INTERNATIONAL JOURNAL OF CONTEMPORARY AFRICA RESEARCH NETWORK
Publication of Contemporary Africa Research Network (CARN)
Volume 1 (1), 2024
Available online: https://journals.iapaar.com/index.php/ijcarn/issue
DOI: 10.5281/zenodo.10570128

MEASUREMENT AND EVALUATION OF PRAGMATIC SKILLS IN TERTIARY INSTITUTIONS IN NIGERIA: CHALLENGES AND WAY FORWARD

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Abstract

Skill-based education is education which aims at delivering knowledge, skills and competences required in a particular occupation for the world labour market. Skill-based education is very important as it develops a person for life and it affords the competences which are necessary in a democratic and knowledge-based society. In order to assess the effectiveness of skill-based education, technical and technological teachers need skills in measurement and evaluation techniques. These techniques are very imperative to skill-based education teachers because they impart knowledge and demonstrate skills, which must be measured and evaluated within the context of pedagogical attainment. The objective of this paper was to synthesize selected documents indicating current issues on skill-based education in Nigeria. Recommended efforts have been made toward this goal by the NCCE, NBTE and NUC, which have provided the curricula for training skill-based education teachers in order to assist them developed measurement and evaluation skills. The researchers recommends among others that teacher should be assisted to develop checklist and rating scale for evaluating demonstration lessons and the learner's attitudes towards technical profession. Also, professional development programmes should be based on academic standards, learning goals and the identified needs of students and teachers. Newly recruited teachers should have less demanding assignments than more experienced teachers. They should have opportunities to observe measurement and evaluation assessment from experienced teachers.

Keywords: Measurement and Evaluation, Pragmatic Skills, Skill-Based Education Teacher

Introduction

Teaching is a highly complex activity. This is because teaching is a social practice that takes place in a specific context (time, place, culture, socio-political-economic situation etc.) and therefore, reflects the values of that specific context (Cochran-Smith, 2006). However, teaching does not lend itself to a single acceptable definition. Irrespective of the differences in the general view of experts in education, teaching revolves around certain concept and terms; a process, a means, system, method, an act, an experience, ability, advice or development that involves an interaction between persons or object in order to influence and affect behaviour patterns of those to whom it is directed (Ayonmike, Okwelle & Okeke, 2013). In any pedagogic setting, data are gathered most times not as measures of specific educational goals but as tools to help educators and teachers make decisions about what goal should be set or what instructional procedures should be employed to achieve the set goal (Udoka, 2012).

Measurement and evaluation is one component of a comprehensive teacher's growth and development system (Ayonmike, 2013). The terms "measurement," and "evaluation" have important characteristics that is considered in this research. The two items are often used interchangeably. However, they have very distinctive meanings and interpretations. Measurement involves collecting specific information about an object or event that normally results in the assignment of a numeral to that observation. Evaluation on the other hand, involves attributing a meaningful value to the information collected. As anticipated, evaluation denotes placing a value on the obtained measurement. The values can be compared to a reference population (i.e., norm-referenced) or to some type of standard (i.e. criterion-referenced). However, with both measures, a value is placed on what the students has achieved.

According to Ozioma (2011), everybody involved in teaching needs to be well trained in the nature, characteristics, attributes and procedure of measurement and evaluation in education. Only trained teachers can make distinction between attributes (Ayonmike, 2014). Similarly Umunadi (2013) posited that teachers are responsible for making their practice as effective as possible. Akerele (2007) and Okafoafor (2010) stated that teachers must continue to address key questions about their profession, such as: What forms of preparation do prospective teachers need for success in today's classroom? How can new teachers demonstrate the skills, knowledge, and capacity required for competent practice from the outset and for accomplished practice over time? What current practices do we need to reform, transform, or eliminate? With what do we replace them? How can compensation systems that support teacher's profession and development help teachers improve their practice in meaningful ways? According to National Policy on Education (FRN, 2013), two of the aims of skill-based education and training are:

a. to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel, who will be enterprising and self-reliant, and

b. to enable Nigerian young men and women to have an intelligent understanding of the increasing complexity of technology.

Nduononwi, Surveyor, Nduaesa & Bassey (2017), listed the objectives of skill-based education to include the followings:

i. to assist the students develop an insight and understanding about industry and its place in our society. Since industry is a constructive, dynamic force in the world today, it is the responsibility of the school to provide opportunities for students to understand this force better.
ii. to assist the students develop problem-solving abilities related to materials, processes, and products of industry. The problem-solving approach in TVET involves creative thinking and gives the students the opportunity to apply principles of planning and design, construction techniques and computations to the solution of problems.
iii. to assist the students develop skills in the proficient and safe use of tools and machines.
iv. to assist students to make choices regarding educational and occupational goals.
v. to trained students to exhibit safe behaviours in the workshop and relate these to situations in the school, home and community.
vi. to assist students and trainees to evaluate manufactured and constructed projects on the bases of set criteria such as quality of construction, appropriateness of materials, function, utility or purpose.

From the above stated objectives, one can agree that skill-based education is the supreme component of human resources development with unlimited potentials for supplementing better value to the good and services and for improving the worth of life and that of the citizens. skill-based education is one of the greatest forces that can be used to bring about change. Dike (2009) believes that TVET is one of the greatest investments that a nation can make for the quick development of its economic, political, sociological and human resources. Furthermore, Etuk and Asukwo (2015) stated that the present educational system, with its emphasis on technical and vocational education, if firmly rooted in its methods of assessment can be perceived as the most potent instrument that can be used to bring about desirable changes or development of the nation's economy. The dispensation therefore, would enable the recipients to be better, more useful and more productive citizens of the nation.

Relevance of Measurement and Evaluation Training in Skill-Based Education

1. **Training for teaching improvement:** this paper does not agree to the argument whether teachers are born or made. Everybody needs training and or retraining, either for improvement or for acquisition of skills. Skill-based education thrives on given level of creativity, psycho productivity and ingenuity on the part of the trainer and the trainee. This

makes it even more demanding for better preparation of an individual through formal training in order not to stifle the creative tendencies of learners through ignorance and uniform rigidity. High quality teachers are likely to produce high quality students; this is because no teacher imparts knowledge or skill than what he/she possesses to his/her learners (Udoka, 2012; Nwogu and Nweanomo, 2011; and Odu, 2011). This has remains one major problem of skilled development in the informal sector training in this country. The competency of the craftsman is, in most cases questionable. The competency of the skills teacher is very relevant because he/she use every technique at his/her disposal to maintain the learners' interest until the desired level of skill is attained. The application of skill acquired through training is desired above the means of learning.

2. **Training for better evaluation:** as old as measurement is with man and education, it cannot be confidently prepared and utilized without training (Dike, 2009). Psychologists still emphasize that the best measurement is only an approximation of the true value (Danielson and McGreal, 2000). One can, therefore, infer that measurement by untrained hand is as good as none at all. Skill-based education teachers need good training in test and measurement. This will make them more objective in assessing the several and varied approaches which creative student's exhibit. Training will also enhance their ability to assist on the pursuit and attainment of the right skills at the desired level (Sadiq, 2001). Sadiq further stated that valid measurement and evaluation of learners' performances are vital in ensuring the quality of graduate produced. Such effort requires an intelligent decision making. As observed by Ekpo (2010), such a process involves systematic sorting out of scores to enable decision to be taken on the test results by attaching values to students performances. It also involves the determination of the congruence between performance and objectives (Darling-Hammond, 2010). For such decisions to be considered intelligent in education, they have to be on a sound information base. The extents to which this information may be considered depend on the validity and reliability of the data gathering instrument. If skill-based education teachers are not well informed about the characteristics of measurement and evaluation, how can they write and administer valid measurement? Measurement involves the identification and definition of given attributes, determining sets of operations to be adopted and establishing a set of procedures, translating observations into quantitative statement of degree or amount (Danielson and McGreal, 2000). The characteristics to be measured must be clearly defined and the procedure to be used must be properly identified and strictly adhered to. The untrained teacher would hardly understand one human trait with another when evaluating learners. Skill-based education teachers need better preparation and training in measurement and evaluation to enable them judge correctly when the desired skills have been acquired for a given level (Oduma, 2007).

Challenges to Skill-Based Education in Nigeria

Major issues emerge as challenges to skill-based education in Nigeria. These challenges are: **Low External Efficiency** - a pre-condition for an effective skill-based education system is the

availability of reliable labour market information. Reliable employment-related data are almost non-existent (Little, Goe and Bell 2009). Available statistics depict only a small part of the total picture. The absence of valid and reliable labour market data and information means that skill-based education institutions have to plan their programmes and curricula with insufficient information on the types and numbers of craftsmen and women, skilled workers and technicians that are in demand in the country (Little, Goe and Bell 2009). Economic Policy Institute (2010) noted that Nigeria has no comprehensive Labour Market Information System (LMIS) data base. This leads to (1) difficulty in finding suitable workers for modern enterprises; (2) increasing unemployment of school graduates, especially from the general secondary schools; (3) unmonitored frequent migration of workers. Also, there is mismatch in training and labour market requirements because out-dated curriculum continues to be in used for the training and preparation of the needed human resources. Even the curriculums that have been revised do not adequately reflect labour market needs (Udoka, 2012). Neither is the private sector's participation solicited. Textbooks, reference materials, computer courseware, multimedia packages, or other aids to teaching and learning are in short supply or non-existent. Thus, only very few benefits from the revised curricula have occurred. Individual schools also need greater flexibility to adjust their programmes to local demand, as the process of modifying centrally controlled curricula is bureaucratic and time consuming.

Low Quality Training Programmes - there is a serious disparity between the qualifications of job seekers and the skill requirements of employers, mainly because some skill-based institutions teach skills that are not in conformity with the requirements of the industrial sector and that of the labour market (Okafoafor. 2010). As most students learned very narrow skills on old machines at schools, they often find themselves unemployed or working as unskilled workers. Most machines in factories, especially those in joint venture companies are new to the students. Therefore, employers have to retrain them to operate these machines. Udoka (2012) believe that if unemployment and underemployment pose a serious long-term development challenge to the nation, the shortage of skilled labour caused by these mismatches is an immediate problem to be tackled in order to bring about economic growth.

Shortage of Skilled education teachers: national development has a direct link with education and education of the teacher at any level should be the priority of any country wishing to develop in all facets of human endeavours (Dokubo, 2013). If it is accepted that no education system can rise above the quality of its teachers and that education is the catalyst for all spheres of human development, then it follows that a country that harbours poor quality skill-based education teachers will remain undeveloped and thus suffers the consequences of under-development. Many tertiary institutions across the country (Nigeria) are inadequately staffed (Nwogu & Nweanomo, 2011). In most departments especially in skill-based education programmes, the number of qualified skill-based education teachers for each specialized area is in short supply. It is an indisputable fact that without quality skill-based education teachers, practical works which is an essential component of skill-based education programmes will be difficult to implement (Ayonmike, 2014). Acquisition of skills requires that strict attention and supervision should be given to every student. In other words, individualized instructions become very difficult during

practical due to shortage of skilled skill-based education teachers and this affects performance of both the teachers and students as teachers are made to teach many skill-based education courses without practical. However, many skilled TVET teachers have always abandon teaching for other better jobs that have better remuneration. According to Ajibola (2008), teaching is gradually becoming a profession for fresh graduates of universities and colleges of education who are ready to call it quit, without provocation, as soon as they find better and high paying job opportunity. Oluwale, Jegede and Olamade (2013) stated that attracting qualified staff into teaching and teacher training in skill-based education was a problem for most countries including Nigeria.

Poor Planning and Administration: the planning and administration of skill-based education suffers from a series of problems that constrain the operation of existing programmes and the development of new ones. According to Dike (2009), potential employers of skill-based education graduates are not sufficiently involved in planning, formulating, and evaluating training programmes, as the skill-based education system was developed without adequate attention to labour market requirements. Also Dokubo (2013) believes that the administration of skill-based education is constrained by budgeting and accounting systems that do not permit planners to a. determine the total costs or unit costs of specific training programmes; b. estimate the most cost-effective means of meeting identified training needs; and c. make medium-term plans on the basis of available resources. Due to the above stated facts, skill-based education programmes lack clear priorities and are not developed on the basis of the market viability (Oluwale, Jegede and Olamade, 2013).

Non-use of Appropriate and Approved Methodology: one other outstanding constraint in the teaching and learning of skill-based education is the non-use of appropriate and approved methodology (Okobia, 2011). In addition to normal lectures, the teaching of skill-based education subjects require the use of variety of teaching methods and techniques some of which are instructors/teachers' centred methods, learners' centred methods, content focus methods and interactive/participative methods etc. It is sadly noticeable that while some teachers adhere to these professional practices, a number of others do not. It is either that they are unaware of these methods or are indifferent to their use.

Lack of Adequate Equipment and Infrastructural facilities: most skill-based education departments in higher institutions Nigeria do not have well equipped laboratories, workshops and usable infrastructures (Oluwale, Jegede & Olamade, 2013). Where these exist, they are grossly inadequate, obsolete and in a dilapidated state. Oduma, (2007) posited that what is seen and referred to as skill-based education laboratories in various institutions today are eye-sores as the laboratories only have items or equipment that were provided at the point the departments were established, in some cases, may be up to 10 – 20 years old.

However, most skill-based education departments in some higher institutions still depend on engineering workshops with obsolete equipment and machineries to teach skill-based education courses. Opeoluwa (2009) in Dokubo (2013) indicated that only 40% of tertiary institutions in Nigeria have adequate laboratories and well equipped workshop with enough spaces for skill-based education programmes. Opeoluwa further stated that 60% of other

institutions do not have laboratories or workshop spaces and this affects the quality of technology programmes in higher institutions. Opeoluwa concluded that this situation is partly responsible for increasingly difficulty to run experiments/practical effectively for students and thus making the teaching, learning and research in skill-based education difficult.

These constitute a major gap in the quality of input and output in education, thus, the non-attainment of the set objectives and goals of skill-based education. However, institutions that are not properly and adequately equipped will turned into producing unqualified and ill-equipped skill-based education graduates who ordinarily are supposed to be the driving force for the economic and industrial transformation of the country as experienced in developing countries like China and Turkey. Lack of adequate equipment and infrastructural facilities has contributed to poor performances on the part of students. Little, Goe, and Bell, (2009) reported that the provisions of adequate and appropriate infrastructure are indispensible to the educational process but inadequacy and inappropriateness in educational system contributed to a fall in standard of education.

Conclusion

The primary purpose of assessment and evaluation is to strengthen the knowledge, skills, dispositions, and classroom practices of professional educators. Based on the findings of this study, it was concluded that measurement and evaluation of practical skills in Skill-based institutions in Nigeria are faced with different challenges emanated from various factors such low external efficiency, low quality training programmes, shortage of skilled-based teachers, poor planning and administration, non-use of appropriate and approved methodology, lack of adequate equipment and infrastructural facilities. When assessment of practical skills is transparent and openly collaborative, teachers and prospective teachers can build professional communities and learn from one another. This process can only occur in non-threatening environments.

The way forward

Based on the findings of this study, the researchers recommend the following which is believed will address, if implemented the challenges of measurement and evaluation of practical skills in skill-based institutions in Nigeria

1. Professional development programs should be based on measurement and evaluation of practical skills in skill-based education benchmark standards and the identified needs of students and teachers.

2. Newly recruited teachers should have less demanding assignments than more experienced teachers. They should have opportunities to observe measurement and evaluation assessment from experienced teachers.
3. Government should increase its funding of Skill-based educational and financial institutions that provide on lending to psychomotor skills like NERFUND, TEDFUND, ITF and so on.

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