



Employers' Identification of Skills Needed by Technical and Vocational Education Graduates for Industrial Work Effectiveness

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Unemployment has been an issue yet unresolved in the minds of every citizen. However, the hope is that the Nigerian government should resolve it, but this plight still looms and stirs on the face of all. This however is the plight in sight and therefore this study investigated employers' identification of skills needed by technical and vocational education (TVE) graduates for industrial work effectiveness. The study determined (a) Information Communication Technology (ICT) skills needed by TVE graduates as identified by employers with 0-10 years of work experience, (b) Problem-Solving skills needed by TVE graduates as identified by employers with 0-10 years of work experience, (c) Technical Skills needed by TVE graduates as identified by employers with 0-10 years of work experience. Three research questions and three null hypotheses guided the study. The study adopted the descriptive survey design, with a population of 260 managers. Data collected were analyzed using arithmetic mean and standard deviation for research questions and z-test to test the hypothesis. The study revealed that, problem solving skills, technical skills and

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information and communication technology (ICT) skills are highly needed by TVE graduates for improved industrial work effectiveness. Findings of the study revealed that in terms of information and communication technology skills and problem solving skills, there was no significant difference in the mean ratings of employers. The study also revealed that employers of 0-10years of operation differed significantly in their mean ratings on technical skills needed by TVE graduates for industrial work effectiveness. Based on the findings, the researchers recommends that every effort should be made to ensure that machinery to enhance the acquisition of employability skills by TVE scholars be put in place during their days in school. There should be re-training scheme arranged by Nigerian government for TVE graduates after school.

Keywords: Skills; technical and vocational education (TVE); industrial work effectiveness.

1. INTRODUCTION

Education as described by all and sundry is the bedrock of any nation. This notion had been from time immemorial. Further stating, Agi and Yellowe [1] asserted that education is important to the development of human resources, impartation of appropriate skills, knowledge and attitude. It is the basis for transformation, industrialization and a high way to global knowledge economy. Relating to other spheres of life, Agi and Yellowe [1] explained further that education is regarded as a means of achieving culture of peace, gender equality and positive African values. It is therefore the understanding of many that education leads to national transformation and development, through reduction in poverty with ensured peace and security.

The National Economic Empowerment and Development Strategy (NEEDS), document lends credence to the place of education by clearly explaining its role in self-reliance and development, to support the above assertion, It was stated that the goals of wealth creation or generation, poverty reduction and value re-orientation can only be attained and sustained through an efficient education system which impacts the relevant skills, knowledge, capacities, attitudes and values. In view of the benefits of education enumerated above, several countries have provided education for decades with abundant available manpower. However, what keeps agitating most African countries endlessly borders on the slow and inefficient economy, near primitive democracy and violent social co-existence in society (NEEDS, 2004), evidenced with many primary and secondary schools and tertiary institution's graduates not gainfully employed either by self or government.

Supporting this, Ochonma [2] reported that in most African countries about 2.8 million fresh

graduates enter the labour market yearly and only 10% of these are gainfully employed. The impartation of relevant skills for self reliance and gainful employment rest on the curriculum of Technical and Vocational Education and Training (TVET) carried out in technical collages and in most training centers. TVET has a special role in providing knowledge and skills that enable people to improve the quality of their daily lives (UNESCO-UNEVOC). Further stating, linked with adequate employment opportunities, TVET can assist people in expanding their skills, raising their productivity and increasing their personal incomes, thereby leading to overall raised living standards and stronger, more competitive economies.

In line with this report, Okolocha [3] stated that technical and vocational education is the bedrock of sustainable development of any Nation. Technical education is a comparatively new phase of technological training which is designed to meet the complex technological needs of modern industries by producing individuals with adequate skills. It should also be noted that all technical education programmes are technologically oriented and fashioned towards practical application of applied sciences. It is distinctively different from vocational education. Technological heights and globalization of the labour market requires complex skills and hands-on-experience for the world of work. Companies reportedly demand employees ready to "plug and play" who are also creative, communicative, and collaborative.

Furthermore, Ezeani and Urama [4] noted that it has been on record that most industrialized countries of the world like USA, Germany, Japan and Britain have developed through huge investment in technical and vocational education. The attainment of an industrialized nation requires to a very large extent the training of its

youths in various trades and profession which include air conditioning, automotive services, aircraft maintenance, construction and maintenance trades, carpentry, electrical/electronics, fabric maintenance service, industrial atomic energy, maritime occupations, energy, metal works, metallurgy, electric power-generating plant maintenance, textile production and fabrication, leather works etc. technical and vocational education is a type of education designed to develop skills in individuals to live, learn and work as productive citizens in the society [4].

Accordingly as stated by Abadzi [5], international agencies often advice lower income governments to de-emphasize traditional book learning and use innovative pedagogies to teach the needed skills explicitly. However researchers such as Kennedy [6] and Ganyaupfu [7] found out that at the population level, most strategies employed in TVE training centers and technical colleges are not feasible to bring about required skill acquisition, and disguising the fact that complex skills are built from shorter chains of component skills. However, to develop such skills, graduates of technical and vocational education require extensive practice, follow-up, and feedback [5]. They further stated that, skills are furthermore an intricate interplay between two types of memory: (a) *Explicit memory*, which is involved in personal memories and conscious knowledge of rules, and (b) *Implicit memory*, which includes movements, procedures, tacit knowledge. Implicit memory is involved in nearly everything people do, but it is mainly unconscious. Individuals most readily recall their conscious memories and often underestimate the role of the implicit memory. However, through repetitive practices in technical workshops, most graduates of technical education are trained with the two skills memories; - the implicit and explicit. Therefore if TVET graduates are adequately trained, they are supposed to drive the industrial sector of today's economy that has witnessed a downward trend due to incompetency of these graduates who have inadequate skills. The gross domestic product (GDP) of the economy is dropping gradually; the rate of unemployment is on the increase leaving a "question mark" on the minds of the citizens asking, "Where are Nigerians going from the present situation?"

According to Ezeani and Urama [4], the rapid industrialization of any nation is tied to acquisition of vocational and technical education.

Apparently it is a way of exposing individuals to the practical training meant for developing and producing goods and services that are marketable for citizens in any country. It is clear and on the full glare of every citizen that a developing country such as Nigeria has failed to achieve any meaningful industrial development due to a number of factors; principal among which is over dependence on imported goods from developed countries, lack of lay down strategies for practical skills acquisition for work effectiveness.

Work effectiveness here could be the quality of being suited to serve a purpose adequately, mostly practical. Functionality allows for individuals at all age level to perform effectively in the workplace. Gainer [6] summarized set of skills that will give a competence to address as employable, thus: Communication skills, interactional skills, computer skills, civilization skills, ethics, personal management, vocational maturity, problem-solving skills, and career development skills. Employability skills in the researchers view are those visible skills exhibited by an individual, which gives him edge in problem solving and industrial functionality. While there will always be job-specific skills that an employer look out for, most employers would also want the employee to have general skills for functionality. Those general job skills that improves ones functionality are often times called "employability skills".

Unemployment has been an issue yet unresolved in the minds of every citizen. The hope is that the Nigerian government should resolve it, but the problem of unemployment has prevailed. As noted by Okolocha and Ile [8], the Federal Government of Nigeria recently embarked on educational reforms aimed at making the system more functional and relevant to both the citizens and society at large. To address the issue of unemployment and as part of government reform strategy, some programmes were introduced, thus National Directorate of Employment (NDE) (1998), National Poverty Alleviation Programme (NAPEP) (2001), National Economic Empowerment and Development Strategy (NEEDS), (2004), and recently the Bank of Industries (BOI) (2015) to train and provide loans for graduates to enable them to be self-employed and become employers of labour. To this length, most graduates still continue to be unemployed after graduation, whereas it is expected of them to have acquired prerequisite skills for work

effectiveness in the work place or set up an enterprise of theirs. This may likely be as a result of lack of required skills for job placement. Therefore, this study was conducted to find out employers' identification of basic skills needed by technical and vocational education (TVE) graduates for industrial work effectiveness.

2. RELATED LITERATURE REVIEWED

2.1 Skills Needed in the Industry

In the current dispensation, employers in the industrial sector emphasize the need for employees with certain basic skills for work effectiveness. These include among others a strong academic grounding in reading and arithmetic, as well as individual personal abilities such as teamwork, problem solving, work ethic and integrity. While employers rely on employees to have some basic skills, they all have different views on needed skills in the workplace for effective workforce. This makes it difficult for prospective employees and educators to know exactly what is required for success in any career path in any industry.

Similarly, Buntat, Jabor, Saud, Mansor and Mustafa [9] asserted that the current job market has a steady stream towards globalization and diversification. Industries today are looking forward to technical expertise or hard skills, at the same time they look forward to identifying candidates with employability skills or soft skills. Some of the most commonly required skills are communication and interpersonal skills (written and verbal), team work, problem solving, initiative and self-motivation, planning and organizational skills, drive, numeracy, ability to learn and adapt and time management. In line with increased competition among organizations in the global market, employers need employees with good problem solving skills that enables them identify, and resolve critical technical issues. According to Overtoom [10] employability skills are transferable core skill group that represent essential required by the 21st century workplace. They are necessary for career success (functionality) at all levels of employment and for all levels of education. If graduates of TVE graduate into the world of work with basic skills required of them to function well, it becomes an added advantage to the company for having employees with such skills and eases them of further training.

2.2 Importance of Employability Skills

According to Greatbach and Lewis [11] generic employability skills are important because the labour market is intensely competitive, and employers in private, public and the third sector are looking for people who are flexible, can take the initiative and have the ability to undertake variety of tasks in different environment. Employability skills are not as narrowly prescribed and defined as in the past and generally they are more 'service oriented', making information and social skills increasingly important.

In relation to employability, there has been variety of interpretations for the term employability. Employability can be viewed as a characteristic of an individual [12]. It also relates to personal attributes rather than technical skills [3]. It is sometimes referred to as generic capabilities, transferable skills, basic skill, essential skills, work skills, soft skill, core competencies and enabling skills or even key skills. Generic skills on the other hand are skills which can be used across a large number of different occupations [Keams, 13]. They include the key competencies or key skills but extend beyond these to include a range of other cognitive, personal and interpersonal skills which are relevant to employability. These non-technical skills have played an important role for graduates in getting and staying employed in the workplace. Lankard [14] also defined employability as a person who holds a feature of good self-image, good interpersonal skills, and good attitude. Robinson [15], described employability skills as "those basic skills necessary for getting, keeping and doing well on a job", it is the attributes of employees, other than technical competence, that make them an asset to the employer [16]. These employability skills include reading, basic arithmetic, basic skills, problem solving, decision making, and other higher-order thinking skills and dependability, a positive attitude, cooperativeness, and other affective skills and traits.

To buttress further, in 2012 the Central Bureau of Investigation released an employer survey of 542 employers. The survey revealed that 81% of employers valued employability skills as the most important factor when recruiting graduates over and above other factors such as degree subject (70%) or class (46%). Employability skills are important to enable graduates function in current

changing world. Graduates need to be flexible and adaptable, to be able to solve problems, communicate effectively, think critically and creatively and be able to operate as effective team members in the work place [17]. In order to achieve smooth transition from school to labour market, employees not only need to have technical knowledge and skills but also should possess soft skills referred to as employability skills. This possession of soft skills increases their level of functionality in the work place. Failure to achieve this has been identified as one of the causes of skills gap amongst TVE graduates.

Gimba [16], conducted a study on employability skills required of Polytechnic Building Technology Graduates in Nigeria. Four research questions and four hypotheses guided the study. Survey research design was employed. The study population consisted of 216 respondents, made up of 36 lecturers of Building Technology in six Polytechnics that award higher National Diploma in Kaduna, Zamfara and Jigawa states of Nigeria, 24 managers and 156 graduate employers in Building organization in the three states. The instrument used for data collection was questionnaire, which comprised of 50 items and the respondents responded to. The findings of the study revealed that employability skills are important for securing, retaining and progressing on the job, as well as having success in the world of work. Again, effective work habits are essential to the satisfactory job performance, irrespective of one's chosen career or occupation.

Similarly, Buck and Barrick [12] conducted a study on business graduate competencies: employers' views on importance and performance. The study examined New Zealand employers, the employers were asked to rate the importance of the selection of graduate competencies using a seven point Likert scale, and were asked to rate new graduates' performance for the same graduate competencies. The study also investigated the level of importance that employers place on prior work experience for new business graduates. A 'competency gap' between importance and performance was identified from the findings and the impact these findings have for cooperative education programmes. Nevertheless, the gap created by the studies reviewed will be empirically filled by the present study which will determine employers' identification of skills needed by technical and vocational education graduates for industrial work effectiveness.

3. PURPOSE OF THE STUDY

Specifically, this study determined the:

1. Information Communication Technology (ICT) skills needed by TVE graduates as identified by employers with 0-10 years of work experience.
2. Problem-Solving skills needed by TVE graduates as identified by employers with 0-10 years of work experience.
3. Technical Skills needed by TVE graduates as identified by employers with 0-10 years of work experience.

4. RESEARCH QUESTIONS

The following research questions have been framed to guide the discussions:

1. What are Information Communication Technology (ICT) skills needed by TVE graduates as identified by employers between 0-10 years of work experience?
2. What are the Problem-solving skills needed by TVE graduates as identified by employers between 0-10 years of work experience?
3. What are the Technical Skills needed by TVE graduates as identified by employers between 0-10 years of work experience?

5. HYPOTHESES

The following null hypotheses were formulated and tested at 0.05 level of significance

1. There is no significance difference in the mean ratings of employers with 0-5 years of work experience in Information Communication Technology Skills needed by TVE graduates and that of employers with 6 and above years of work experience.
2. There is no significance difference in the mean ratings of employers with 0-5 years of work experience in Problem Solving Skills needed by TVE graduates and that of employers with 6 and above years of work experience.
3. There is no significance difference in the mean ratings of employers with 0-5 years of work experience in Technical Skills needed by TVE graduates and that of employers with 6 and above years of work experience.

6. METHODS

The researchers adopted descriptive survey research design for the study. Data were collected and analyzed from a few people that formed a representative sample of the entire population. The descriptive survey was adopted for this study because it determined employers rating of skills needed by TVE graduates for industrial work experience. The study was conducted in Ekiti State of Nigeria and the population consisted of 260 managers of industry registered with Ekiti State chamber of commerce. The instrument for data collection was a structured questionnaire of 16 items designed on a 5-point Likert scale. The instrument was validated by two experts and the instrument yielded a reliability coefficient of 0.78 which was considered adequate. Two hundred and sixty copies of the instrument were administered. Out of the 260 copies administered, 250 were retrieved and used for data analysis. The data collected in relation to research questions were analyzed using arithmetic mean, and standard deviation. The z-test was used to test the null hypotheses at 5% level of significance.

Mean score was applied in selecting the skills needed as identified by the respondents (employers). Mean scores from 3.00 and above were regarded as highly needed, while 2.99 and below was regarded as not needed. For the null hypotheses tested at 0.05 level of significance, the critical z value of 1.96 was used to take decision. The decision rule was as follows; for hypotheses with calculated z value greater than or equal to the critical z value, the null hypotheses was rejected, and for hypotheses with calculated z value less than the critical z value, the null hypotheses was accepted.

7. RESULTS

Research Question 1:

What are the Information Communication Technology (ICT) skills needed by TVE

graduates as identified by employers between 0-10 years of work experience?

Answer to this research question is presented in Table 1.

Data in Table 1 reveal that all the five items were identified to be highly needed. With mean ratings of 4.33, 4.29, 3.70, 4.32, 4.40, 4.21 respectively, the grand mean of 4.21 indicates that respondents rated information and communication technology (ICT) skills as highly needed by TVE graduates for industrial work effectiveness. Also, the standard deviation scores is an indication of the respondents' homogeneity in their ratings of information and communication technology (ICT) skills items.

Research Question 2:

What are the problems solving skills needed by TVE graduates as identified by employers between 0-10 years of work experience?

Answer to this research question is presented in Table 2.

Data presented in Table 2 reveal that the respondents identified item 6 to be very highly needed with a mean rating of 4.52.while other items were rated highly needed with ratings of 4.34,4.30,4.21, 4.22,4.32 respectively. The grand mean of 4.32 indicates that the respondents rated problem solving skills as highly needed by TVE graduates for industrial work effectiveness. The standard deviation scores indicated homogeneity of respondents rating of the items.

Research Question 3:

What are the technical skills needed by TVE graduates as identified by employers between 0-10 years of work experience?

Answer to this research question is presented in Table 3.

Table 1. Respondents mean rating of information and communication technology (ICT) skills needed by TVE graduates for industrial work effectiveness

Items ICT skills needed by TVE graduates	\bar{x}	SD	Remarks
1. Ability to create format save and print document from the computer.	4.33	0.94	Highly needed
2. Ability to run programme simulation	4.29	0.88	Highly needed
3. Ability to use software to monitor system Progress	3.70	1.18	Highly needed
4. Ability to use the internet for easy and swift Communication	4.32	0.96	Highly needed
5. Ability to interpret online map design	4.40	0.80	Highly needed
Grand mean	4.21		Highly needed

Table 2. Respondents mean ratings on problem-solving skills needed by TVE graduates for industrial work effectiveness

Items	Problem-solving skills needed by TVE graduates	\bar{x}	SD	Remarks
6.	Ability to recognize and identify problems	4.52	0.77	Very highly needed
7.	Ability to develop critical thinking to turn problem to opportunities	4.34	0.82	Highly needed
8.	Ability to team up with experts in providing solutions	4.30	0.87	Highly needed
9.	Ability to carefully analyze data collected to enhance Functionality	4.21	0.93	Highly needed
10.	Ability to monitor and evaluate problem-solving progress	4.22	0.92	Highly needed
Grand mean		4.32		Highly needed

Table 3. Respondents mean ratings on technical skills needed by TVE graduates for industrial work effectiveness

Items	Technical skills needed by TVE graduates	\bar{x}	SD	Remarks
11.	Ability to apply academic knowledge in industrial activities	4.47	0.82	Very Highly needed
12.	Ability to adhere to safety rules and regulations	4.80	0.51	Very highly needed
13.	Ability to identify and differentiate effectively types of workshop equipment	4.61	0.78	Very highly needed
14.	Ability to differentiate materials	4.36	0.78	Highly needed
15.	Ability to identify technical faults swiftly	4.41	0.88	Highly needed
16.	Ability to provide solution to identified faults	4.43	0.87	Highly needed
Grand mean		4.51		Very highly needed

Table 4. z-test table of difference in the mean ratings of employers with 0-5 years of work experience in information communication technology skills needed by TVE graduates and that of employers with 6 and above years of work experience

Subjects	N	SD	\bar{x}	z-cal	df	α	z-crit	Decision
Employers with 0-5years	135	3.25	54.19	1.15	258	0.05	1.96	H ₀ Accepted
Employers with 6 +years	125	3.21	54.65					

Table 5. z-test table of difference in the mean ratings of employers with 0-5 years of work experience on problem solving skills needed by TVE graduates and that of employers with 6 and above years of work experience

Subjects	N	SD	\bar{x}	z-cal	df	α	z-crit	Decision
Employers with 0-5years	135	4.06	29.20	0.81	258	0.05	1.96	H ₀ Accepted
Employers with 6 + years	125	3.91	28.80					

Table 6. z-test table of difference in the mean ratings of employers with 0-5 years of work experience on technical skills needed by TVE graduates and that of employers with 6 and above years of work experience

Subjects	N	SD	\bar{x}	z-cal	df	α	z-crit	Decision
Employers with 0-5years	135	4.85	39.63	9.31	258	0.05	1.96	H ₀ Rejected
Employers with 6 + years	125	4.05	34.48					

Data in Table 3 reveal that out of six items, three items were identified to be very highly needed with mean ratings of 4.47, 4.80, and 4.61 respectively. The table further showed that the mean rating of items 11, 14, and 15 which are 4.36, 4.41 and 4.43 respectively were identified to be highly needed. The grand mean of 4.51 indicates that respondents rated technical skills very highly needed by TVE graduates for industrial work effectiveness. The standard

deviation scores indicated that the respondents were homogeneous in their ratings of technical skills identified for work effectiveness.

Hypothesis 1

There is no significant difference in the mean ratings of employers with 0-5 years of work experience in Information Communication Technology Skills needed by TVE graduates and that of employers with 6 and above years of work experience.

The test provided for this hypothesis is presented in Table 4.

Data in Table 4 show z-test analysis of difference in the mean ratings of employers with 0-5 years of operation on Information Communication Technology Skills needed by TVE graduates and that of employers with 6 and above years of operation. The z-calculated value of 1.15 is less than the z-critical value of 1.96 at 0.05 level of significance with 258 degree of freedom. This however implies that there is no significant difference in the mean ratings of the respondents on ICT skills needed by TVE graduates in respect of their years of work experience.

Hypothesis 2

There is no significant difference in the mean ratings of employers with 0-5 years of work experience in Problem Solving Skills needed by TVE graduates and that of employers with 6 and above years of work experience.

The test provided for this hypothesis is presented in Table 5.

Data in Table 5 shows z-test analysis of difference in the mean ratings of employers with 0-5 years of work experience on Problem Solving Skills needed by TVE graduates and that of employers with 6 and above years of work experience. The z-calculated value of 0.81 is less than the z-critical value of 1.96 at 0.05 level of significance with 258 degree of freedom. This however implies that there is no significant difference in the mean ratings of the respondents on Problem Solving skills needed by TVE graduates in respect of their years of work experience.

Hypothesis 3

There is no significant difference in the mean ratings of employers with 0-5 years of work

experience in Technical Skills needed by TVE graduates and that of employers with 6 and above years of work experience.

The test provided for this hypothesis is presented in Table 6.

Data in Table 6 shows z-test analysis of difference in the mean ratings of employers with 0-5 years of work experience on Technical Skills needed by TVE graduates and that of employers with 6 and above years of work experience. The z-calculated value of 9.31 is greater than the z-critical value of 1.96 at 0.05 level of significance with 258 degree of freedom. This however implies that there is significant difference in the mean ratings of employers with 0-5 years of work experience and employers with 6 and above years of work experience on Technical skills needed by TVE graduates for industrial work effectiveness. The null hypothesis is therefore rejected.

8. DISCUSSION

Employers of technical and vocational education (TVE) graduates were of the opinion that information communication and technology (ICT) skills are highly needed by TVE graduates for improved industrial work effectiveness. Further stating, problem solving skills are highly needed by TVE graduates for improved industrial work effectiveness. This is in line with Greatbach and Lewis [11] who stated that generic skills are important because the labour market is intensely competitive, and employers in private, public and the third sector are looking for individuals who are flexible, can take the initiative and have the ability to undertake a variety of tasks in different environment.

Similarly, employers of technical and vocational education (TVE) graduates opined that technical skills are very highly needed by TVE graduates for improved industrial work effectiveness. The findings of the study further revealed that employers with 0-10 years of operation did not differ in their mean ratings on the need for information communication skills by technical and vocational education graduates for industrial work effectiveness. In the same vein, employers of Technical and Vocational Education (TVE) graduates with 0-10 years of operation did not differ in their mean ratings on the need for problem solving skills by technical and vocational education graduates for industrial work

effectiveness. Meanwhile, employers of Technical and Vocational Education (TVE) graduates with 0-10 years of operation differ significantly in their mean ratings on the need for technical skills by technical and vocational education graduates for industrial work effectiveness. These finding conforms to the study of Buntat, et al. [9] who asserted that the current job market has a steady stream towards globalization and diversification. They further stated that industries today are looking forward to technical expertise or hard skills, at the same time they look forward to identifying candidates with employability skills or soft skills. Some of the most commonly required skills are communication and interpersonal skills (written and verbal), team work, problem solving, initiative and self-motivation, planning and organizational skills, drive, numeracy, ability to learn and adapt and time management.

In view of this, employers of labour should endeavour to assess graduates for pre-requisite skills required for the world of work, as well as endeavour to advance in their skills chart as they spend more years in the world of work. Finally, teachers of technology should ensure that TVE graduates acquire skills require to seek, gain and retain employment in the world of work.

9. CONCLUSION

Basically it has long been acknowledged that acquisition of employability skills are of utmost importance for industrial work effectiveness in current world of work and knowledge economy. Skills such as information communication skills, problem solving skills and technical skills have been found to be highly needed by technical and vocational education students for effectiveness in the industrial work activities. It is therefore imperative that the acquisition of these set skills by TVE students should be emphasized in schools. The TVE graduates should also bear in mind that the acquisition of these skills gives them edge over other employees not just for industrial functionality but for the development of the society in which they find themselves. Even so, it is noticed in literature that institutions of higher learning should extinguish the traditional book method of teaching and introduce innovative strategies to impact required positively on the students the required skills for satisfactory job performance in the industries as well as become self-employed.

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COMPETING INTERESTS

Authors have declared that no competing interest exist

REFERENCES

1. Agi UK, Yellowe NA. Management strategies for regenerating secondary education for national development and self-reliance. *Journal of Teacher Perspective (JOTEP)*. Association of Nigerian Teachers (ASSONT) Calabar. 2013;7(2)
2. Ochonma V. Innovation in education; 2011. Available:<http://www.tidenewsonline.com> [Retrieved, July 6th 2012]
3. Okolocha CC. Vocation technical education in Nigeria: Challenges and the way forward. *Unizik Orient Journal of Education*. 2006;2(1):100.
4. Ezeani AN, Urama MS. Technical vocational education and training (TVET) and the nation's industrial development. The Clute Institute International Academic Conference Munich, German. 2014;425-431. Available:http://cluteinstitute.com/conferen_ceroceedings/2014MUPapers/Article%20336.pdf (Accessed 6th July 2017)
5. Abadzi H. Training the 21st century worker: Policy advice from the dark network of implicit memory. UNESCO International Bureau of Education; 2015.
6. Kennedy OO. Re-appraising the work skill requirements for building technology education in Senior Secondary School for Optimum Performance in Nigeria. *European Journal of Applied Sciences*. 2011;3(2):46-52.
7. Ganyaupfu EM. Teaching methods and Students' academic performance. *International Journal of Humanities and Social Science Invention*. 2013;2(9):29-35.

8. Okolocha CC, Ile CM. Strength and business plan in industrial collaboration strategies in the teaching of entrepreneurship in tertiary institutions. *Business Education Journal*. 2011;8(1): 257-273.
9. Buntat Y, Jabor MK, Saud MS, Mansor SMS, Mustafa NH. Employability skills element: Difference perspective between teaching staff and employers' industrial in Malaysia. *Precedia-Social and Behavioural Sciences*. 2013;93:1531-1535.
10. Overtoom C. Employability skills: An update. *Center on Education and Training for Employment*. ERIC Digest no. 220; 2000.
11. Greatbatch D, Lewis P. Generic employability skills II. A paper prepared by the Center for Developing and Evaluating Life-long Learning at the University of Nottingham in Collaboration with the South West Skills and Learning Intelligence at the University of Exeter; 2007.
12. Buck LL, Barrick RK. They're trained, but are they employable? *Vocational Education Journal*. 1987;62(5):29-31.
13. Kearns P. Review of research: Generic skills for the new economy, NCVET, Adelaide Marsh, C 1997, *Perspectives: Key concepts for understanding curriculum*, Falmer Press: London; 2001.
14. Gainer ASTD. update: Basic skills. In VA Alexandria, American Society for Training and Development. (ERIC No. ED 291882); 2002.
15. Lankard BA. Employability: The fifth basic skill. ERIC Digest No. 104. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education; 1990.
16. Robinson JP. What are employability skills? Alabama Cooperative Extension System; 2000.
17. Salleh A, Ressang AM, Mohamad WSW. From studio to the field continuous training. *Proceedings for Architecture Forum*. UiTM; 2004.

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