

Development of Conceptual Framework for Integration of Work-Based Learning into Technology Education in Nigeria

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ABSTRACT

The research was conducted to develop a conceptual framework for integrating work-based learning into ETE programme at the Nigerian tertiary education level. Four (4) research objectives guided the development of WBL conceptual framework in this study. Methodology: A mixed method approach with a planned data collection using exploratory sequential design was adopted. The study was implemented in two phases; phase 1 qualitative using interview and document analysis. This was followed by a quantitative phase where data was collected using a developed and validated questionnaire. The participants were the representative sample of full-time TVET teacher trainers, students and industry-based supervisors in the service industries in Nigeria selected using purposive sampling for qualitative phase and cluster sampling procedure for quantitative. The instrument of data collection was developed and validated questionnaire on WBL using the Rasch Measurement Model Procedure through a pilot study. The data collected was analysed using thematic analysis, SPSS 25 and SmartPLS 3 by conducting the Structural Equation Modeling (SEM) analyses; assessed the measurement, structural models and finally developed the framework. The findings of this study provide reliable evidence of the relevance of WBL in the ETE programme from the perspectives of the stakeholders. Similarly, relevant WBL components suitable for integration into ETE in Nigeria were highlighted. Furthermore, the findings revealed that, the challenges of implementing WBL include policy factor, attitudinal factor, funding and linkage. Finally, the results of structural model provides the structural relationship to express strong connection between challenges, components and WBL perception which may signify a significant alignment with the proposed model. The findings of the research based on the discussion in and the current reality would provide strong connection that highlighted multiple implications to practice, and policy for improvement in the delivery of ETE curriculum in Nigeria.

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INTRODUCTION

Education is the oldest of all discipline of human career acquire both in formal and informal settings. Education is paramount to development, hence, all nations of the world are on the race to improve their educational system because for the

development and sustenance of meaningful society. Vijay (2017) viewed education as a tool that enhances useful and analytical potential that open up chances for people to accomplish more usage of labour market and incomes. A functional education system is not only an instrument for

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mere acquisition of knowledge but a viable instrument of widening and enhancing individual participation in overall nation building for quality life. For instance, Government of Nigeria in its National Policy on Education (FRN, 2004) affirmed that education is an instrument of national development and desirable social change. It is an undeniable fact that no society can develop beyond the educational level and human capital development of its citizenry. Hence, to develop a nation economically, the growth of educational system for improved human capital development is paramount. This is because; education provides individuals with the opportunity for self-empowerment through intellectual development, positive change of attitude, knowledge and skill acquisition for self or paid employment for sustainable livelihood.

Education, especially the type that leads to a vocational and technical skill acquisition, industrial and technological development had been a major means for economic enlightenment, national development, self-reliance and citizenship confidence-building (Nwosu & Micah, 2017). Marope, Chakroun, and Holmes (2015) described TVE as all forms of education that involves, furthermore to general education, the study of related sciences, technologies and the acquisition of attitudes, practical skills, and knowledge linking to occupation in numerous sectors of economic life (Techanamurthy, Alias, & DeWitt, 2015, 2018). TVE is that type of education that trains student for a rewarding job in a specific occupation and career as a skilled worker and professional. It is the component of general education which provides students with basic practical and cognitive skills necessary for entry into world of work of self-employed. TVE is receiving global attention because of its strategic position as a veritable tool for the development of a nation and a panacea for curbing unemployment amongst youth (Akor, Agashi, Ekuje, Akoh, & Ebenehi, 2016). According to Alhasan and Tyabo (2013), TVE is expected to provide youths with knowledge, skills and training that satisfy the human resource demand of the nation. Dike (2009); Seyi (2014) noted that TVET is major component development plans in industrialized

nations due to its effects on efficiency, industrial and economic advancement.

The components of TVE are integrated into the educational system in Nigeria from the basic, post basic and tertiary education levels. There are prevocational subjects taught to students at basic level which is the basic educational levels that span from primary school to junior secondary school. Also, to create awareness at post basic level about TVE education system in Nigeria (Lawal, 2014; Nwosu & Micah, 2017). Apart from required subjects, happens to be basic knowledge in field of study subjects and in nature, students are to select based on their interest and performance. There is selection of TVE subjects that are necessary for students to pick from. The fact is to place emphasis on entrepreneurship and skill development (Nwosu & Micah, 2017). TVE curriculums are prepared to be practical in nature to ensure the accomplishment of their set objectives. The goals of TVE according to Federal Government of Nigeria (Federal Republic of Nigeria (FRN), 2013) are to (i) provide trained man-power in technology, business and applied sciences (ii) give technical and vocational knowledge and skill necessary for economic development and (iii) provide training and teach needed skill for self-reliance economically. In Nigeria education system, TVE programmes are propounded at technical colleges at the secondary school level, Vocational Training Institutes and Centers and tertiary institutions such as colleges of education, polytechnics and universities (Nwosu & Micah, 2017). At tertiary education level, one of the areas of TVE where a student can enroll for specialized training is electrical technology.

Electrical Technology Education (ETE) is been offered at technical colleges as vocational course and offered as technical course at higher institutions or educational level. ETE programme is an instructional programme that trains people to apply necessary technical skills needed to install, operate, repair, maintain both residential, commercial and industrial based systems, AC and DC motors, control and distribution of electrical panels (Monroe Career and Technical Institute



(MCTI), 2018). Okoro (2006) noted that ETE is today offered in colleges of education, polytechnics, and universities at tertiary institutions in Nigeria with the aim of acquainting individuals with attitude, knowledge and required skills that make them functional members in the world of work, thereby contributing to nation building. ETE is a very important vocational trade because virtually all high and low-tech devices encompass utilization of electric current to operate. However, ETE do not involve only the design and manufacturing of electrical gargets but installation, operation and general maintenance of the systems (Bright Hub, 2016). Hence, due to practical and skill-oriented nature of electrical technology, instructions are better delivered through action-based method such as work-based learning (WBL).

Work-based learning (WBL) is an instructional procedure in where students are simultaneously exposed to instruction in learning and work-place or industry. WBL is experiential learning programmes that apply the workplace as a vital part (component) of the educational programmes (Okon, 2011). WBL organized learning experiences are given to the students through the combined efforts of industry and the institution. This set up benefits learners chances to get a variety of skills after introduction to rigorous academic activities concurrently with practical career growth (Amadi, 2013). WBL builds a strong connection between the world of work, classroom instruction and career opportunities, as neither institutional based learning nor involvement of student in professional occupation alone ensures the existence of suitable learning to the level of fulfilling the qualification necessities of the work-world (Jerrard & Jefsoutine, 2006).

Since ETE programme is introduced to train learners with profundity comprehension of electric and electronic knowledge and skills through implanting of the practical and theoretical contents (Sarimah Ismail & Mohammed, 2015). The instruction in ETE emphasizes practical applications of essential electrical skills for employment in the electrical occupations (Monroe Career and Technical Institute (MCTI), 2018). The

WBL experiences appropriate to ETE include: field trips, job shadowing, school-based enterprises, youth apprenticeship, cooperative work experiences, industrial training and many others (Orji, 1996; Schrenko, 2010; Virginia Department of Education, 2015). Based on the prior significance of WBL and the roles of a functional TVE in Nigeria's technological and economic development, there is to ensure adequate utilization of its components in attaining the desired goal of TVE in Nigeria. Thus, provision of scientifically developed and validated WBL framework is necessary for integration into the present ETE Programme at Tertiary Education in Nigeria.

Problem Statement

Technical and Vocational Education in Nigeria has for a very long time challenged with different form of inadequacies. Inadequate funding of technical and vocational training institutions in Nigeria led to the production of less quality graduates as there is no fund to build laboratories, and preserve workshops, or even provision of up-to-date teaching and learning equipment (Okoye & Arimonu, 2016) noted that. Qualified and skilful instructors may not be engaged. Those that, are employed, as a result of unattractive payment leave the teaching professions for other areas, but move to well-paid jobs particularly in the industries abroad. Staffing of technical education and training for effective work-based experience is generally inadequate.

In addition to the lack of trained personnel to handle the implementation of WBL in TVE in Nigerian tertiary institutions Eke (2011) observed that, WBL has not been well recognized in Nigerian schools. The teaching and learning approaches in TVE in Nigeria are still mainly conventional (Eke, 2011) which cannot foster significant cognitive thinking skills among the students (Bransford, Brown, & Cocking, 2000). The inactive traditional instructional strategies adopted in Nigerian Tertiary institutions are teacher-centred which are based on behavioural learning theories (Oranu, 2003). This led to the serious challenges faced by TVE graduates in Nigeria. They lack the relevant skills required by

employers' as well as for self-employment. The increasing rate of unemployment among Nigerian youth among other factors is responsible for the escalating poverty index and rising anti-social behaviours.

This draw back implies that, the curriculum provision in Nigerian TVE institutions is inadequate and the graduates of such institutions are deficient in terms of employability skills. TVE programmes in Nigeria are being rendered to: mere suppliers of semi-skilled or not-at-all-skilled labour to the job market; inability to train students with requisite knowledge, attitude and skills (Bubou et al., 2015). Similarly, a preliminary survey report conducted by the researcher highlighted comparable issues to the implementation of WBL and production of skilled graduates for employment in Nigerian industries. These revealed constraints (poor teacher quality, poor policy frame-work, lack of WBL implementation framework and curricular defects) mean that, there is absence of framework for implementation of the WBL in TVE.

In view of these and many other problems that seem to originate due to the absence of a framework for WBL implementation. This study intends to conduct an investigation into the problem and develop conceptual framework for embedding WBL into the existing ETE curriculum used at the tertiary education institutions in Nigeria. In pursuit of this goal the conceptual framework will be developed and tested for its validity and implementation possibility in Nigerian institutions. This will be a noble contribution to the improvement in TVE curriculum delivery and production of trained personal with adequate employability skills which is the topmost priority of ETE Curriculum in Nigeria.

Objectives of the Study

The main aim of this study is to develop a conceptual framework for integrating work-based learning into ETE programme at the Nigerian tertiary education level. The study seeks to specifically:

- i. Identify the relevant WBL components for integration into ETE programme at tertiary institutions in Nigeria.
- ii. Determine the perception of school-based stakeholders on relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria.
- iii. Determine the perception of workplace stakeholders on relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria.
- iv. Find out the challenges to implementation of WBL in ETE programme at tertiary institutions in Nigeria.

Research Questions

In line with the research objectives, the following research questions were developed and answered in the process of this research.

- i) What are the relevant WBL components for integration into ETE programme at tertiary institutions in Nigeria?
- ii) What are the perceptions of school-based stakeholders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria?
- iii) What are the perceptions of workplace stakeholders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria?
- iv) What are the challenges to implementation of WBL in ETE programme at tertiary institutions in Nigeria?

METHODOLOGY

This research adopted mixed methods as research design which includes both quantitative and qualitative approach. This method collects, analyze and integrate quantitative data as well as qualitative data to get a better understanding of a research (Creswell, Plano Clark, Gutmann, & Hanson, 2003). The



approach is commonly referred to as mixed methods (Creswell & Creswell, 2017), however, it is also termed as multi-strategy (Bryman, 2006) as well as two-phase model (Clark & Ivankova, 2015). In this study, Exploratory Sequential Mixed Methods Design (ESD) was adopted as a planned data collection and analysis for the development and validation of conceptual framework for the integrating of Work-based Learning into electrical technology Education (ETE) program at tertiary institutions in Nigeria.

ESD is a two phases research design. In ESD design, analyzed qualitative data is used to generate themes for the development of quantitative instruments to further explore the research problem (Creswell and Clark 2011). In the first phase, data was collected and analyzed qualitatively using interview and document analysis. This was followed by a quantitative phase in which data was collected using a developed and validated questionnaire. This order helps to explain the qualitative results achieved from the first phase (Creswell et al., 2003).

Population refers to the entire subjects, events, objects or individuals in which the research is intended on (Shedrach, 2014). It is referred to as the group of people or objects with certain characteristics of interest to a researcher. According to Alvi (2016), research population is the entire members that meet certain stated criteria for a particular research project while accessible population are those that are reachable at the time of data collection and who participated as respondents from which data for the research are collected.

Sample in research means portion or sub-set of the entire members of the population to be investigated. Sampling in research is important because, it is almost impossible to study all the members of a population for a research project except in a situation like this where the population is small and can easily be covered. Anyakoha (2009) stated that, there are different forms of sample which include simple random sampling, stratified sampling, convenience sampling, all these samples types are purposely used to select a representative sub-set of the larger population. Alvi (2016) viewed sample as a group of relatively

smaller number of people selected from a population for investigation purpose.

The population of the qualitative phase were the entire technical educators in the institutions of higher learning in Nigeria and the Industry based supervisors in the cooperating industries receiving TVE students on attachment. Due to complex nature of Nigeria the sample for the qualitative part of this study were twenty-five (25). Lecturers and school administrators ($n = 15$) and industry-based supervisors ($n = 10$). The decision to target a sample size of 25 is generally in line with sample size recommendations of Creswell and Creswell (2017).

A purposive sampling method was employed to choose the participants for the qualitative part of this study. The sample was from the tertiary institutions offering TVE Program in ETE at the undergraduate educations level Bachelor degrees (B. Ed or B. Tech) and the industries that serve as cooperating place for SIWES. Purposive sampling procedure was applied in selecting sample because it involves regular selection of sample based on the purpose of this study and their relevance to the research objectives. The purposive sampling approach is considered as a common non-probability sampling technique that the researcher will use to make a selection in relation to the problem under investigation (Terrell, 2015).

Research population is considered as the total number of all persons, objects, happenings or concepts that concerns the research (Shedrach, 2014). Three (3) group of respondents were involved in this study, comprising of all the full-time TVET teachers' trainers, students and industry-based supervisors in the tertiary institution and master craft-men in service industries in Northern Nigeria.

In this study, the researchers utilized a cluster sampling method to sample from the three (3) sub-region of Northern Nigeria. These regions include North-West (7 States), North-Central (6 States) and North-East (6 States). The states selected for this study include any state that has an institution running TVE (Electrical Technology Education). Since the study seeks to establish a conceptual framework for integrating of work-



based learning into electrical technology education (ETE) in TVE program at the Nigerian tertiary education level. All the tertiary institution in the states offering TVE were utilized as a sample for the study.

The justification for the choice of cluster sampling in the research is that the population of this research is very large and spread across three (3) regions, therefore in order to save cost, time and transportation, cluster sampling was used for the study (Kumar & Natarajan, 2007)

The sample size of 319 were selected to participate in the main study. This comprised of Lecturers, students and industry-based supervisors. The 319 were selected based on the Research Advisor (2006) guideline for sample size in a study.

This research used two sets of instruments for the collection of qualitative and quantitative data for the study. The two sets of the instrument were interview schedule for collecting qualitative data while structured questionnaire was used for collecting quantitative data for the research. The combination of the two sets of instruments is an attempt to strengthen the results that was obtained from the research. In addition, the application of these techniques together facilitates the researcher to collect relevant and inclusive data on the nine aspects of functional work-based learning.

The instrument for this phase was semi-structured interview questions and the document of Electrical Technology Education Curriculum

The National ETE Curriculum for technical institutions and (ii) Electrical Technology Knowledge Assessment Procedure Designed by the National Board for Technical Education (NBTE, 2016) was reviewed to understand the required knowledge and skill in Electrical Technology.

The aim of conducting semi-structured interviews with stakeholders (technical teacher educators and the Industry based supervisors) was to explore their perceptions about the Work-based learning efficacy and implementation in tertiary institutions in Nigeria. The semi-structured interviews were useful way of exploring multiple

opinions and allow a researcher to probe for further information.

The research employed two forms of the instrument for collecting data. These are structured questionnaire. The instruments contain two sections each. Section A of the instrument contains information related to participant demographics. Then section B contains information to assess the variable of the research. The application of these techniques together facilitate the researcher to collect relevant and inclusive data on the nine aspects of functional work-based learning to be able to develop WBL conceptual framework for teaching in the Nigerian tertiary institutions.

On the other hand, the study used quantitative research technique through the use of structured questionnaire on nine components of work-based learning to collect data for this research. A designed five points Likert scale closed ended questionnaires were utilized. Hesse-Biber (2010) noted that the use of this type of questions to generate data is more appropriate in a quantitative study that requires numerical information. Muijs (2010) reported that the quantitative information to be obtained will help the investigator to describe and explain the major components of the research studies.

Validity is the process of determining whether a scale covers the area of content it sets to measure. Validity is one of the utmost crucial psychometric properties of a measuring instrument and it is concerned with whether a test or scale really measures what it intends to measure. It means the extent at which a research instrument measure what it supposed to measure and accurately. An instrument is valid to the degree that it empirically represents the concept it purports to measure. How reasonable is the inference made from what it is observed? The validity question strictly only applies to the inference made from what it is observed (Punch, 2014).

After developing the interview questions, validity was determined by the panel of experts in the field of Technology education and instruments development. None of this panel member was involved in the initial draft of the



questions. The experts assessed initial format of the questions and its content. The experts' ratings was used to conduct inter-rater reliability using Fleiss' Kappa.

In order to determine the validity of the instrument, instruments were given to the experts in Vocational and technical education, measurement and evaluation at some selected universities in Nigeria to check the content validity of the instrument. Their recommendations was duly considered and incorporated into the final draft. The Kappa test was conducted to estimate and presented to ensure content experts agreements.

To achieve the construct validity of the questionnaire a pilot test was conducted with a sample of experience technical teacher educators and industry-based supervisors similar to the study population.

Ethical approval was obtained from the appropriate authorities. After obtaining ethical clearance, the developed and validated Questionnaire and interview guide were given to the selected samples after giving them an instruction for the survey by the researchers with the help of research assistants. The procedure is explained in the following sub-sections:

The first procedure to collect data in qualitative phase was document analysis. The curriculum, syllabus and scheme of work of ETE program and work-based learning procedures was critically reviewed. Secondly, a face-to-face interview session was then be organized with the selected technical teacher educators and industry-based supervisors. Similarly, in the interview, the researchers worked directly with the respondents, in which the interview questions were posed to the participants with the aim of extracting in-depth information. The core task of interviewing is to get an understanding of the interviewees' opinions.

In this study, qualitative method was used to obtain the in-depth information from the respondents on framework for integrating work-based learning into Electrical Technology Education Programme. In this situation, the direct observed opinion of the respondents (explorations) gathered in this study through face-to-face encounter was recorded and analysed

using an established qualitative data analyses technique. The interview procedures on the components of work-based learning as stipulated in this study are suitable for the qualitative data collection process (Patton, 2005). This method was applied to collect more information on the complements of work-based learning that are considered for teaching at tertiary Institution in Nigeria

After obtaining consent the developed and validated questionnaires were given to the selected samples after giving them an instruction for the survey by the researchers with the help of research assistants. The instrument was given to the selected respondents and retrieved on completion by the researcher. The responses from the participants were coded, entered in excel and scored to be used as data for quantitative analysis.

Suitable statistical techniques were used to analyse both qualitative and quantitative data in the present study. The procedures are explained in the following sub-sections.

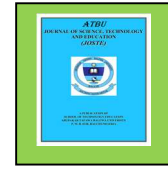
The documents that were examined were curriculum, and scheme of work of ETE program at tertiary institutions in Nigeria. The analysis was carried out to determine the other factors such as vision, mission and objectives of the program. Certain observations in the documentary analysis assisted to form the observation of facilities in tertiary institutions. Furthermore, qualitative data gotten through the interview was analyzed using qualitative analysis (transcription, coding, thematic and categorization), using NVIVO software. To be employed to analyze the quantitative data. The level of significance was set at 0.05 for all statistical tests.

DATA ANALYSIS AND PRESENTATION

The analysis focused on the major key areas of the study to ascertain how WBL in ETE can improve the graduate employability in Nigeria. The study results were analysed and presented as follows:

Answers to the Research Questions

Descriptive statistics of mean and standard deviation were used to answer the four research questions raised in this study.



Research Question One: What are the relevant WBL components for integration into ETE programme at tertiary institutions in Nigeria?

Table 1: Mean and standard deviation on the relevant WBL components for integration into ETE programme at tertiary institutions in Nigeria

SN	Mean	SD
1. Job shadowing	3.21	0.87
2. Mentorship	3.06	0.65
3. Service learning	1.80	0.45
4. Internship	3.02	0.58
5. Cooperative education	2.87	0.49
6. Registered apprenticeship	1.88	0.50
7. Direct instruction method	3.25	0.94
8. Problem solving method	2.33	0.33

From the table above, Work-based learning components in the ETE programme is highly required to expose the students and teachers to the real practical task and skills required for quality learning outcomes. From the quantitative data, the respondents recommended direct instruction method, job shadowing, mentorship, internship, cooperative education and problem-solving method as best teaching

methods that should be adopted to ensure students acquire the relevant skills for gainful or paid employment upon graduation. Meanwhile, using the traditional method of teaching the ETE students was discouraged by the respondents.

Research Question Two: What are the perceptions of school-based stake holders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria?

Table 2: Mean and standard deviation on the perceptions of school-based stake holders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria

SN	Mean	SD
1. Developing WBL in ETE based curriculum that offers students with quality of performance and standards required of them	2.89	1.07
2. Incorporating work place components to enable students to learn from ETE institutions and industry supervisors	2.51	1.02
3. Enforcing students to show acquisition of specific skill through assignments completion and assessment	2.57	1.04
4. Ensuring that only the WBL in ETE curriculum covering the demands of the industries are studied by ETE students	2.46	1.07
5. Ensuring that the students' graduation from the ETE institutions Is not based on the end of semester examinations, rather through Practical evidence of skill mastery for employability.	2.24	0.86

From the table above, participants from the focus group noted that the WBL can foster the connection between ETE institutions and labour market and therefore enhance the competence of the learners to develop employability skills

mastery. They, therefore, recommended training and retraining of the ETE teachers to facilitate the adoption of the WBL in ETE as well as the awareness of the benefits of the WBL to national development. The work-based learning program

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inclusion in ETE system will improve the skills and provide speedy learning process for both the students and the teachers, it will also offer opportunities for innovative teaching methods, including small group learning, self-directed learning and collaborative learning.

The respondents noted that through the WBL in ETE, it can be possible for the production of specific projects or products by the students as evidence of skill mastery, which should be the benchmark for ascertaining relevant employability. WBL as an approach to ETE, in which skills, knowledge, and attitudes are specified in order to define, steer and help to achieve competence standards, should be innovative to ensure that the learners are well equipped to move into the labour market. This study, therefore, proposes a national qualification framework through WBL if the ETE system must

improve. From the quantitative data analysis, the respondents showed that WBL no doubt has proven to be a means of approaching ETE that puts much accentuation on what the students can do independently because of the training, and all things considered speaks to a move far from an emphasis on the procedure associated with the training. The pattern of responses of the participants suggested that there is need to involve the industries when designing the WBL in ETE curriculum to adequately prepare the students for relevant employability skills and to ensure quality graduate outcomes.

Research Question Three: What are the perceptions of work place stake holders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria?

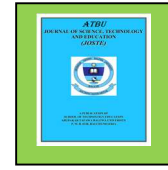
Table 3: Mean and standard deviation on the perceptions of work place stake holders on the relevant WBL components for integration in ETE programme at tertiary institutions in Nigeria

SN		Mean	SD
1.	Making the industries be in charge of WBL instead of academic staff.	3.15	0.13
2.	Encouraging 60% training in the industry and 40% in the institutions	3.35	0.45
3.	Adopting industries' based curriculum instead of the one designed by some non-skilled ETE lecturers or policy Makers.	3.30	0.43
4.	Building linkages with local and international industries to improve quality of graduates.	3.19	0.13
5.	Setting performance criteria that provide details of minimum competency level required of learners for graduation.	2.90	0.17

From the table above, the participants recommended training and re-training of the ETE teachers to enable them to develop the WBL skills to be able to impart the saleable skills to the students. The participants were of the views that the WBL in the ETE can assist the students to acquire the technical knowhow according to the requirements of the industries that will employ them, assist them to have self-sufficient skills to practice outside the school, but the awareness and acceptance is very low in the Nigerian ETE institution. Curriculum developers be educated on the need for adoption of the work-based learning,

which has the ability to building stronger relationships between the labour market and the ETE institutions in Nigeria. This will certainly increase the awareness and adoption of the work-based learning in Nigeria.

The assessment of the ETE students should be based on the labour market required skills mastery, which is possible through the WBL. The respondents recommended that there is an urgent need to raise the awareness of the WBL among the ETE teachers, the curriculum planners, and the ETE administrators and the policymakers; incorporate the WBL in the ETE system such that



the competence of the students can be confirmed based on the demands of the labour market.

Research Question Four: What are the challenges to implementation of WBL in ETE programme at Tertiary institutions in Nigeria?

Table 4: Mean and standard deviation on the challenges to implementation of WBL in ETE programme at Tertiary institutions in Nigeria

SN	Items	Mean	SD
1.	Poor perception and acceptance of ETE students	3.32	0.87
2.	Poor policies	3.30	0.53
3.	Inappropriate method of appraisal	2.19	0.13
4.	In adequate facilities	2.93	0.02
5.	Poor funding	2.35	0.43
6.	Poor staff training and retention	2.23	0.45

From table above, the participants identified several challenges ETE institutions face, which hampers the success of the programme: Poor perception and acceptance of ETE students in the society, poor policies, in adequate facilities, poor funding and poor staff training and retention. There are enormous challenges with those who design our curriculum or those who make policies for us. Industry experts should be allowed to design curriculum for us since our target is to produce competent graduate to be employed by them. We should seek partnership with the industries; we must not wait for them to look for us. The industries standard or demands should be the premise whereupon the ETE program, appraisal and learning materials be structured and developed. To achieve this, there should be a good connection between the industries and the ETE institutions.

DISCUSSION OF FINDINGS

From the findings of this study, it can be deduced that WBL in ETE will be a great tool for improving the graduate employment in Nigeria and beyond. It also found that ETE institutions currently teach students skills that are different from what the industries require and this affects the graduates negatively and hinders their chances of getting employed by the industries.

The study found that ETE curriculum should be designed strictly according to the requirements of the labour markets. One of the greatest challenges of the ETE system is that the majorities of the policymakers are not industry

experts, and therefore have little or no ideas about what the labour market demands.

The study discovered also that with WBL in ETE, the students will be prepared effectively for real the industries, which means that it takes into account the exact requirements or competencies the industries require. In other words, the students will be on the training according to the guidelines and rules of the industries. The beauty of WBL in ETE is that it involves the industries in the development of the programme rather than teaching students' courses that may not be relevant to the requirements of the industries. Even if the students at the end of the WBL decide not to work in an industry, they will be able to start small businesses, effectively run and manage such businesses having been trained based on the industries requirements.

Also, the concept of WBL in ETE should be a national issue that should feature in all governments' events to reduce the high graduate unemployment rate. It should be well promoted and funded by the governments since it centers on 'performing' rather than just 'knowing'. The study also revealed that the WBL can offer footholds for analyzing the connectivity between learning in school and learning in the industries, therefore, the policymakers should take into account the benefit that can be derived from the WBL in ETE.

CONCLUSION

Thus, in view of the severe economic situation and hostile environment, poor

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governance, the low system of education, high rate of inflation and poverty, there is no doubt that the current ETE's curriculum is not working effectively. It should, therefore, be redesigned to address solutions to the challenges of graduate related unemployment. However, enforcing the graduates to become self-employed may be a waste of human capital since the curriculum and the poor education system does not give room for graduates to become one. In this case, a better option will be adopting the WBL in ETE to ensure that the graduates have required skills the industries demand; if by any reason they are unable to join the industries (paid employment), the graduates can be self-employed having acquired the specific skills professionally.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

1. Direct instruction method, job shadowing, mentorship, internship and problem-solving method should be integrated into ETE programme to ensure students acquire the relevant skills for gainful employment upon graduation.
2. There should be training and re-training of the ETE teachers to facilitate the adoption the WBL in ETE programme as well as the awareness of the benefits of the WBL to national development.
3. ETE teachers, curriculum planners, ETE administrators and policy makers should be educated on the significance of WBL in the ETE system such that the competence of the students can be confirmed based on the demands of the labour market.
4. Good connection should be established between the industries and the ETE institutions to address poor perception and acceptance of ETE students, inadequate facilities, poor funding and staff training and retention.

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