

# An Investigation into the Challenges Facing the Implementation of Technical College Curriculum in South West, Nigeria

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## Abstract

The study investigated the challenges facing the implementation of Technical College Curriculum in South West, Nigeria. The purpose was to determine whether the Teachers and Instructors that implement the curriculum are professionally qualified or not and to investigate other challenges facing the teaching and learning of Technical and Vocational Education in Technical Colleges. The study employed survey research design; the sample consisted of 120 Basic Science Teachers and Technical Instructors selected from Technical Colleges in two States (Ondo & Ekiti) using multistage sampling technique. Questionnaire on Challenges Facing Curriculum Implementation (QCFCI) with reliability coefficient of 0.72 was used to collect necessary data. The data collected were analysed using descriptive and inferential statistics. The study revealed that 65.83 percent of the Teachers and Instructors are professionally qualified to teach in Technical Colleges. The study highlights the following as the major challenges facing the implementation of the modular Curriculum in South West, Nigeria: lack of in-service training and poor condition of service of Teachers and Instructors, outdated equipment, unstable government policy; lack of standard workshop for practical work and lack of related modern instructional materials. The study also revealed that there was no significant difference between the view of the Instructors and Teachers on the challenges facing the implementation of the curriculum. In conclusion many factors are responsible for poor implementation of Technical College Curriculum as identified in the study. It was recommended among others that the government should provide the necessary and required human and non-human resources needed in Technical Colleges.

**Key Words:** Implementation, Curriculum, Challenges, Technical Instructors, Basic Science Teachers and Qualification.

## 1. Introduction

Technical and Vocational Education (TVE) has been an integral part of national development strategies in many Societies because of its impact on productivity and economic development. To make TVE more meaningful and relevant, its inception into the formal school curriculum accelerated youth empowerment. Youth are equipped with vocational and technical skills to be self-reliant. Youth are the engine house of any nation; when the youths are adequately empowered, the nation is empowered as well (Oviawe, 2009).

Technical and Vocational Education helps in the acquisition of practical skills needed for self-reliance and national development. The aim of TVE is to make people to be creative and productive for a better living. The beneficiaries of TVE have the comparative advantage of being employable and employers of labour. Despite its contributions, it was observed that the leaders of Nigeria have not given this aspect of education the attention it deserves, that is one of the reasons for the nation's underdevelopment. United Nations Educational Scientific and Cultural Organization (UNESCO) (2005) cited in Abubakar (2009) stated that Vocational and Science Education training is the primary agents for mobilizing communities towards sustainable development by increasing people's capacities to transform their visions for themselves and their society into reality. Education and training provide scientific and technical skills as well as the motivation, justification and social support for pursuing and applying them.

Technical college graduates have 3-tiers advantage; they can become educationists or industrialists or proprietors. Every individual is called to this challenge to be creative. They should use their talents and abilities to explore various career opportunities using available local resources irrespective of social, economic, political and religious status. Just as a youth graduate explores to be self-reliant, so also teacher and lecturer should explore available resources to create wealth (Oviawe, 2009).

Effective implementation of technical college modular curriculum needs extra resources and support. At a time of economic recession such as that which presently exists in Nigeria, the shortage of financial and human resources creates more difficulty for the implementation of technical college curriculum throughout the state. It was observed that Policy objectives are not being met because of the quality and quantity of teachers and instructors to implement the new curriculum. It was also observed that professionalism does not reflect on the teachers or instructors who are to implement the curriculum, and the teachers produced over the years have fallen short of national expectations and needs of the society. Gidado (2001) agreed that inadequate number of

qualified teachers and poorly trained teachers is another problem facing the implementation of technical college curriculum.

Black and Atkin (1996) indicated that the challenge facing African Science, Technology and Mathematics (STM) educators is how to use existing resources to achieve their new goals. STM teachers have to set up classroom routines using available resources and routines that they believe are practical, innovative and creative. The teacher must devise instructional strategies that will ensure meaningful learning in spite of scarce resources. The varieties that affect teaching and learning students' behaviour, students background knowledge, readiness for learning, social status, availability of vocational and technical product, ICTs are changing fast in contemporary Nigeria. Teacher-trainers at all levels, including education officers and inspectors of technical education should attach themselves to urban and rural schools to obtain first-hand information and experience about these variables. Otuka (2001) believed that familiarization with the working of schools in both settings will arm them to guide the students effectively rather than using old training techniques or untested theories on newly emerging problems.

Otuka (2001) concluded that the teacher is the key; a well-trained and motivated teacher will make the difference in coping with any new curriculum. Lindsley (1990) introduced the use of precision teaching that has its roots in free-operant means that "Students are free to respond at their own pace without having restraints placed on them by the limits of the materials or the instructional procedures of the teachers. Precision teaching is best described as a tool for basing educational decisions on changes in continuous self-monitored performance frequencies displayed on standard celebrations charts".

Teacher preparation in vocational and technical education is the uppermost concern of educational planners and administrators. The importance of teacher and teacher education has been clearly underscored in the National Policy document which states that "no education can rise above the quality of the teacher (FRN, 2004). Teachers are largely responsible for the translation and implementation of educational policies, curriculum or course offerings instructional policies, curriculum or course offering, instructional material packages and assessment of learning outcomes at the level of learners. Alongside the instructional leadership role, the teacher exerts a great deal of influence on character formation and the process of socialization of children within the learning environment.

Attitude of female towards Science and Technology is another challenge facing the development of science and technology in Nigeria. In the Nigerian society however, observations show that men are competent, skilful, assertive, aggressive and able to get things done. Women on the other hand are warm and expensive, tactful, quiet, gentle aware of others feelings and lacking in competence, independence and logic (Akinleye, 2000). Adebule (2004) stated that present study compares the scores of male and female students on a locally standardized Anxiety Rating Scale in Mathematics for Nigeria Secondary Schools in which the male perform better than the female students.

Maines (1985) argued that men can become narrowly focused on Mathematical study, while women tend to spread their energies and attentions over a range of activities and social relations. Time tabling of subjects, assessment procedures, teacher expectations and behaviour peer pressure unequal, funding and stereotyped textbooks are among the long list of schooling features thought to contribute to gender inequality. Teachers' attitudes and practices in particular have been singled out. A survey of secondary school teachers in Britain (Pratt, 1985) found teachers of Mathematics, Physical science, Technical craft and Languages best in favour of equal opportunities initiatives. Spear (1985) reported large numbers of science teachers agreed with statements advocating traditional rules for women.

The team working on the Girls into Science and Technology (GIST) project in the United Kingdom observed science teachers trying to attract boys' attention by suggesting that science was "macho" by, for instance, stressing its dangers (Whyte, 1985). Babafemi (2000) opened that most parents would not encourage their children/ wards to attend Vocational and Technical Colleges to make a career because such schools and careers are viewed with contempt and regarded as the only option for the less intelligent. Students' disposition to science has been a major concern of all realizing the overriding importance of Science and Technology in the modernization process globally. This realization made the Federal Government of Nigeria to stipulate a ratio of 60:40 in favour of science in the NPE (Odetoyinbo, 2004). Hurd (1983) in Odetoyinbo (2004) reported that the state of pre-college education in Mathematics and Science in the United States described the situation as worrisome in the sense that students do not particularly like science and the dislike in acquire early.

Nigeria since its independence in 1960 has been struggling with designing and implementing a sustainable educational curriculum that adequately prepares her children for adulthood. Several years later, the country faces the rising tide of an educated but unemployable workforce, as Nigerian students graduate from Secondary, Technical and Tertiary Institutions without essential workplace skills (Marinho, 2009). Based on inarticulate policies, inadequate research, and poor planning, curriculum implementation has become ineffective and lack any useful feedback mechanism anchored in review, analysis and redesign process.

It was observed that the new modular curriculum fails to take into account useful pedagogical methods that assist in achieving goals. Although, it recommends learner-centered approaches to instruction, traditional method of learning remains dominant. Despite calling for high-level cognitive skills, there are few instances where curriculum expectation includes measurable comprehension, application, analysis, evaluation and problem solving competencies. More works need to be done to let go of outdated modes of knowledge accumulation such as rote learning and adopt methods that engage the students in high-level cognitive activities, which stimulate thought, analysis and reflection during curriculum development need to plan, planning a curriculum involves series of organizational methods that are focused on achieving optimal student comprehension.

Curriculum implementation is the stage in which learning activities, teachers and learners are involved in negotiations aimed at promoting learning. The teacher adopts the appropriate teaching method and materials to guide students learning. The students on their own are actively involved in the process of interaction with learning activities. Curriculum implementation refers to what actually happens in practice as compared to what was supposed to happen. Curriculum implementation includes the provision of organized assistance to staff in order to ensure that the newly developed curriculum and the most powerful instructional strategies are actually delivered at the classroom level. There are two components of any implementation effort that must be present to guarantee that the planned changes in curriculum and instruction succeed as intended.

- Understanding the conceptual framework of the content /discipline Being implemented; and
- Organized assistance to understand the theory, observe exemplary Demonstrations have opportunities to practice and receive coaching and feedback focused on the most powerful instructional strategies to deliver the content at the classroom level.

## **2.1 Research questions**

1. Do the qualifications of the teachers and instructors contribute to the poor implementation of technical college curriculum?
2. What are the challenges facing the implementation of technical college curriculum?

## **2.2 Hypothesis**

There is no significant difference between the view of the instructors and teachers on the challenges facing the implementation of technical college curriculum.

## **3. Methodology**

### **3.1 Research Design**

The study employed survey research design for investigation into the challenges facing the implementation of Technical College Curriculum.

### **3.2 Population**

The population for the study consisted of all the entire basic science teachers and trade technical instructors in the approved technical colleges in South-West Nigeria by National Business and Technical Examination Board (NABTEB) (Teacher is whose job is to teach General Science subjects like Physics, Chemistry, Mathematics, Biology, Computer etc while Instructor is whose job is to teach the theory and practical aspect of trades modules in technical colleges).

### **3.3 Sample and Sampling Techniques**

The sample for the study consisted of 40 basic science teachers and 80 trade technical instructors selected using Multistage Sampling Technique. In stage one, two states (Ondo and Ekiti) were selected using Simple Random Technique. In stage two, five Technical Colleges were selected from each state to make a total of 10 Technical Colleges out of 15 technical colleges that exist in the two States for the study using Purposive and Stratified Sampling Technique. In stage three, 20 Basic Science Teachers and 40 Trade Technical Instructors were drawn from Technical Colleges in each state to make a total sample to be 120 using Simple Random Technique.

### **3.4 Research Instrument**

The instrument titled Questionnaire on Challenges Facing Curriculum Implementation (QCFCI) with five point likert scales (Strongly Agree=SA, Agree=A, Undecided=U, Disagree=D and Strongly Disagree=SD) rated 5, 4, 3, 2, and 1 respectively was used to collect necessary data. To ensure the validity of the instrument, the face and content validity were ascertained by evaluation expert, curriculum expert, and experienced science and technology teacher in technical college. The construct validity of the instrument was ensured by administering 20 copies of the instrument on 20 selected convergent groups with coefficient value of 0.78 using product moment correlation while the reliability of the instrument was also ensured by administering copies of the questionnaire on the respondents that were not part of the sample for the study. Cronbach alpha credited to Cronbach (1951) was used to estimate the consistency of the instrument with reliability coefficient of 0.72.

### **3.5 Procedure for Data Collection**

The QCFCI was administered on the selected respondents in the approved technical colleges.

### **3.5 Data Analysis**

The data collected were analysed using appropriate descriptive statistics of frequency counts, percentage, mean, standard deviation and inferential statistics of t-test. The research questions raised were answered using descriptive statistics (mean and standard deviation). The decision point was based on the mean average score of the 5 point likert scale. The mean of 3.0 is taken as the bench mark for taking decision such that a mean response that falls below 3.0 was regarded as Disagree while a mean response on or above 3.0 was regarded as Agree. The hypothesis generated was tested using t-test to find the difference between the mean value of the instructors and that of the teachers on the challenges facing the implementation of technical college curriculum at 0.05 level of significance.

#### 4.1 Results and Discussion

##### 4.2. Research question one

Do the qualifications of the teachers and instructors contribute to the poor implementation of technical college curriculum?

**Table 1: Frequency and Percentage Distribution Based on Technology Teachers Qualifications**

Variable	Categories	Frequency	Percentage (%)
Qualification of basic science teachers & technical Instructors	NCE	7	5.8
	HND	6	5.0
	HND/PGDE	10	8.3
	B.Ed	16	13.3
	B.Sc	30	25.0
	B.Sc(Ed/PGDE)	42	35.5
	M.Ed	4	3.3
	M.Sc	1	0.8
Others	4	3.3	

Table 1 presents the categories of basic science teachers & technical instructors. It can be observed from table 1 that 79(65.83%) of the teachers and instructors hold certificates in education-related discipline which proved them to be professionally qualified to teach basic science and trade modules in their related field, the categories of teachers and instructors that are qualified to teach hold NCE, HND+PGDE, B.Ed, B.Sc(Ed/PGDE) and M.Ed, while 41(34.17%) of the instructors hold HND, B.Sc, M.Sc and other qualification like Advance National Technical Certificate (ANTC) and related diploma certificate which made them not to be professionally qualified to teach in technical colleges.

##### 4.3. Research question two

What are the challenges facing the implementation of Technical College Curriculum?

**Table 2: Challenges Associated with the Teaching-Learning Process.**

S/N	ITEMS	$\bar{X}$	S.D
1	Inadequate Resources affect the implementation of the new curriculum.	3.99	1.21
2	Lack of in service training and poor condition of service affect my efficiency.	3.04	1.33
3	The available equipment supplied to the school is outdated.	3.50	1.28
4	Unstable government policy on vocational and technical education affects the implementation of the new curriculum.	3.95	1.11
5	Lack of standard workshop for practical work to complement the theoretical aspect of the new modules affects the implementation of the new curriculum.	3.93	1.14
6	Lack of basic knowledge in ICT affects the teaching of the trade module.	3.37	1.27
7	High difficulty level of the textbooks introduced in the new curriculum affects the implementation of the curriculum.	2.91	1.25
8	Over- growing class size affects the implementation of the new curriculum.	2.96	1.35
9	Lack of related modern instructional materials affects the implementation of the new curriculum.	3.66	1.10
10	Poor communication skills and understanding of some basic concept by the students in the new curriculum affect the implementation.	3.31	1.21
11	A busy school time-table affects the implementation of the new curriculum.	2.98	1.36
12	Increasing variety of subject matter contents affects the implementation of the new curriculum.	3.12	1.36

N = 120

Table 2 revealed that the statement in item 1, 2, 3, 4, 5, 6, 9, 10, and 12 were agreed upon by the teachers and instructors as the challenges facing the implementation of the curriculum for technical colleges. It was revealed that inadequate resources (3.99), lack of in-services training and poor condition of service (3.04), outdated equipment (3.50), Unstable government policy on vocational and technical education (3.95), lack of

standard workshop for practical work to complement the theoretical aspect of the new modules (3.93), lack of basic knowledge of ICT (3.37), lack of relevant modern instructional materials(3.66), Poor communication skills among students (3.31), and increasing variety of subject matter content (3.12) are the major challenges facing the implementation of technical college curriculum. In item 7, 8 and 11 were disagreed upon by the teachers and instructors as the challenges facing the implementation of the curriculum for technical colleges. It was revealed that highly advance textbook (2.91), over-growing class size (2.96), and a busy school time-table (2.98) are not the major challenges facing the implementation of the technical college curriculum.

#### 4.4. Hypothesis

There is no significant difference between the view of the instructors and teachers on the challenges facing the implementation of technical college curriculum.

**Table 3: T-test on the Challenges Facing the Implementation of Technical College Curriculum.**

Source	N	Mean (X)	S.D	Df	t-cal	t-crit	Remark
Teacher	40	40.209	6.402	118	0.535	1.960	NS
Instructor	80	40.912	7.515				

NS = Not significant ( $P > 0.05$ )

Table 3 shows that ( $t_{cal.} = 0.535$ ,  $P > 0.05$  level of significance) the null hypothesis is accepted. Therefore, there is no significant difference between the view of the instructors and teachers on the challenges facing the implementation of the modular curriculum for technical colleges.

#### 4.5. Discussion

The study revealed that the bulk of technical instructors and basic science teachers in Technical Colleges hold professional qualification. The Federal Ministry of Education (1995) and Qualification Recognition (2011) recommended that the minimum qualification for teaching as from 1998 will be Nigeria Certificate in Education (NCE).The Federal Ministry of education (2003) recommended that the minimum qualification of Technology teachers required for teaching will be Advanced Craft Certificate or HND plus teaching qualification or Bachelors degree. Teachers and instructors qualifications have no much effect on the implementation of technical college curriculum because 65.83 percent of them are qualified. Omirin (2001) cited in Omirin (2004) stated that the quality of teachers is the important factor in the school system which influences the performance of students.

The study also revealed that inadequate resources are part of the challenges facing the implementation of the curriculum. Other factors such as: lack of in-service training and poor condition of service of teachers and instructors, outdated equipment, unstable government policy; lack of standard workshop for practical work and lack of related modern instructional materials also affect the implementation of the curriculum. Oviawe (2009) stated that opportunities for continuous training and restraining, competitive pay scales, good incentives and rewards and good working relationship is the major determinant for human resources development and capacity building in any schools or organizations. The study also revealed that unstable government policy on vocational and technical education is also one of the challenges facing the implementations of the curriculum. This is in agreement with the finding of Suleiman (2009) stressed that poor attitude of policy-maker (government in power, administrators, ministry of education officials etc) is one of the challenges facing the implementation of any school programme.

The study shows that lack of basic knowledge in ICT affects the teaching of the trade modules; poor communication skills and understanding of some basic concepts by the students in the new curriculum is another factor that affect the implementation of the curriculum. Adeniyi (2001) identified a dearth of language instructional materials as one of the major contributions to the low level of implementation of any school curriculum leading to poor results and a very low level of communication. Oranu (2001b) suggested that the teachers should resort to the use of Pidgin English since some of the terminologies not in native language. Increasing variety of subject matter contents affects the implementation of the new curriculum. This finding is in agreement with the study of Adedibu and Olayiwola cited in Suleiman (2009) that the weakness of science and technology teachers is as a result of poor preparation in implementing the major concepts of the curriculum which include among others: Lack of professionalism, Lack of indebt knowledge of the subject matter and entrepreneurial skill, poor attitude to work, and Poor ICT skills.

In addition to the above, the study revealed that there is no significant difference between the view of the instructors and teachers on the challenges facing the implementation of the modular curriculum for Technical Colleges. Dantani and Shehu (2009) stated that the processes of delivering Science, Technology and Mathematics (STM) contents have been characterized by a lot of problems which include; nature of STM teachers and their interest, availability and adequacy of materials for teaching STM, contents of textbooks and their relevance / adequacy, cost and problem of the use of language in STM teaching. This finding is also in line

with Suleiman (2009) submission that inadequate materials / equipment for teaching of science subjects, proper remuneration / motivation of teachers and poor attitude of policy makers are the major constraints for effective implementation of STM. This finding is in agreement with the study of Oviawe (2009) that inadequate supply of technical teachers, funding, and supply of instructional facilities is among of the challenges of technical and vocational education in Nigeria. Ugwu (2004), Matazu (2009) cited in Suleiman (2009) also stated that one of the goals of education spelt out in the National Policy on Education is “the acquisition of appropriate skills and the development of mental, physical and social abilities and contribution to the development of the society”. These goals may be difficult to realize in a school system where equipment/instructional materials for teaching science and technology are inadequate and appropriate. Ogunleye (2007) cited in Suleiman (2009) argued that the provision of science equipment materials in grossly inadequate in schools and these adversely affect the implementation of science and vocational curriculum, he stressed further that inadequate laboratory facilities is a common feature in most of the schools today. The study also revealed that fund and safety facilities are not available, adequate and the same time not utilized. From the findings, furniture and well equipped library are fairly available, not adequate and the same time not utilized.

### 5.1 Conclusion

The study exposes the number of teachers and instructors that are professionally qualified to teach in technical colleges and those who are not qualified, which shows the degree of effectiveness of teachers and instructors on the implementation of technical college curriculum. The findings of the study revealed that many factors such as: Lack of basic knowledge in ICT; poor communication skills and understanding of some basic concepts by the students in the new curriculum are responsible for poor implementation of technical college curriculum. The study exposed the prevailing curriculum on technical and vocational education learning situation and its implementation. In view of the fact above as revealed by the study there are need to provide standard workshop for practical work to complement the theoretical aspect of the new modules and improve the teachers and instructors condition of service. I wish to acknowledge the authors of books and other referenced used in this study either directly or otherwise.

### 5.2 Recommendations

The following recommendations were made:

1. Teachers and instructors with Higher National Diploma (HND) should be encouraged to proceed for their Post Graduate Diploma in Education (PGDE) so that they can be professionally qualified. The teachers/instructors should be allowed to proceed on study leave and the placement should be done immediately as soon as they present their certificate after completion of such programmes. Those with advanced craft should not be allowed to teach in technical colleges while those with higher qualification should be employed into the system.
2. Government should equally try to improve on the funding of Technical and Vocational Education at Technical College level by purchasing modern hand tools, equipment, machine, equipped technical workshop, purchase laboratory facilities, furniture and safety facilities. The fund allocated to Technical Colleges should be monitored.

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