PERCEPTION OF STAKEHOLDERS ON INTEGRATION OF WORK-BASED LEARNING (WBL) INTO AUTOMOBILE TECHNOLOGY EDUCATION CURRICULUM OF NIGERIAN CERTIFICATE IN EDUCATION (TECHNICAL) IN NORTHEAST NIGERIA

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Abstract

This study sought to evaluate the perception of stakeholders on integration of WBL into Automobile Technology Education curriculum of Nigeria Certificate in Education (Technical), in Northeast Nigeria. The study was guided by three (3) objectives, and three (3) research questions. A descriptive survey research design was used for the study; the population of the study is 172, which comprise students, lecturers, technologists, and industry-based automobile staff with. A sample of 140 was used for the study, in the ratio of 64, 47, 11 and 18 of the population respectively. The instrument for the study was a structured questionnaire developed by the researchers. The instrument titled Automobile Technology Education Work-Based Learning Questionnaire is made up of 34 items. Its statements are meant to elicit respondents' opinion on challenges of integration of WBL in Automobile Technology Education Curriculum of NCE Technical. The instrument validated by three experts from Technology Education Department of Modibbo Adama University Yola and trial tested to yield a reliability coefficient of 0.72, Research questions were answered using mean, and standard deviation. Findings of the study revealed that; stakeholders perceived that WBL integration into automobile technology education curriculum will face many challenges among which are: rejection of students from training institution for further training by managers of industries, ineffective policy framework for work-based training period etc. It also found that solutions to the challenges as: acceptance of students from training institutions by managers of industries, provision of modern facilities for training among others.

Introduction

The Federal Republic of Nigeria (FRN) (2013) states that, teacher Education shall continue to take cognizance of change of methodology, review of curriculum and the teacher shall be regularly exposed to innovations in his or her professional area. The NCE minimum standard (2020) also states that, The National Commission for Colleges of Education (NCCE), established by an Act in 1989 as the third leg of the tripod of excellence in the supervision of tertiary education in Nigeria has mandates which includes inter alia, the laying down of Minimum Standards for all programmes

of teacher education and accrediting their certificates and other academic awards. Since the inception of the NCCE, the Federal Ministry of Education has been pursuing vigorously and supporting the commissions' goals for quality assurance in order not to relent on the match towards the realization of the set goals of producing quality teachers which also include technical education teachers in all trades. According to Joseph (2017), Work-Based Learning (WBL) is a series of educational content which combines the school curriculum with the workplace to create a different learning paradigm. WBL deliberately merges theory with practice and acknowledges the intersection of explicit and tacit forms of knowing.

Most WBL programmes in tertiary education in some countries are generally accredited, and aiming at providing a means where the learner's needs and the industry requirement for skilled and talented employees are both met. Cappeli, Shapiro, and Shumanis, (2018) opined that, WBL programmes are targeted to bridge the gap between the learning and the doing. WBL strategies provide career awareness, career exploration opportunities; career planning activities and help students attain competencies such as positive work attitudes and other employable skills. WBL encompasses a diversity of formal, non-formal and informal arrangements including apprenticeships, work placement and informal learning on the job. The key driver is the need for active policies to secure learning that meets the need of the workplace (Keevy & Chakroun 2015). According to Iliya and Pundi (2019), when reforming and implementing curriculum for Technical Education, there is need to acknowledge and emphasize the concept of "knowledge-in-action and knowledge-for-action" as both are important for addressing solutions to the technological problems of societies and communities. The Colleges of Education in Nigeria have focused largely on the learning of theories in the classrooms, students are most likely not fully engaged in practical learning in real settings to enhance skill acquisition, and the expectation of the society is that Curriculum should be anchored or tailored towards solving the societal problems,

The incorporation of new technologies with new subsystems and system components into modern automobiles have changed their configurations and made their maintenance a more complex task, even though some of the new systems make them easier to maintain (Nice, 2011). The curriculum for the technical education programmes that train students for this job of teaching technical students the maintenance of these vehicles has however remained rigid. As such, the gaps created between the curriculum and the new technological innovations in Automobile technology have made the needed skills for effective delivery of automobile lessons and maintenance of these new breed automobiles very difficult for the Automobile Technology Education graduates of these Colleges of Education. The result has been that the graduates of these programmes are often faced with challenges of teaching practical aspect of their area at technical college level, there by leading to the non-achievement of the Technical College objectives.

Consequently, these often lead to youth's unemployment, poverty, social unrest, and insecurity among youths who supposedly have graduated from Technical Colleges. Akwara, Akwara, Enwuchola, Adekunle and Udaw (2017) posited that the scourge of poverty and unemployment has ravaged almost all nations of the world in different dimensions and shades, similarly, Adebayo (2018) agreed that youth's unemployment and its attendant rising wave of crime are part of the major social problems affecting the growth and development of Northeast Nigeria and other parts of the country for a very long time. According to Adebayo (2018), many scholars and political analysts have suggested that empowering youths with practical job skills is very imperative in order to minimize the negative socio-political and economic consequences of joblessness in the

North-East Nigeria. This may not be achieved except the teacher training is equipped with robust practical skill training.

Obviously, these can be salvaged through Technical and Vocational Education and Training (TVET). Automobile Technology Education programme as part of Technical Education is a component of TVET, which is a skilled-based educational programme that focuses on developing quality technological human resources directed towards the nation's pool of skilled and self-reliant crafts-trainers, technicians and technologists (Adamu, 2017). TVET is aimed at offering learner's competency-based skills acquisition, quality scientific and technical knowledge to cope with the requirements of fast developing economy, gear up employment and meet the globalization challenges (Umar, 2010). The automobile curriculum at NCE (T) level is to ameliorate the aforementioned. Yahya, Yusri and Rabiu (2019) opined that, there should be vocationalization of Automobile Technology Education, and its curriculum should be designed strictly according to the requirements of the labour markets. To this end, they argued that majority of the policymakers are not industry experts, and therefore have little or no ideas about what the labour market demands.

Considering the global trends, the Automobile technology education curriculum should be anchored or tailored towards solving the societal problems relating to its field, as such the curriculum should emphasize, Knowledge, Skills, and Competency. Invariably, The Colleges of Education in Nigeria and in northeast to be specific have focused largely on the learning of theories in the classrooms at the expense of practical engagement. The result has been that; the graduates of these programmes are often unemployable or underemployed in industries. Instead, they are more concerned with acquiring the certificate for securing teaching jobs and other less skillful jobs, hence, less concerned about acquiring automobile skills. This cannot be unconnected with the fact that, these graduates, lack the necessary employability skills required to perform practically. It is very obvious that the present Nigerian society is flooded with unemployed graduates roaming the street due to lack of employment and as such the lack of employability skills will in turn yield severe economic situation, hostile environment that promotes insecurity, high rate of inflation and poverty. This paper therefore intends to address the challenges of integrating WBL into automobile technology education curriculum of Nigerian Certificate in Education (Technical) for effective training of NCE technical Graduates.

Purpose of the Study

The study sought to achieve the following specific objectives.

1. Determine the Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (Technical) in North-East Nigeria
2. Determine the solutions to the Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (Technical) in North-East Nigeria

Research Questions

1. What are the perceived Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (T) in North-East Nigeria?
2. What are the solutions to the Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (Technical) in North-East Nigeria?

Methodology

A descriptive survey research design was adopted for the study. The design was considered appropriate as the variables of the study are to be studied in the way they occur naturally without manipulations. The area of the study is the North-East of Nigeria. Population of the study comprised all Automobile Technology Education Lecturers, Technologists, NCE III students and Industry Based Automobile staff, making a total population of 172. drawn from FCE(T) Gombe, Gombe State, FCE(T) Potiskum, Yobe State, Aminu Saleh COE Azare, Bauchi state, Tatari Ali polytechnic Bauchi, Bauchi state, Ramat polytechnic Maiduguri, Borno state, COE Bama, Borno state, COE Zing, Taraba state and, COE Hong, Adamawa state, while the Automobile workshop and industries includes workshops in all government owned transport cooperation in the study area.

The sample for the study was drawn using a purposive sampling technique to select one NCE (Technical) awarding institution from the various North-East states. The entire 64 Automobile NCE III students from the various NCE (Technical) awarding institutions in the North East of Nigeria, 47 Automobile Technology Education Lecturers, and 11 Automobile workshop Technologists from the sampled schools, in the population was used as sample due to its' manageable size while a proportionate stratified random sampling techniques was used to select 18 Industrial Based automobile staff drawn from automobile workshops and industries in the North East Nigeria, making a total sample of 140. The instrument used for collecting data was a structured Questionnaire, developed by the researchers, titled: Automobile Technology Education Work-Base Learning questionnaire. The instrument's rating scale has five points, ranging from Strongly Agree (SA) = 5, Agree (A) = 4, Undecided (UD) = 3, Disagree (DA) = 2, Strongly Disagree (SD) = 1.

The Instrument was validated by three experts from the Moddibo Adama University, Yola, and Federal College of Education (technical) Gombe, for face and content validation. split-half method was used to determine the reliability coefficient of the instrument which yielded a reliability coefficient of 0.72. The researchers administered the questionnaire to the respondents with the help of research assistants from the various locations. Data analysis was done by use of Statistical Package for Social Sciences (SPSS) version 23. Mean and standard deviation was used to answer the research questions. In answering the research questions, any item with mean score equal to or greater than 3.50 were considered a challenge or solution to a challenge of integrating WBL into curriculum of Automobile Technology Education of NCE Technical in Northeast Nigeria.

Results

Research Question 1. What are the perceived Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (T) in Northeast Nigeria? The data that provided the answer to this research question were analyzed and presented in Table 1.

Table 1: Mean and Standard Deviation on Challenges of Integrating WBL into Automobile Technology Education Curriculum of NCE (Technical) in Northeast Nigeria

S/N	Items	N	$S\bar{x}$	$L\bar{x}$	$T\bar{x}$	$I\bar{x}$	$G\bar{x}$	SD	Remark
1	Rejection of students from training institutions by managers of industries.	140	3.97	4.51	4.27	4.22	4.21	0.97	**Agreed**
2	Non-regulation of students posting to industries of relevance to their training.	140	3.83	4.15	3.27	4.33	4.04	0.98	**Agreed**
3	Lack of access to modern machines in the industries by students' trainees.	140	3.58	4.40	3.64	4.11	3.93	1.04	**Agreed**
4	Inadequate practical testing of students by industrial based supervisors.	140	3.55	4.09	4.45	4.44	3.91	0.90	**Agreed**
5	Ineffective supervision of Technical and Vocational Education students by school-based supervisors during Work-Base Learning.	140	3.45	4.26	4.45	4.22	3.90	0.87	**Agreed**
6	Ineffective policy framework for work- based training period for Technical and Vocational Education students.	140	4.06	4.30	4.45	3.50	4.10	0.90	**Agreed**
7	Inadequate provision of modern facilities and machines for teaching Technical and Vocational Education in tertiary institution.	140	4.33	4.17	3.82	4.00	4.19	0.96	**Agreed**
8	Poor perception of Nigerian society about technical & vocational education.	140	3.94	4.19	4.09	4.28	4.08	0.84	**Agreed**
9	Non-payment of stipends to students during training.	140	3.91	4.19	4.55	4.50	4.13	0.93	**Agreed**
10	Deficient technical and vocational training offered in Nigerian schools.	140	3.36	1.45	1.91	1.89	2.41	1.37	**Disagreed**
11	Poor institutions-industry linkage for effective work-based learning.	140	3.61	4.53	3.73	3.44	3.91	1.09	**Agreed**
12	Poor attitude of students who enroll in technical and vocational education.	140	3.23	4.26	4.55	4.11	3.79	1.06	**Agreed**
13	Lack of strategic plan to avoid frequent interruption of school calendar.	140	4.00	1.60	2.36	1.83	2.79	1.44	**Disagreed**
14	Cases of sexual harassment of female trainees by industrial supervisors.	140	3.27	4.17	4.73	4.44	3.84	1.09	**Agreed**
15	Weak coordination of relevant agencies on functional WBL program in Nigeria.	140	4.08	1.89	2.00	2.28	2.95	1.49	**Disagreed**
16	Lack of motivational incentives for students on work-base leaning.	140	4.03	3.87	4.18	4.50	4.05	0.96	**Agreed**
17	Lack of in-service training policy and program for Technical and Vocational Education teaches and technologist.	140	4.23	4.28	4.64	4.33	4.29	0.83	**Agreed**

$S\bar{x}$ = Mean Response of Students $L\bar{x}$ = Mean Response of Lecturers $T\bar{x}$ = Mean Response of Technologist $I\bar{x}$ = Mean Response of Industry staff **SD** = Standard Deviation $G\bar{x}$ = Grand mean of response groups.

In Table 1 above, almost all items satisfied the benchmark for acceptance which is 3.50, with average mean scores of the groups ranging between 3.79 to 4.29 and were accepted, except for items 26, 27 and 31 that fall short of these benchmark and were rejected, for this reason therefore, respondents agreed with almost all the items listed on the table as challenges for the integration

of WBL except that of deficient technical and vocational training offered in Nigerian schools, lack of strategic plan to avoid frequent interruption of school calendar and that of weak coordination of relevant agencies on functional WBL program in Nigeria. Therefore, respondents all agreed that, integration of WBL into Automobile Technology Education curriculum of NCE (T) in North-East Nigeria, is faced with many challenges such as: Rejection of students from training institutions by managers of industries, Non-regulation of students posting to industries of relevance for their training, Ineffective policy framework for work- based training period for TVE students Inadequate provision of modern facilities & machines for teaching TVE in tertiary institution, Poor perception of Nigerian society towards technical and vocational education among others.

Research Question 2. What are the solutions to the Challenges of integrating WBL into Automobile Technology Education curriculum of NCE (Technical) in Northeast Nigeria? The data that provided the answer to this research question were analyzed and presented in Table 2.

Table 2: Mean and Standard Deviation of Solutions to Challenges of Integrating WBL into Automobile Technology Education Curriculum of NCE (Technical) in Northeast Nigeria

S/N	Items	N	$S\bar{x}$	$L\bar{x}$	$T\bar{x}$	$I\bar{x}$	$G\bar{x}$	SD	Remark
1.	Acceptance of students from training institutions by managers of industries.	140	4.20	4.38	4.36	4.50	4.31	.721	**Agreed**
2.	Regulating students' posting to industries relevant to their training.	140	3.75	3.51	3.55	3.33	3.60	1.18	**Agreed**
3.	Access to modern machines in the industries by students' trainees.	140	3.81	4.28	3.55	4.00	3.97	1.08	**Agreed**
4.	Regular practical testing of students by industrial based supervisors.	140	3.48	4.13	3.45	3.33	3.68	1.13	**Agreed**
5.	Effective supervision of Automobile students by school-based supervisors during Work-Base Learning.	140	3.98	4.04	3.91	3.83	3.98	1.01	**Agreed**
6.	Effective policy framework for Work-based training period for Automobile students.	140	4.19	3.30	4.27	3.83	3.86	1.19	**Agreed**
7.	Adequate provision of modern facilities & machines for teaching Automobile in tertiary institution.	140	4.05	4.11	4.64	4.39	4.16	.884	**Agreed**
8.	Positive interest of Nigerian society towards technical & vocational education.	140	3.94	4.09	4.18	4.17	4.04	1.01	**Agreed**
9.	Payment of stipends to students during Work-Base Learning.	140	3.72	4.02	4.55	4.28	3.96	1.12	**Agreed**
10.	Proper technical and vocational training in our technical schools.	140	4.06	2.45	2.18	2.33	3.15	1.43	**Agreed**
11.	Proper institutions-industry linkage for effective work-based learning.	140	4.39	2.04	2.36	1.83	3.11	1.60	**Agreed**
12.	Development of positive attitude by students towards enrolling in technical and vocational education.	140	3.95	3.49	4.64	3.33	3.77	1.17	**Agreed**
13.	Provision of strategic plan to avoid frequent interruption of school calendar.	140	3.89	4.23	4.18	4.39	4.09	.936	**Agreed**
14.	Students' dedication and interest in Technical and Vocational Education work-based learning.	140	3.73	4.34	4.82	3.78	4.03	1.02	**Agreed**
15.	Proper coordination of relevant agencies on functional Work-Base Learning program in Nigeria.	140	3.75	1.74	2.36	2.17	2.76	1.44	**Disagreed**
16.	Provision of motivational incentives for students on work-based learning.	140	3.86	4.43	3.55	4.39	4.09	1.02	**Agreed**
17.	Providing in-service training policy and program for Automobile teachers & instructors.	140	3.91	1.89	2.18	2.06	2.86	1.28	**Disagreed**

$S\bar{x}$ = Mean Response of Students $L\bar{x}$ = Mean Response of Lecturers $T\bar{x}$ = Mean Response of Technologist $I\bar{x}$ = Mean Response of Industry staffs **SD** = Standard Deviation $G\bar{x}$ = Grand mean of response groups

Table 2 shows a high level of mean responses across the response groups which are above 3.50. Except, for items 32 and 34 that were rejected with the lowest mean scores across the various

response groups with average means of 2.76 and 2.86, average standard deviation scores of 1.44 and1.28. Therefore, this revealed that, both students, lecturers, technologists and industry-based automobile staff, agreed on varieties of solutions proffered as solutions to the challenges of integrating WBL into Automobile Technology Education curriculum of NCE Technical.

Discussion of Findings

Findings of this study agrees with Adetayo & Oke (2015) who stated that the problem of graduate unemployment should be blamed on the hard-wired execution of the intervention programs and non-comprehensive methodologies received combined with the feeble institutional system and vulnerability emerging from continuous policy changes and irregularities of government. It also agrees with Nübler et al. (2009), who asserted that; one of the limitations of WBL is that it tends to reproduce existing workplace patterns of segregation according to gender, social class, and ethnicity. Findings also agrees with Bassey & Atan (2015) who noted that, to reduce graduate unemployment in Nigeria, the current unstable labour market calls for good government's policy that must be linked to education and to the world of work. This assertion was supported by Ismail & Mohammed (2015) who said, this can be achieved by producing college curriculum content that goes beyond hypothetical information, or explicit specialized abilities yet transversal aptitudes that incorporate thinking and reasoning.

Conclusion

It is imperative to develop a new framework which encourages the departments of automobile technology education in colleges of education in the northeast Nigeria working in harmony with reputable industries other labor organizations, skill acquisition centers etc. so that students can be trained and exposed in these areas to acquire the necessary skills for them to be able to function effectively on the job. Establishing this working relationship will ensure that skills taught in schools are related to the needs of individual students as well as the labor market requirements and keep abreast with the new technological development. Work-Based Learning (WBL) can be more effective if all stakeholders all play their roles in accordance to the policy framework, such as; making the industries be in charge of WBL instead of academic staff, Encouraging higher percentage of time and duration spent for practice in the industries than that of class activities in the school settings, adopting industries designed curriculum instead of curriculums that are designed by non-skilled persons or policy makers, etc. some challenges are also encountered in the implementation of WBL such as; Rejection of students from training institutions by managers of industries, Inadequate practical testing of students by industrial based supervisors, Ineffective policy framework for work- based training period for Automobile technology students, Poor institutions-industry linkage for effective work-based learning, However, these problems are not without solutions.

Recommendations
The following recommendations were made based on the findings of the study.
1. Departments of Automobile technology education and industries should be encouraged by both the public sectors and private organizations to collaborate to develop relevant and interesting WBL framework that emphasizes competency and employability.
2. Educational agencies such as, the National Commission for Colleges of Education (NCCE), Nigerian University Commission (NUC), as well as state, and federal

governments should jointly organize programs such as workshops, seminars, and conferences, on the need for WBL in Nigerian tertiary institutions.

3. It is important that, lecturers and technologists get expose to new and emerging technology, tools and software that are relevant in aiding WBL programmes, thereby increasing students' motivation for the classroom and workshop activities in order to bring about better performance and achievement.

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