STAKEHOLDERS' PERCEPTION OF ADEQUACY OF TECHNOLOGY EDUCATION PROGRAMME IN NIGERIAN UNIVERSITIES FOR ACQUISITION OF REQUISITE EMPLOYABLE SKILLS BY STUDENTS

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Abstract

The study was carried out to determine stakeholder's perception of adequacy of technology education programme in Nigerian Universities for acquisition of requisite employable skills by students. Three research questions guided the study and two null hypotheses were tested at

0.05 level of significance. Descriptive survey research design was used for the study. A validated questionnaire with reliability coefficient of 0.73 was used for data collection. The population was made up of 227 technology education students, 57 trainers and 33 employers of technology education graduates from the three zones that make up northern Nigeria. Both multi-stage and purposive sampling techniques were used resulting to a sample size of 188 respondents (128 students, 37 trainers and 33 employers, drawn from three universities. Mean and standard Deviation were used to answer the research questions using a benchmark of 2.50 as an index for agreement and to determine the homogeneity or otherwise of the respondents. z-Test was used to test the two null hypotheses. The findings showed that the technology education programme in Nigerian universities is adequate for equipping students with the appropriate generic skills regardless of their stress areas. The programme was found not adequate for equipping the students with the skills needed for industrial work and self- reliance among others. Based on the findings the researcher recommended among others that curriculum planners should integrate more professional technology education courses on emerging problems in technology education into the programme to complement the employability skills.

Background of the Study

Requisite employment skills are those essential skills that are needed to get a job, stay on the job and facilitate their promotion (Adamu, 2014). It includes all specialized knowledge that is needed in the labour market. Lapan, Tucker, Kim and Kosciulek (2003) and Senior (2009) stated that a good educational programme should provide students with skills on effective communication; supervision, coordination, planning and strategic thinking, clear vision, Information and Communication Technology, creativity/self-confidence, good self-management and time-management which are considered as requisite skills for employment.

Zaharim, Yussouf, Omar, Mohammed and Muhammad (2009) classified requisite employment skills in technology education into three categories as follows:

.Core Skills These cover knowledge of Sciences, technology, engineering and mathematics (STEM) and educational Principles, competency in Automobile, building, electrical, electronics, woodwork as the case may be.

1. Generic Skills Theses include communication skills, computer literacy, goal setting skills, team work skills, self-learning skills, leadership skills, knowledge of contemporary issues.
2. Personal attributes: These covers attitudes and traits among others.

One of the numerous media for the acquisition of such requisite skills is through university education. University education plays critical role in the social, economic and human development of Nigeria. The objectives of Nigerian tertiary educational system (with focus on the Universities) according to FRN (2013) are: teaching, research and development. The curriculum of the universities highlighted the in-depth knowledge, competency and attitudes to be acquired by the students, while the instructional resources, such as classrooms, teachers, funding, laboratories, and consumables among others facilitate the acquisition of such skills.

Technology education is one of the numerous programmes obtained in the Nigerian universities. The programme has been defined in several ways by different scholars to suit their specific purposes. Some scholars defined it from the perspective in which its various school-subject components are taught, while others defined it from the way it is practiced in the field. However, the Federal Republic of Nigeria [FRN] (2013) defines technology education as those aspects of educational processes involving the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding, and knowledge relating to occupations in various sectors of the economic and social life.

The philosophy and objectives of the programme were earlier identified and documented in the Benchmark of Academic Standards by the NUC, as the body noted that, "…with current emphasis on self-reliance and job creation for the teaming population, this programme is expected to make significant contribution to the Nigerian Education Industry (FRN, 2011). Therefore, the students are expected to:

1. Develop high level skill in the design, production, and improvisation of various instructional technology resources.
2. Acquire teaching skills and appropriate methods needed in imparting knowledge in their field of specializations.
3. Demonstrate competency in the handling of various hardware to achieve maximum result for a wide variety of target audience.
4. Gain insights on maintenance of Industrial materials, tools, machines and facility.
5. Develop problem solving and creative thinking abilities.
6. Develop safety consciousness, creativity and good judgment over the use of technology (FRN, 2011 p.300). The question is "Have these objectives been

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achieved?" This paper sought answers to find answers to this question from various stakeholders involved in the programme.

Statement of the Problem

In the last two or three decades, higher educational institutions in Nigeria have been turning out graduates who end up unemployed either for lack of employment opportunities or employable skills. This could be due to their exposure to "wrong" curriculum content or unsuitable mode of content delivery or even both (Marinho, 2009). According to Sodipo (2014), the products of the Nigerian university system have at different forum been challenged to prove their suitability or otherwise to secure few available jobs with many failing. This situation is not only pathetic but embarrassing because vast human resources available to the country had not been trained and utilized for the advantage of the country. This situation seems general in nature but what is relative to technology education graduate is not clear. This problem necessitate the study to ascertain the views of the various stakeholders involved in the programme on its adequacy for acquisition of employable skills by graduates of university technology education programme.

Purpose of the Study

The study sought to determine the adequacy of technology education programme in Nigerian universities for acquisition of employable skills by students. Specifically the study determined adequacy of the technology education curriculum content in Nigerian universities for equipping students with requisite:

1. Generic skills.
2. Employable skills for industrial work.
3. Entrepreneurial skills for self-reliance.

Research Questions

The following research questions guided the study: In the opinion of the stakeholders what is the level of adequacy of adequacy of technology education curriculum content in Nigerian universities for equipping students with requisite:

1. Generic skills?
2. Employable skills for industrial work?
3. Entrepreneurial skills for self-reliance?

Hypotheses

In line with the research questions, the following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of trainers of technology

education students and their employers on the level of adequacy of the curriculum contents of the programme for equipping the students with requisite generic skills.

2. There is no significant difference between the mean opinion of students and their trainers on the level of adequacy of the technology education curriculum in Nigerian universities for equipping graduates with requisite employable skills for industrial work.

Research Design

Descriptive survey research design was adopted for the study. This design was deemed appropriate as the study involved surveying the opinion of a given population in order to describe and interpret an existing situation. This design was supported by Uzoagulu (2011) who emphasized that descriptive survey should be employed when a research work involves the use of questionnaire to seek the opinions of respondents.

Area of the Study

The study covered all the states in the Northern part of Nigeria. The area is made up of three geo-political zones and comprises 19 out of the 36 states in the country.

Population of the Study

The target population for this study was 317 (227 final year technology education students, 57 trainers from Nigerian universities and 33 employers) of technology education graduates from northern Nigeria.

Sample and Sampling Technique

This study adopted a multi-stage sampling technique incorporating simple random and purposive sampling techniques. According to Dudovskiy (2014), multi stage sampling techniques should be used where a large cluster of population is divided into smaller clusters in several stages. In this study, the population was stratified in the three existing geo-political zones in Northern Nigeria, namely: North-East, North-West and North-Central. Within each of the zone one of the Universities offering Technology Education programmes was purposively selected for this study- AbubakarTafawaBalewa University, Bauchi for the North-East, Bayero University, Kano, for the North-West, and the Federal University of Technology, Minna, for the North-Central. At the University level only students and trainers involved in technology education programmes were included in the study. All the 57 trainers were drawn from the three study institutions, and Taro Yamane formula was used to determine the sample size of 75, 42, and 70 for the final year students in AbubakarTafawabalewa University, Bauchi, Bayero University, Kano, and the Federal University of Technology, Minna respectively bringing the total sample for the students to 187. The final year students were randomly selected using simple balloting procedure. Thirty

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three (9, 11, 13) employers of technology education graduates were purposively selected from each the states according to the records obtained from the respective departmental SIWES coordinators.

Instrument for Data Collection

Instrument for data collection was a structured questionnaire on four-point scale titled Questionnaire on Adequacy of Universities Technology Education Programmes (QAUTEP). The instrument was made up of sections A and B. Section A sought information related to the bio-data of the respondents while Section B had three sections in line with the research questions. Section B was a 4 point scale of Strongly Agree/Very Adequate/Very High, Agree/Adequate/High,Disagree/Need Minor Revision/Low,Strongly Disagree/Grossly Inadequate/Very low.

Validation of the Instrument

The instrument was validated by three experts from the Department of Technology Education in ModibboAdama University of Technology, Yola. Their suggestions were applied in the final version.

Reliability of the Instrument

To establish the reliability of the instrument, 20 copies of the questionnaire were administered on final year Technology Education students who werenot part of the subjects of the study. Split-half method was used in obtaining the data. The data obtained were analyzed using Cronbach Alpha. The results show a correlation co-efficient of 0.73 which according to Uzoagulu (2011), is considered to be high.

Method of Data Collection

The questionnaire was administered to the respondents by the researcher in person at Bayero University, Kano while one research assistants each was appointed by the researcher for AbubakarTafawaBalewa University, Bauchi and Federal University of Technology, Minna respectively. Efforts were made to retrieve the completed copies within a period of two weeks which facilitated high return rate.

Method of Data Analysis

The data collected was analyzed using the following statistical tools: mean, standard deviation, and the z-test. Grand mean was used to determine the overall responses for each of the three research questions. A score of 2.50 and above was considered as an index for Agree while a score less than 2.50 were considered as Disagree. The two hypotheses were tested using the z-test at 0.05 level of significance.

Results

Research Question 1

Table 1:

Mean and Standard Deviation on the level of Adequacy of Technology Education Curriculum Content in Equipping the Students with Requisite Generic Skills

S/N	Technology Education Curriculum Content for General Skills	$\bar{X}_1$	Sd_1	$\bar{X}_2$	Sd_2	$\bar{X}_3$	Sd_3	$\bar{X}_G$	Remark
1.	The curriculum is adequate in equipping the students with the knowledge of contemporary issues.	2.13	1.14	2.64	1.16	2.35	0.94	2.38	Disagree
2.	The curriculum is adequate in equipping the students with goal-setting skills.	2.17	0.93	2.59	1.16	3.14	0.91	2.91	Agree
3.	The curriculum influences the students to develop the spirit of team work.	3.21	1.08	2.78	1.16	3.32	0.77	3.20	Agree
4.	The curriculum develops in the students necessary social and interpersonal skills.	2.08	1.08	2.51	1.09	2.21	1.04	2.53	Agree
5.	The curriculum is adequate enough in equipping the students with problem solving ability.	2.17	0.83	2.62	1.06	3.03	1.01	2.84	Agree
6.	The curriculum is adequate in equipping the Students with adequate skills for effective Communications.	1.91	0.85	3.08	0.98	2.32	1.01	2.41	Disagree
	Cluster Mean							**2.71**	

Results in Table 1 revealed the respondents agreed with four out of the six generic skills listed while disagreed with two. The cluster mean of 2.7 shows that respondents agreed that the curriculum contents of technology education in Nigerian universities is adequate for equipping students with requisite generic skills.

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Research Question 2

Table 2:

Mean and Standard Deviation on the level of Adequacy of Technology Education Curriculum in Nigerian Universities in Producing Graduates with Requisite Employable Skills for Industrial Work

S/N	Technology Education Curriculum with X_1 Employable Skills for Industrial Work	$\bar{X}_1$	Sd_1	$\bar{X}_2$	Sd_2	$\bar{X}_3$	Sd_3	$\bar{X}_G$	Remark
7.	Students Industrial Work Experience Scheme (SIWES) influences smooth School-to-Work Transition.	3.69	0.24	3.97	0.16	3.98	0.10	3.94	Agree
8.	The curriculum is adequate in preparing the students with skills needed to design and implement effective health and safety Strategies.	2.04	1.02	2.51	1.09	1.97	0.90	2.08	Disagree
9.	The curriculum is adequate enough to prepare the students on how to maintain laboratoryand workshop equipment.	2.08	1.08	2.62	1.16	2.02	0.90	2.14	Disagree
10.	The curriculum is adequate in equipping the students with necessary skills to accomplish a task with little or no supervision.	2.00	1.00	2.59	1.16	1.99	0.70	2.10	Disagree
11.	The curriculum is adequate enough to prepare the students with the skills required in the 21st century industries.	1.78	0.85	2.59	1.08	2.21	1.04	2.23	Disagree
12.	The curriculum is adequate in equipping the students with plan (blue print) reading ability.	1.60	0.80	2.86	1.20	2.21	1.06	2.26	Disagree
13.	The curriculum prepares the students with high level sills in improvisation of laboratory and technology workshop equipment.	1.78	0.90	2.62	1.06	2.00	0.90	2.09	Disagree
	Cluster mean							**2.40**	

Results in Table 2 revealed the respondents agreed with only one of industrial skills listed while disagreed with six. The cluster mean of 2.40 shows that respondents disagreed that the curriculum contents of technology education in Nigerian universities are adequate for equipping students with requisite industrials skills.

Research Question 3

Table 3:

Mean and Standard Deviation on the Adequacy of Technology Education Curriculum Content in Equipping the Students with Requisite Entrepreneurial Skills for Self-Reliance

S/N	Technology Education Curriculum Content with Enterpreneurial Skills For Self Reliance	X_1	SD_1	X_2	Sd_2	X_3	SD_3	X_G	Remark
14.	The curriculum is adequate in preparing the students to pick up either teaching or industrial works.	1.91	0.85	3.27	0.99	3.17	0.87	3.03	Agree
15.	The entrepreneurial preparation in the technology education curriculum is adequate enough for the students to take up self-reliant jobs on graduation.	1.82	0.92	3.02	1.06	2.00	0.90	2.17	Disagree
16.	The curriculum is adequate enough in equipping the students with the skills needed to come up with a proper business plan.	2.04	1.02	3.08	0.98	2.32	1.01	2.43	Disagree
17.	The Curriculum is capable of developing competent vocational skills in the students on graduation.	-	-	3.48	0.73	1.85	0.86	2.21	Disagree
18.	The curriculum is adequate enough in equipping the students with innovative ideas onhow to develop new products and services.	1.78	0.90	-	-	-	-	1.78	Disagree
19.	The curriculum is adequate enough to Encourage the Students to start new ventures and develop the Potentiality to succeed in business organization.	1.87	0.97	3.27	0.99	3.42	0.60	3.20	Agree
	Cluster mean							**2.47**	

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Results in Table 3 revealed the respondents agreed with four out of the six entrepreneurial skills listed while disagreed with two. The cluster mean of 2.47 shows that respondents disagreed that the curriculum contents of technology education in Nigerian universities are adequate for equipping students with requisite entrepreneurial skills.

Hypothesis 1

Table 4:

z-test analysis of the Responses of Employers and Students Regarding the Adequacy of Technology Education Curriculum in Equipping the Students with Requisite Generic Skills

Respondents	X	SD	N	df	Z-Calc	Z-Crit	Remark
Employers	2.28	0.97	23				
				149	0.05 -1.35	1.96	Not Significant
Students	2.72	0.94	128				

Results in Table 4 show that the z-calcof -1.35 was less than the z-critof 1.96 at 0.05 level of significance and at 149 degree of freedom. Therefore, the null hypothesis was accepted indicating that there was no significant difference between the mean rating of technology education employers and students on the level of adequacy of technology education programmes in Nigerian universities in equipping students with requisite generic skills.

Hypothesis 2

Table 5:

z-test analysis of the Responses of Trainers and Students Regarding the Adequacy of Technology Education Curriculum in Nigerian Universities in Equipping students with Requisite Employable Skills for Industrial Work

Respondents	X	SD	N	df	Z-Calc	Z-Crit	Remark
Trainers	2.82	1.02	37				
				163	0.05 2.62	1.96	Significant
Students	2.34	0.85	128				

Results in Table 5 show that the z-calcof 2.62 was less than the z-crit of 1.96 at 0.05 level of significance and at 163 degree of freedom. Therefore, the null hypothesis was rejected indicating that there was significant difference between the mean rating of technology education trainers and students on the level of adequacy of technology education programmes in Nigerian universities in equipping students with requisite skills for industrial work.

Discussions

The findings of this study revealed that technology education programme is adequate enough to equip the students with requisite generic skills needed for employment. This is in disagreement with Ismail and Mohammed (2015) who stated that technology education graduates at entry level of employment are less equipped with the employability (generic) skills needed by employers therefore are not ready to enter into the labour market. This finding suggests that the general studies component such as communication skills, peace and conflict studies usually found in the technology education programme curriculum are adequate enough to prepare students for employment. The finding also conform with the suggestion by Billing (2003) who opined that employability skills to be provided by the universities should include problem solving, communication skills, critical thinking skills, interpersonal skills among others.

In the area of requisite employable skills for industrial work, the finding is in agreement with Oronsaye et-al (2014) who found out that technology education graduates have apparent weak proficiency in practical skills needed to be able to function effectively in the industrial establishments because most of the students completed their undergraduate programmes without been exposed to practical sessions. It also corroborates Sodipo (2014) who reported that the product of Nigerian university system had at different forum being challenged to test their suitability or otherwise to secure few available jobs.

In the area of entrepreneurial skills for self-reliance, the findings corroborate with Okoye and Chijioke (2014) who observed that technology education graduates cannot set up their own private businesses in form of workshop to practice; which shows that the knowledge and skills acquired in the course of the training makes little or no impact to the economic independence of the graduates, because the skills that should make an individual think of how to explore and exploit the immediate environment and become self-employed are slacking.

Conclusions

Based on the three specific purposes that the research work addressed, the researcher concluded that the technology education programme obtained in the Nigerian Universities is adequate enough to equip the students with requisite generic skills needed for employment. However, it found to be not adequate enough in equipping the graduates with the requisite employable skills for industrial work and the entrepreneurial skills for self-reliance in Nigeria.

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Recommendations

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

1. Curriculum planners in technology education should integrate modern Technology into the programme in Nigerian universities so as to equip students with requisite employable skills required by the 21st century industries.
2. University technology education trainers should give top priority to entrepreneurship skills training for the students. This would enable the students to develop entrepreneurial mind set which will be useful to them after graduation.
3. Technology education managers should ensure that programme is effectively implemented. This will help to strengthen students' attitude towards positive learning and enhance their acquisition of requisite employment skills.

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