable (Awolumate 2005) that technical teacher education curriculum is effective and this hinders teacher's effectiveness.

In Nigeria, as in other parts of the world, serious effort to establish and improve systematic teaching of technical education should be intensified in other to meet the prediction level of high demand for both tradesman and higher level of technological man power. It is the teachers that make preparation for the world situations. These academic skills include the competencies needed in contemporary work-place as well as the knowledge and skills valued by academic education measured by state examinations.

Furthermore, as new techniques and knowledge increase in business and industry, technical educations clearly owe it to their students to remain alert and responsive to all significant changes and developments, both in their specific and related occupational fields. This means that technical teacher education curriculum must be based on current reported needs of students. The challenges therefore, is research effort

which determine the extent to which curriculum currently exists that encourages and assists school personnel to actually cause meaningful learning to happen to students. It is on this background that this paper is poised to investigate the professional competencies of vocational technical teachers, a factor analysis of the training needs of technical college teachers.

2. Statement of the Problem

It is a common saying and believe all over the globes that technical vocational education and training (TVET) will equip its graduates with skills necessary to be self-relevant and to meet current labour requirements, so also Nigeria golden aims attached to vocational technical education at the inception of 6-3-3-4 system of education some decades ago as contained in the national policy on education (1981) lured the entire people of this country to believe that the end to economic problem of hardship was at sight. Contrary to this expectation, very high level of unemployment and incompetency waxed stronger among graduates of various technical colleges in Ekiti State. Thus, the non-realization of the lofty objectives of technical/vocational education has actually put the quality, efficient and generally the professional competencies of vocational technical teachers into a serious doubt. Hence, the paper indeed discussed the professional competencies of vocational technical teachers: a factor analysis of training needs of technical college instructors.

2.1. Purpose of the Study

The paper investigated the professional competencies of vocational technical teachers: a factor analysis of training needs of technical college teachers in Ekiti State technical colleges. In specific term the study:

1. Find out the professional competencies training needs of technical teachers in Ekiti State technical colleges.
2. Find out the strategies and techniques that can be adopted to sustain the professional competencies training required by technical college teachers that will enhance or influence the performances of the students.

2.2. Research Questions

The following research questions were raised for the study:

1. What are the skills and training programme or the professional competency needs of the technical college teachers in Ekiti State to enhance their educational competency?
2. What are the strategies and techniques to be adopted for the competency training needs of technical colleges teachers that will enhance or influence the performance of the students?

2.3. Significance of the Study

The advantages that will be derived from the study are numerous. Primarily, the findings will be an urge to help the

teachers to improve on their occupational instructional areas, also, there will be quality in the product of graduates from technical colleges who will effectively fill the high level of tradesmen and higher level of technological man power thereby reducing drastically the present poverty and unemployment level of the nation.

2.4. Delimitation of the Study

The study is delimited to technical college teachers in Ekiti State. Technical teachers in public secondary schools and those in the college of education in the state are not included in the study.

2.5. Design

A survey research design was used for the study since it involves soliciting from sample of technical teachers, information on the professional competencies of technical teachers; a factor analysis of the training needs of technical college teachers in Ekiti State.

2.6. Population

The population of the study consists of all technical teachers in the four state government technical colleges in Ekiti State.

2.7. Sample and Sampling Techniques

There are only 60 qualified technical teachers in all the colleges of study. Due to the small size of the population the entire population was used for the study.

2.8. Research Instrument

The instrument for the study was a structured questionnaire titled, "professional competencies training needs of vocational technical teachers; a factor analysis of the training needs of technical college instructors questionnaire (PCTNVTTQ) made up of 15 items developed by the researcher that was derived from the literature review and information that sought to know the professional competency and training needs and strategies to sustain professional competency acquired and those that are still required by technical college teachers in Ekiti State.

2.9. Validity of the Instrument

The validity of "PCTNVTTQ" was certified by two experts from the department of vocational and technical education, Ekiti State University Ado-Ekiti.

2.10. Reliability of the Instrument

To determine the reliability of this instrument, a test-retest procedure was used, 20 vocational technical teachers drawn from outside the study area were used. A gap of two weeks was given between the first and the second test i.e. the test and re-test. Upon the computation of the result, a reliability co-efficient of 0.72 was obtained.

2.11. Administration of the Instrument

In administering the instrument, a research assistant was appointed and trained to help in the administration and collection of the questionnaires. A 100% return rate of the instrument was achieved.

3. Data Analysis Techniques

The mean and standard deviation were the main statistical

tools used in the analysis of data for the study. Mean that fell below 2.50 were regarded as needed and mean of 2.50 and above were regarded as not needed. This resulted into two categories of decisions. "Need and not needed. On the strategies for sustaining professional competency among technical teachers, mean that fell 2.50 were regarded as important. Here two categories of decisions, "important" and "not important" were also resulted.

Analysis of Professional Competency Needs of Technical College Teachers in Ekiti State.

Table 1. N=60

N0	Item	X	SD	Decision
1	To gather necessary learning material, practice and tested before the real instruction	2.27	0.73	Needed
2	To aid students to the basic process skill of observing, classifying, and recording critical point of instruction especially the practical procedures	2.17	0.81	Needed
3	To breakdown an occupation or job into its component parts instruction for guidance purposes	2.15	0.65	Needed
4	To draw from personal vocational interest to enrich instruction	2.35	0.61	Needed
5	To develop and use instructional material and teaching apparatus which will facilitate learning	2.33	0.60	Needed
6	To establish relationship among facts, concepts, principle and skill in your area of specialization	2.25	0.62	Needed
7	To keep all poisonous and inflammable workshop material out of reach of student and boldly labeled "danger or poison".	2.18	0.72	Needed
8	To sequence and structure learning experience to provide learning in the most shortest time and tasks in most appropriate order for effective learning	2.13	0.82	Needed
9	To determine the source of practical work or simulation material that will be the basis for instruction and practice	1.97	0.73	Needed

Analysis of Improving Strategies and Techniques for Sustaining Professional Competency among Technical College Teachers in Ekiti State.

Table 2. N=60

10	Attends workshop/seminar with science base teachers where guided discovery as a method of instruction is mostly used which equally can be applied in TVE	3.77	0.52	Important
11	Acquires full knowledge of technology as a high academic standard that leads to high achievement and advancement of its graduate into higher education	3.77	0.52	Important
12	School to work as the basic intention of technical and vocational education and given it more support than work force training	3.62	0.68	Important
13	Exchanges observations visit on innovation ideas and view point of fellow technical teachers and others in science and related teaching profession	3.53	0.75	Important
14	Continuous acquisition of new skill/information needed to keep pace with both technology and teaching profession advancement	3.68	0.53	Important
15	Schools to co-opt with outside experts in various areas of specializations for continuous assistance in practical work.	3.38	0.68	Important

4. Results

Table 1 reveals that items 1-9 have strong agreement with means ranging from 2.15 to 2.35 and standard deviation (S.D) less than 1. Table 2 again shows that item 10-15 have a strong agreement with means ranging from 3.38 to 3.77 with standard deviation (SD) less than 1.

5. Discussion

Table 1 shows that many technical college teachers are not competent. From the table, it can be deduced that this incompetence can be attributed to neglect and inadequate caring for the technical college curricula implementers. Closely related to this, is their over dependent on improvised teaching materials at the expenses of the real equipment and materials needed for instruction as practiced in advanced

countries. To start with, technical college teachers most especially those that are yet to reach administrative cadre are neglected in the scheme of things needed for competency improvement.

Lacking among competency needed for effective instruction as revealed by items 1-9 are professional competence to gather necessary learning material, practice and tested before the real instruction, aid students to the basic process skills of observing, classifying, and recording critical points of instruction especially the practical procedures, break down job into its component parts, instruction guidance purposes, drawn from personal vocational interest to enrich instruction, develop and use instructional material and teaching apparatus that facilitates learning, keeping poisonous and inflammable workshop materials out of the reach of students, establish relationship among facts, concepts principles and skills in specialized area; sequencing

and structuring learning experiences to provide learning in the most shortest time and tasks in most appropriate order for effective learning and to determine the source of practical work of simulation material that will be the basic for instruction and practice. Lack of these professional competencies without missing word will hinder the horizontal and vertical articulation within the education system and between school and the world of work. Thus, this will give room for criticism and discrimination.

Table 2 also showed that technical college teachers in Nigeria are not expose to workshop seminar, means of acquiring technical base knowledge and skills and exchanges observation visit. This was confirmed by items 10-15 where the respondents strongly agreed that it is a thing of prime importance to expose them to strategies and techniques that can sustain their competencies. It was revealed too by table 2 that technical college teachers have not been supported or assisted by outside or local experts in the handling of practical instructions and this contradicts UNESCO (2004) that skilled professionals working outside education should be invited to teach in schools. Universities or other educational institutions in other to link the world of work more closely to the classroom.

6. Conclusion

With above discussion, it is practically clear that there is no way that the technical college teachers can present day technology. This chaotic situation can be attributed to the breaking down of most equipment used for instruction for long without being repair or replaced; gross shortage of expendable materials; deny them (technical teachers) of taking part in decision that relate to technological development as well as their welfare; inadequate training given to these teachers by various technical teacher training institutions, poor funding of various technical education programmes at all levels including the stage and none caring of the society for our technological development are serious base to our technological advancement.

Recommendations

Base on the result and discussions of this paper, the following recommendations are therefore made;

1. All technical teacher training institutions as a matter of necessity should work in concert and produce an acceptable curriculum that will foster the needed competencies to our young teachers in training and those already in the field through in-service training.
2. This study only investigate technical teachers' professional competency, the study should be carried out on occupational or specialization so that the competency needs of the various occupation can ascertained.
3. For the purpose of development, Nigeria should gear effort towards tapping from her intellects the needed strategies that can be adopted to give technology education a better outlook.

4. Government should embark on ways of encouraging the local expert in various field of technological specialization to assist and take part in the implementation of practical aspect of technical college curricula.
5. All states of the federation should reduce their technical colleges to two or three at most with each school running separate courses. This will give room for better management, co-ordination, supply of equipment and other instructional materials.
6. Technical teachers training programmes (TTTP) which is no more existing should be made to return and be more effective than before.

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