Technological Challenges in Implementing TVET Programmes in Nigeria

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ABSTRACT
This chapter discussed technological challenges in implementing TVET Programmes in Nigeria. It presented TVET as a comprehensive term referring to those aspects of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life. Concept of Technology and Technology in TVET were discussed with focus on the present challenges to the integrating technology in Nigerian TVET programmes. The chapter offered key factors for Technology implementation in TVET Programmes in Nigeria and beyond such as professional development, leadership, organizational and institutional structure, resources and support. The listed and discussed factors, which facilitate implementation of TVET Programmes will play positive role in every stage of the intervention, from the initial planning and exploration phases to helping to sustain the intervention once fully implemented.

INTRODUCTION
The Quality of Technical and Vocational Education and Training (TVET) programmes needed for Nigerian industrial, economic, social development and advancement will be enhanced by the judicious application of technology. As the Nigerian society is continuously moving towards a knowledge-based economy, in which the application of knowledge is very crucial, the use as well as the study of technology in the production processes has become more imperative and thus demanding sophisticated work skills. Utilization of Technology in TVET programmes will go a long way to improving teaching, learning and development of needed skills to making an individual more productive and applying knowledge for improving processes, products and services. However, technology usage in education poses a lot of
challenges in proper implementation of TVET programmes in Nigerian educational and training systems. The cost of technology, its rapid evolution, and the special knowledge and skills required of its users pose substantial barriers to effective utilization. This chapter therefore, explores some immediate technological challenges in such areas of administration, policy framework, curriculum development, implementation and evaluation, research, distance learning and professional development of the TVET educators as well the possible approaches to tackling them.

After reading this chapter, the reader will be able to;

1. Describe the roles of TVET in national development of Nigeria.
2. Explain the concept of technology and technology in TVET.
3. Discuss the importance of technology in implementing TVET programmes.
4. Identify six technology fluencies of TVET Learners.
5. List and explain at least five technological challenges in implementing TVET programmes.
6. List and explain possible approaches to tackling the technological challenges.
7. Enumerate four key factors for technology implementation in TVET programmes.

THE ROLES OF TVET IN NATIONAL DEVELOPMENT OF NIGERIA

TVET refers to a range of studies, activities, practices and learning experiences which are relevant to the world of work. It is used as a comprehensive term referring to those aspects of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life (Federal Ministry of Education, FME, 2014 and UNESCO & ILO, 2002). The Nigerian formal TVET systems includes Universities, Polytechnics, Monotechnics, Colleges of Education (Technical), Technical Colleges and other specialized institutions like Innovation Enterprise Institutions, Vocational Enterprise Institutions, National Vocational Qualifications Framework etc. while the informal systems work mainly through apprenticeships. The overriding goals of TVET in Nigeria are to: provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels; provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development; and give training and impart necessary skills to individual who shall be self-reliant economically. Thus Information Communication Technology (ICT) and entrepreneurship education, in recent times, are being embedded into the curriculum and there is a greater desire at the policy level to deliver training to meet industry needs.

Originally, the direct preparation for work was the main goal of TVET, and this remains prominent in many developing countries. But with the technological revolutions and innovations in science and technology, during the 21st century, new domains of knowledge and new disciplines have become important at all levels of education and training. The need for the use of technology in TVET is beneficial for preparing teachers and learners to be fully involved and be productive in the world of work. It is maintained that “if the individuals (Students and teachers) do not follow the technological and scientific evolution, they will become academically and professionally obsolete” (Dias, 1999). Technology is a viable means and process of teaching and learning practical skills; its uses in delivering TVET subjects will enhances performance, increase interest and retention as well as the capability of applying knowledge in addressing specific tasks. It facilitates individualized instruction to both the learners and teachers,
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