

## EVALUATION TECHNIQUES FOR ASSESSING VOCATIONAL AND TECHNICAL EDUCATION PROGRAMMES

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### ABSTRACT

*This paper attempts to present a wide range of evaluation techniques useful in assessing vocational and technical education programmes. The techniques outlined in this write up are not exhaustive due to space and time constraint. However, the most important areas were given detailed treatment. Functions of evaluation in vocational and technical education which give rise to the three (3) main types of evaluation namely; formative, summative and ultimate were explained. Finally, the meaning and approaches to programme evaluation in line with technical and vocational education programme were also highlighted.*

### Introduction

In simple terms, evaluation refers to the estimation of the worth of a thing, process or programme in order to reach meaningful decisions about the planned process or programme. It is also a means of ascertaining the worth of an endeavour in terms of set objectives (Chidolue, 1988). According to Okoro (1993:68), "evaluation is the process of finding the adequacy of the amount of knowledge or skill possessed by students". The term 'evaluation' is generally used in two senses: first, it is used to connote the process of making value judgment or making decisions about events, objects or their characteristics. Evaluation in this sense is purely qualitative and is preceded by measurement. Secondly, it is used in a broader and more encompassing sense as a process of seeking, obtaining and quantifying data with a view to making value judgment about objects, events or their characteristics (Nworgu, 1992). Evaluation is also seen as the process of determining information for use in finding the worth of a programme, product, procedure or objectives. On the whole, one can

say that, education cannot be complete until judgment is passed with respect to the expected outcome of educational input by the teacher.

Although the major concept in this paper is evaluation, it will be an added advantage to explain the following terms for better understanding of the concept:

**Measurement:** This term is conceived generally as the process of assigning numerical value to objects in a systematic manner. This means that measurement is quantitative at the initial stage and as the precision improves, it becomes qualitative. Measurement is also the allocation to a position, a scale of greater than or less than. Such allocation can be both quantitative as well as qualitative. Nworgu (1992) views measurement as a predict, the value or position on a scale of assignment to an object. In other words, it is the end point or result obtained during the process.

**Test:** This is narrower in scope than measurement. William (1983) said, it represents a structured situation comprising a standard set of questions to which an individual is expected to respond to. A test therefore, is not the same thing as measurement. In the activity of evaluation, test is an integral part and it comes in various forms e.g. objective test, essay test, performance test, projects, assignments, written reports etc. Test is a very important component of evaluation as we cannot evaluate a great deal of educational outcomes without the use test. Test can be regarded as an instrument, and the process of using test as an instrument is called testing.

**Assessment:** Worthen and Sanders (1973) sees assessment as, the process of assessing, examining, determining or scrutinizing the performance of individuals. Assessment and measurement are almost similar as they both use test as instrument of examining, determining and scrutinizing performance and or achievement of an individual.

### **Purpose of Evaluation in Vocational and Technical Education**

Evaluation is the test component of the curriculum either at the macro or micro levels. Evaluation is necessary because the educators used it to assess the success or failure of a teaching and learning activities. The following are considered as the purpose of evaluation in vocational and technical education.

- a. **To Serve as Feedback to Students and Teachers:** After a period of rigorous training in both theoretical and practical skills, the learners are assigned tasks to execute in the form of test or practical assessment, the learners were allocated grades and scores. These scores and grades show the extent to which the objectives of the lessons, courses and practical skills have been attained by both the teachers and students. Such feedback serve not as a waiting factor, but as a reinforcement. If the teacher discover through the process of evaluation that his or her students do not perform well, he or she may wish to examine his or her instructional procedures. Evaluative information therefore enables the learner to learn better and the teacher to teach better.
- b. **To Serve as a Pacing of Instruction:** A good evaluation procedure must follow some logical sequence so that what is learnt today and evaluated today should logically lead to what is to be learnt and evaluated the next day. For instance, when evaluating a topic or practical skill, it is discovered that the objectives measured were poorly attained, it will be needless for the teacher to proceed with the next topic or activity. He or she need to re-teach and the learners to re-learn the topic or activity before proceeding to the next level. Evaluation helps the teachers and learners to pace their teaching and learning.
- c. **To Serve as a Diagnosis to Learning Difficulties:** When tests are appropriately constructed and administered, it is possible to see some students who may have failed in the examination because certain concepts or procedures were not properly mastered, it is therefore insufficient for the teacher to conclude that the students did not perform well in the given examination. He or she should try to find out where amongst the test items the individual student do have problems. After identifying the problem areas, the teacher has the responsibility of making adjustments.

As with vocational and technical education, some students may be good in theory but poor in practicals and vice versa. Evaluation therefore helps the teacher to identify students who constantly perform poorly or those who used to perform well but suddenly backpedaled. Such students should be referred to the student's guidance counselor for help. Evaluation does not only assist in the diagnosis of learning problems, but also provides objective basis for referring students to the appropriate quarters for assistance.

- d. **To Serve as Feedback to Parents and Guardians:** Normally every parent or guardian that sends his or her ward to vocational or technical school expects



to be regularly informed about the performance of the ward. Such information should not be a product of the teacher's personal opinion but an objective assessment of the student's achievements. Evaluation procedures therefore provides the basis for objective reportage to the parents and guardians. Following proper feedback, students performances could be reinforced at home through parental comments, guidance and activities.

- e. **To Serve as a Tool for Decision Making:** Evaluation procedures provide objective basis for making decisions. Frequently, teachers, school administrators and other stakeholders in the educational sector take decisions on which student should be moved to the next level of learning as a result of promotion, those to remain as a result of demotion exercise and those who should be advised to withdraw from the programme entirely due to non-performance. Such decisions are better arrived at through the aid of proper evaluation procedure, above all, evaluation information is used to determine who should be awarded certificates or not. In other words, without proper evaluation, there will not be any basis for certificates to be awarded no matter the level of education. Altogether, this shows the importance of evaluation in the educational practice.

### **Functions of Evaluation in Vocational and Technical Education**

Evaluation in vocational and technical education has three (3) major functions to perform and these functions give rise to three (3) types of evaluation which are stated below:

**Formative Evaluation:** According to Nworgu (1992:103), "formative evaluation is the type of evaluation carried out while the programme or curriculum is being developed". This means that, it provides feedback that can be used to bring about improvements in the programme or curriculum as the programme is still in progress or in the process of development. It helps in the medication and refinement in the programme, it influences instructional objectives, course content and teaching methods by revealing areas where students are weak and by exposing ineffective teaching methods. It also encourages the students to learn by revealing to them the progress they were making. Those that are not doing well may be induced by the result of a test to make greater effort in order to achieve success.

**Summative Evaluation:** This type is undertaken to determine how adequate the curriculum or programme is. It usually comes at the end of a unit course or programme. "Feedback from summative evaluation usually comes when it is not possible to effect modifications in the programmes" (Nworgu, 1992). Such feedback is used to decide on the overall adequacy of the programme. The main function of summative evaluation is to determine the extent to which the students acquired the technical knowledge and vocational skills they were taught. It also determines if the students acquired the minimum requirements necessary for entry into their vocation of their choice. A final examination is usually employed in summative evaluation, therefore, for the examination to be useful, its content must correspond closely to the requirement of the occupation that the students were trained for.

**Ultimate Evaluation:** According to Tyler (1971), this type of evaluation does not take place until the student has completed his or her course or training and has gained employment in his or her chosen field. Since the objective of vocational and technical education is to prepare persons for effective employment, ultimate evaluation determines the extent to which this objective has been satisfactorily achieved. The ultimate aim of any vocational and technical education programme is how well the trained individual performs in their places of employment. It is important to note that ultimate evaluation does not take place in the classroom or workshop but rather in the industry itself.

### **Programme Evaluation**

Programme evaluation is an evaluation of the whole programme to determine the extent to which it has served the purpose for which it was established. Information from programme evaluation may be used in programme planning, programme improvement, decision making, personal improvement and accountability, (Davies, 1971).

Programme evaluation also involves collection of data and the use of the collected data to assess the effectiveness and quality of the programme. Unless the aims of vocational and technical education programme are realized, the resources used in running the programme may be regarded as wasted.

Baldioin (1981) suggested that, for the effectiveness of programme evaluation, the following approaches should be adopted:

- Evaluation of student performance.
- Institutional self study
- Evaluation by external experts
- The follow-up study
- Evaluation by employer survey, and
- Accountability and cost evaluation.

### **Measurement and Evaluation of Students' Performance**

Measurement and evaluation of students' performance may yield information which can be used in assessing the effectiveness of a programme. This means that, evaluation of students' performance is particularly useful in a situation where students are required to take an external examination before graduation. If students from a particular school consistently perform well in such examinations, this can be regarded as an indication of the superiority of the programme offered by the school.

### **Institutional Self-study**

According to Baldoin (1981), this type of evaluation is carried out by the staff of an educational institution for the purpose of determining how efficiently and effectively the programme is being operated. It may focus on a narrow aspect of the institutions curriculum or it may deal with all aspects of the institutions operations, such operations may include: administration, goals and objectives, curriculum and course offering, students admission and welfare arrangement, number and quality of structures, equipment, tools and materials, methods of evaluating students' performance and the budgeting and accounting system. Institutional self study may provide information to the administration of the institutions which can be used for the improvement of the programme.

### **Evaluation by External Experts**

Unlike institutional self-study, this is carried out by personnel not directly connected with the institution being evaluated, Baldoin (1981). These external experts could be representatives of various accrediting, examination and government authorities. The functions of the team of experts may include assessing the programme offered by the



institution being evaluated and reporting back to whoever set up the team their findings. These experts may also be drawn from the universities, professional engineering and accounting organizations and business leaders. The administration of an institution conscious of the need to improve its programme may appoint an external body of experts to study their programme and make recommendations.

### **Follow-up Study**

Also according to Baldoin (1981), this involves contacting graduates of an educational programme after they had been in employment for some time and finding out from them their assessment of the programme of study they passed through. This is the most direct method of programme evaluation in vocational and technical education since the ultimate purpose of such programme is the occupational preparation of our youths. If a vocational or technical institution runs a 'good' programme as measured by the quality of course offerings, staff and equipment, but the graduates of the programme fail to secure employment or do badly in their places of employment, such a situation cannot be regarded as satisfactory. In a follow-up study, former students are usually sent questionnaires seeking information on the nature of their jobs, the usefulness and the relevance of their training and recommendations on how the programme of the institution (their alma-mater) could be improved.

### **Employer Survey**

This approach adopts the same procedure as the follow-up survey except that the questionnaire is sent to the employers of former students rather than to former students themselves, Baldoin (1981). It means that, employers are required to rate the skill levels and knowledge of the former students working in their establishments. They are also requested to assess the educational programmes offered by the schools and areas that require adjustments or improvements so that it can better serve their needs. Information from follow-up study and employer survey may be used in revising the programme objectives and course content so that students trained under the programme will better meet the needs of industries and businesses.

### **Accountability and Cost Evaluation**

Lastly, Baldoin (1981) suggested that, this type of evaluation should involve evaluating the accounting and budgeting system of an institution to ensure that available funds are used to achieve the greatest amount of benefit for the good of the institution. Accountability requires that adequate records are kept of income and

expenditures so that every transaction can be checked and justified. Accountability and cost evaluation guards against misuse and mismanagement of funds and it ensures that expenditure on new equipment or programme or even expansion of an existing programme are justified by the benefit derived. In this period of global economic meltdown, limited funds should be expended only for the provision of those courses, programmes, equipment etc which may yield maximum returns in terms of students learning and overall development of the country.

### **Conclusion**

Vocational and technical education programmes are activity based and therefore require constant monitoring through evaluation. It is the kind of educational programme whereby the theoretical aspect work is tandem with practical applications and all these teaching and learning strategies are geared towards making the individual student employable and self-reliant. Because of its monumental importance, vocational and technical education programme require all the stakeholders in education to come together in occasional assessment and evaluation of the programmes. The stakeholders include educational administrators, parents, teachers, traditional institutions, non-governmental organizations (NGOs) and even the students. Constant assessment and evaluation of the programme by all persons mentioned above will enhance better performance and proper utilization of resources in achieving the desired goals, aims and objectives of vocational and technical education programmes so as to make Nigeria self-reliant and also to change its present status from being a technology consumer nation to a vibrant and producing nation of technology, which understandably is the current trend towards self-realization and self-actualization, as no nation can survive without a functional technology base for its economy and social standing to strive.

### **Recommendations**

1. Constant evaluation of technical and vocational education programmes should be made a habit as this is the only way the effectiveness of the programmes can be assured.
2. The government (both federal and state) should provide the needed equipment and materials required for the programmes and to desist from the usual lip service about their commitment to education.



3. The inspectorate division of the ministry of education should ensure that the equipment and materials if provided, are properly distributed and utilized in the various secondary schools.
4. Follow-up study on graduates of the programmes in their places of employment should be given priority because by so doing, things that need adjustment can be discovered and the findings applied to the programmes in the schools.
5. Students of these programmes should put extra efforts in their studies and they must realize that, the technological future of the country lies in their hands.
6. Finally, if truly we intend for Nigeria to be among the top twenty economies of the world by the year 2020 as intended by the present administration, then it becomes the responsibility of all to achieve. Economical independence can not be achieved without a sound technological base, which can only be achieved through sound technical and vocational education programme.

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