

Implementing Competency-Based Education and Training in Technical Colleges: A Realistic Approach to Producing Skilled Workforce for Sustainable Industrial Development

by

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Abstract

This study focused on how the implementation of Competency-Based Education and Training (CBET) in Technical Colleges would help in producing skilled workforce for sustainable industrial development. Two research questions and two null hypotheses tested at .05 level of significance guided the study. The population of this study consisted of 168 TVET trainers in all the twelve Government Technical Colleges and Federal Science and Technical College (FSTC) in Anambra State. A purposive sampling technique was used to select 84 TVET trainers from six Technical Colleges including FSTC, Awka (56 Technical Teachers and 28 Instructors). A 24-item structured questionnaire tagged "Competency Based Education and Training Skills Questionnaire" (CBETSQ) was used for data collection. The instrument was validated and the reliability coefficient was established at 0.80 using Cronbach Alpha technique. Mean and standard deviation were used to answer the research questions while t-test statistics was used to analyze data from the null hypotheses at .05 level of significance. The study revealed among others, that TVET trainers have limited awareness and understanding of CBET concept hence they showed little knowledge of its use. Some challenges such as inadequate human and material resources occasioned by inadequate funding were found. It is therefore recommended that TVET Trainers and students should be inducted into CBET with adequate resources so as to enable Technical College graduates contribute to the national and industrial development of Nigeria.

Keywords: *Competency-Based Education and Training, TVET, Training, Technical College.*

Introduction

A productive, competent and skilled workforce is one of the best requirements for achieving sustainable development of any nation (Ayomike, Okwelle & Okeke, 2014). This, according to Ayomike et al, is achievable through a robust and thorough investment and application of an aspect of education known as Technical, Vocational Education and Training (TVET) which is perceived as one of the keys to building this type of workforce for socio-economic, technological and industrial development of a nation, like Nigeria. Nigeria, as a developing nation is undergoing several economic reforms and as such a productive, competent and flexible skilled workforce is needed for further economic development. In recognition of this fact, the Nigerian government through her National Policy on Education places a great premium on TVET as a veritable instrument for national and technological development. However, the scope of TVET programmes, according to (FRN, 2013), is restricted to those in the Technical Colleges, Vocational Enterprises Institutions (VEIs) and National Skills Qualification Framework (NSQF). FRN further stated that the objectives of

TVET are to: provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels; provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development; and give training and impart the necessary skills to individual for self-reliance economically.

Training, according to Uwaifo (2010), is the process of educating with a view to developing mental abilities of people by using resources at their disposal for technological development of a nation. Education and training acquired by students in technical colleges should equip them to play roles requiring higher levels of knowledge, skills and understanding so as to take responsibility in their areas of specialization (Rutayuga, 2012). Such training is obtained through technical education programmes which are designed to develop skills, abilities, understanding, attitudes, work habits and appreciation, encompassing knowledge and formation needed by workers to enter and make progress in employment on a useful and productive basis (Ewuga & Bodams, 2018). This training is offered in Technical Colleges

Technical Colleges are post-basic education schools, where students acquire skills in various trades. According to National Board for Technical Education (NBTE, 2014), the objective of technical colleges is to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. Beako (2018) stated that the major goals of technical colleges are to produce efficient and relevant craftsmen that will promote industrial development in the areas of maintenance, production of goods and general services. According to Beako, technical colleges offer various trades which include Building, Electrical, Woodwork and Auto-Mechanical trades among others. However, TVET which was introduced in Nigeria with the aim of providing technical knowledge and skills necessary for agricultural, industrial, commercial and economic development has not lived up to its expectation in terms of achieving its goals (Okoye & Isaac, 2015). This development, according to Okoye and Isaac, could be as a result of not implementing a workable mode of delivery for TVET programmes. Notably, TVET which is meant to respond to the changing labour market demands is still bedeviled by numerous challenges. Such challenges, according to Ayomike (2013) include low social recognition, obsolete instructional facilities, inadequate funding, poor staffing and poor linkage with industry which leads to production of inadequate skilled workforce. Similarly, several studies have reported numerous challenges of TVET such as inadequate human and material resources in terms of quality and quantity, poor funding, inadequate infrastructural facilities, poor lesson preparation by TVET teachers, social vices, among others (Nwogu and Nwanoruo, 2011; Udoka, 2010; Yusuf and Soyemi, 2012). Notably, a very serious challenge of TVET in many developing countries including Nigeria is lack of employability skills among TVET graduates which could be as a result of its curricular, instructional equipment, mode of delivery, among others (Ayomike, Okwelle and Okeke, 2014). To this end, Rutayuga (2012) suggested that CBET, as a resource intensive system be provided with a lot of human and material resources to enable it function effectively.

Many countries such as Australia, Indonesia, New Zealand, United Kingdom and Ghana have introduced some reforms in their mode of TVET delivery by introducing Competency-Based Education and Training (CBET) concept and it has proven to be effective (Anane, 2013). Rutayuga, (2012) equally agreed that countries such as United Kingdom, Germany, Netherlands and Australia have adopted CBET approach in TVET. According to Rutayuga, the way in which the approach has been adopted, however, differs from one country to another depending on the historical, social, economic and technological advancement of the respective country. For instance, Ghana set up a Council of Technical, Vocational Education and Training (COTVET) in 2006 with a mandate to coordinate and oversee all aspects of TVET (Anane, 2013). According to Anane, the aspect of establishment of this council has brought a radical shift in the design and delivery of TVET curriculum at all levels through CBET system. The CBET is favored due the claim that it has significance in the development of science and technology, specifically in training students in aspects that are in line with occupational and job skills, hence producing graduates who are more competent as per employers' needs (Rutayuga, 2012).

Competency-Based Education and Training (CBET) is an industry and demand driven (outcome based) education and training program based on well-defined industry generated standards that is occupational standards (Anane, 2013). These industry standards are the basis upon which the curriculum, assessment and training materials are designed and developed which should be made available to both trainers and students through short course trainings. Hence Komba and Mwandaniji (2015) suggested that regular training and retraining for the trainers, through workshops, seminars and other short courses should be undertaken as it enables them to acquire up-to-date knowledge and skills to effectively implement the CBET. According to Anane (2013), such skills should be on both the teacher-centered and learner-centered teaching approaches but emphasis should be more on learner centered approach. Kaaya (2012) defined CBET as a programme of study with clearly defined, concrete and measurable objectives of which every student participating in the program should have mastery upon program completion. Often these programs involve students working

at their own pace and structure their own method of learning so as to meet these objectives. Also Kimaryo (2011) stated that training on pedagogical content knowledge will help learners to understand the subject matter. Hence, in CBET, the objectives to be achieved are clearly stated so that learners know exactly what are set to achieve, trainers know the training or learning to be provided and organizations know skill levels expected of their trainees.

Statement of the Problem

As interventions for skills development continue to rise, attempts are made to make TVET more responsive to labour market demands based on International Labour Organization's (ILO's) module of employable skills. Although TVET is recognized as an important sub-sector for tackling growing unemployment in developing countries through provision of practical and applied skills, the sub sector is still bedeviled by numerous challenges. The challenges and opportunities of TVET are unique due to the needs of the changing economy and technological advancement and as such nations should key into the change (Adebambo, 2007). Nigeria, desirous of achieving a sustainable, economic and national development should address a mismatch between training and labour market demands. According to Adebambo, the concern today is not so much about the value and importance of TVET but how to ensure its relevance, responsiveness and value in an increasing knowledge driven and competitive economy. From the forgoing, CBET is a process of learning where students assume responsibility of their own learning, manage their own time for learning, evaluate their progress and assume responsibility for obtaining knowledge. CBET programme requires active participation of students to enhance hands-on-experience which will enable them set up their own businesses or be absorbed in workplaces. These attributes are deficient among the Technical College graduates, thus the need for implementing competency-based education as a more responsive training approach in technical colleges so as to produce skilled TVET graduates.

Purpose of the Study

The purpose of this study is to find out how the use of CBET in Technical Colleges can help in producing skilled workforce for

sustainable national development. Specifically, the study intends to find out:

1. The extent to which TVET trainers are aware and understand the use of CBET concept in Technical Colleges for sustainable industrial development.
2. The challenges TVET trainers could encounter in the use of CBET concept in Technical Colleges for sustainable industrial development.

Research Questions

The following questions were posed to guide the study:

1. To what extent are TVET trainers aware and understand the use of CBET concept in Technical Colleges for sustainable industrial development?
2. What challenges could TVET trainers encounter in the use of CBET concept in Technical Colleges for sustainable industrial development?

Hypotheses

The following hypotheses were formulated and tested at .05 level of significance.

1. There is no significant difference in the mean response of Technical Teachers and Instructors on their awareness and understanding of use of CBET concept in Technical Colleges for sustainable industrial development.
2. Significant difference does not exist in the mean response of Technical Teachers and Instructors on the challenges that could be encountered in the use of CBET in Technical Colleges for sustainable industrial development.

Methodology

The study adopted a descriptive survey research design aimed at finding out how the use of CBET in technical colleges can enhance the production of skilled workforce for sustainable industrial development. A descriptive survey research was used because it is a method of data collection using questionnaire or interview (Gall, Gall and Borg, 2007). The population for this study is 168 TVET trainers in all the twelve government Technical Colleges and Federal Science and Technical College (FSTC) in Anambra State (116 Technical Teachers and 52 Instructors). Through purposive sampling technique, six Technical Colleges having up to eight Technical Teachers or more including

FSTC, Awka were selected for the study. 84 TVET trainers in the selected colleges constituted the sample for the study (56 Technical Teachers and 28 Instructors). A 24-item structured questionnaire developed by the researchers titled "Competency Based Education and Training Skills Questionnaire" (CBETSQ) was used for data collection. The CBETSQ was divided into two sections. Section 'A' sought information on selected personal data of the respondents while section 'B' consisted of items relevant for answering research questions posed in the study. The response format of CBETSQ sections were based on a four-point rating scale of Very High Extent (VHE-4), High Extent (HE-3), Low Extent (LE-2) and Very Low Extent (VLE-1) for research question one while Strongly Agree (SA-4), Agree (A-3), Disagree (D-2) and Strongly Disagree (SD-1) for research question two.

The instrument was validated by three TVET experts in the School of Industrial Technical Education, Federal College of Education, Umunze. As a result of the experts' comments, three items were restructured to produce the final copy. To determine the

Results

Table 1: Mean rating and Standard Deviation on extent of TVET trainers' awareness and understanding of CBET concept in Technical Colleges

S/N	Extent of TVET Trainers' awareness and understanding of CBET programme. TVET Trainers:	Techni cal (56) \bar{X}_1	Teachers		Instructors (28)			Rmk
			SD ₁	\bar{X}_2	SD ₂	\bar{X}_c	SD _c	
1	Foster partnership between school and industry	2.20	1.08	2.32	1.17	2.26	1.09	Disagree
2	Use varieties of training materials such as print, audio-visual and models	3.56	0.87	3.47	0.79	3.52	0.83	Agree
3	Select teaching methods to match with skills	3.46	0.54	3.37	1.10	3.42	0.82	Agree
4	Use both learner and teacher- centered teaching approach	3.80	0.76	3.45	0.88	3.63	0.82	Agree
5	Assess students individually on competencies/skills	3.28	0.72	3.59	1.15	3.44	0.94	Agree
6	Are retrained through workshops and seminars to acquire up to date knowledge and skills	2.40	1.14	2.31	1.06	2.36	1.10	Disagree
7	Select competencies according to industry standards	2.26	1.19	2.42	0.96	2.34	1.08	Disagree
8	Train students on workplace skills and labour requirements	2.39	1.21	2.28	0.78	2.34	1.00	Agree
9	Are trained in pedagogical skills	3.80	1.13	2.33	1.22	3.07	1.18	Agree
10	Support theory with practical skills	3.64	0.98	2.38	1.05	3.01	1.02	Agree
11	Lack of workplace experience learning in industries	2.27	1.16	3.28	1.10	2.78	1.13	Agree



12	Match training materials with competencies	3.89	0.79	2.20	0.66	3.05	0.73	Agree
Cluster Mean/Standard Dev.		3.10	0.96	2.77	0.99	2.94	0.98	Agree

Table 1 presents the mean ratings of the opinions of the respondents on the extent of their awareness and understanding of CBET concept in Technical Colleges. Five items (items 2,3,4,5 and 11) recorded overall mean ratings of 2.78-3.36 which indicated agree to a great extent. Seven items (1, 6, 7, 8,9,10 and 12) recorded overall mean ratings of 2.26-2.36 which

indicated disagree. However, the overall cluster mean of 2.94 indicates that all the twelve items were rated as agreed to a great extent by the respondents. Subsequently, the standard deviation ranged from 0.73-1.18 with overall cluster standard deviation of 0.98 indicating closeness in the respondents' opinions.

Table 2: Mean rating and Standard Deviation on challenges that TVET trainers could encounter in the use of CBET concept in Technical Colleges.

S/ N	Challenges that could be encountered by TVET Trainers	Technical (56)		Teachers		Instructors (28)		Rmks
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂	\bar{X}_G	SD _G	
1	Increase in teaching load and paper work for CBET	3.88	1.18	3.96	1.10	3.93	1.14	Agree
2	Trainers are not inducted into CBET methodology	3.81	0.86	3.97	1.13	3.89	1.00	Agree
3	Lack of hardworking spirit among students	3.67	.079	3.88	0.76	3.78	0.78	Agree
4	Lack of spacious workshops and classrooms	4.01	0.67	4.32	0.82	4.17	0.75	Agree
5	Inadequate funds to provide training materials	4.21	1.13	4.46	1.16	4.34	1.15	Agree
6	Students only read to pass exams	3.65	1.04	3.44	1.19	3.55	1.12	Agree
7	Lack of adequate training and capacity building of trainers	4.02	1.42	4.22	1.06	4.12	1.24	Agree
8	Insufficient time to implementing CBET	3.87	1.07	4.01	1.15	3.94	1.11	Agree
9	Trainers are not competent	2.48	0.88	2.33	0.78	2.41	0.83	Disagree
10	Inadequate Facilitators/Trainers	3.94	0.79	3.72	0.74	3.83	0.77	Agree
11	Lack of workplace experience learning in industries	3.75	0.67	3.56	0.68	3.66	0.68	Agree
12	Poor linkage with industries	4.12	0.65	3.88	0.79	4.00	0.72	Agree
Cluster Mean/Standard Dev.		3.74	0.93	3.79	0.95	3.80	0.94	Agree

Table 2 presents the mean ratings of the opinions of the respondents on the challenges that could be encountered in the use of CBET in Technical Colleges. The table indicates that all the items have the overall mean ranging from 3.55-4.34 except item nine with the overall mean of 2.41 and standard deviation value of 0.83. This implies that the respondents agreed to almost all the items as challenges that could be encountered in the use of CBET in Technical

Colleges. The overall cluster mean of 3.80 further indicates that the respondents agreed to almost all the items. The cluster standard deviation of 0.94 indicates that the respondents' opinions do not differ remarkably.

H₀₁: There is no significant difference in the mean response of Technical Teachers and Instructors on their awareness and understanding of use of CBET in Technical Colleges.

Table 3: t-test analysis on the mean ratings of Technical Teachers and Instructors on the extent of awareness and understanding of the use of CBET concept in Technical Colleges

S/N	Extent of TVET Trainers' awareness and understanding of CBET programme. TVET Trainers:	Technical Teachers (56)		Instructors (28)		t-cal	Decision
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂		
1	Foster partnership between school and industry	2.20	1.08	2.32	1.17	0.86	N/S
2	Use varieties of training materials such as print, audio-visual and models	3.56	0.87	3.47	0.79	1.17	N/S
3	Select teaching methods to match with skills	3.46	0.54	3.37	1.10	1.25	N/S
4	Use both learner and teacher- centered teaching approach	3.80	0.76	3.45	0.88	1.74	N/S
5	Assess students individually on competencies/skills	3.28	0.72	3.59	1.15	1.48	N/S
6	Are retrained through workshops and seminars to acquire up to date knowledge and skills	2.40	1.14	2.31	1.06	0.13	N/S
7	Select competencies according to industry standards	2.26	1.19	2.42	0.96	0.54	N/S
8	Train students on workplace skills and labour requirements	2.39	1.21	2.28	0.78	1.10	N/S
9	Are trained in pedagogical skills	3.80	1.13	2.33	1.22	1.39	N/S
10	Support theory with practical skills	3.64	0.98	2.38	1.05	2.52	S
11	Lack of workplace experience learning in industries	2.27	1.16	3.28	1.10	0.98	N/S
12	Match training materials with competencies	3.89	0.79	2.20	0.66	1.66	N/S
Cluster Mean/SD/t-value		3.10	0.96	2.77	0.99	1.32	N/S

N =84, df=82, p<0.05, *Accept

The data on table 3 shows the t-test item by item analysis of the mean responses of the respondents on their extent of awareness and understanding of the use of CBET concept in Technical Colleges. Item 10 with t-calculated value of 2.52 is more than 1.96 table value at 0.05 level of significance showing significant. The remaining 11 items had t-calculated ranging from 0.13 to 1.74 which are less than 1.96 t-table value at 0.05 level of significance depicting not significant. The grand t-calculated value of 1.32 with respect to 1.96 table value implies that there

is no significant difference in the opinion of Technical Teachers and Instructors on their awareness and understanding of the use of CBET concept in Technical Colleges for sustainable industrial development. Therefore, the null hypothesis is upheld.

Ho₂: Significant difference does not exist in the mean responses of Technical Teachers and Instructors on the challenges that could be encountered in the use of CBET concepts in Technical Colleges.

Table 4: t-test analysis on the mean ratings of Technical Teachers and Instructors on the challenges that could be faced in the use of CBET concepts in Technical Colleges for sustainable national development

S/N	Challenges that could be encountered by TVET Trainers	Technical Teachers (56)		Instructors (28)		t-cal	Decision
		\bar{X}_1	SD ₁	\bar{X}_2	SD ₂		
1	Increase in teaching load and paper work for CBET	3.88	1.18	3.96	1.10	1.21	N/S
2	Trainers are not inducted into CBET methodology	3.81	0.86	3.97	1.13	1.40	N/S
3	Lack of hardworking spirit among students	3.67	.079	3.88	0.76	0.88	N/S
4	Lack of spacious workshops and classrooms	4.01	0.67	4.32	0.82	0.65	N/S
5	Inadequate funds to provide training materials	4.21	1.13	4.46	1.16	0.55	N/S

6	Students only read to pass exams	3.65	1.04	3.44	1.19	1.27	N/S
7	Lack of adequate training and capacity building of trainers	4.02	1.42	4.22	1.06	0.75	N/S
8	Insufficient time to implementing CBET	3.87	1.07	4.01	1.15	0.91	N/S
9	Trainers are not competent	2.48	0.88	2.33	0.78	0.56	N/S
10	Inadequate Facilitators/Trainers	3.94	0.79	3.72	0.74	1.16	N/S
11	Lack of workplace experience learning in industries	3.75	0.67	3.56	0.68	0.48	N/S
12	Poor linkage with industries	4.12	0.65	3.88	0.79	0.51	N/S
Cluster Mean/SD/t-value		3.74	0.93	3.79	0.95	0.86	N/S

N=84, df=82, p<0.05, *Accept

The data on Table 4 shows the t-test item by item analysis on the mean responses of the respondents on the challenges that could be encountered in the use of CBET concepts in Technical Colleges. All the items had t-calculated values ranging from 0.48-1.27 which are less than 1.96 t-value at 0.05 level of significance depicting not significant. The grand t-calculated value of 0.86 with respect to 1.96 t-table value implies that there is no significant difference in the opinions of Technical Teachers and Instructors of TVET on the challenges that could be encountered in the use of CBET in Technical Colleges for sustainable industrial development. The null hypothesis therefore was accepted.

Discussion of Findings

The findings of this study generally revealed that the implementation of CBET approach in the TVET system is overshadowed by a number of factors. The findings from table 1 showed that awareness and understanding of CBET concepts by TVET trainers in Technical Colleges depends on the training provided to the trainers in order to enlighten them about the changes in the system. This was supported by Komba and Mwandaniji (2015) who stated that regular training and retraining for the trainers, through workshops, seminars and other short courses are very important since it enables them to acquire up-to-date knowledge and skills to effectively implement the CBET. Also Beako (2018) stated that the major goals of technical colleges are to produce efficient and relevant craftsmen that will promote industrial development in the areas of maintenance, production of goods and general goods. Hence, there is need for collaboration with industries during training in technical colleges so that students develop competencies that could make

them more relevant to industries (Kufaine & Chitera 2013). To this end, trainers need to be aware and understand the process of selecting training materials and teaching methods that match with the workplace skills and labour requirement. Anane (2013) agreed that trainers can use both the teacher-centered and learner-centered teaching approaches but emphasis should be more on learner centered approach. This will enable trainers to access students individually on competencies/skills.

The findings of the study from table 2 showed that there are so many challenges which TVET trainers could face in the implementation of CBET concept in Technical Colleges. These challenges include inadequate funding, inadequate infrastructural facilities, poor staffing, among others. This finding is in line with the views of Ayomike (2013); Nwogu and Nwanoruo (2011); Udoka (2010) as well as Yusuf and Soyemi (2012), who stated some of the challenges as obsolete infrastructural facilities, inadequate funding, poor staffing, as well as inadequate human and material resources in terms of quality and quantity. To this end, Rutayuga (2012) suggested that CBET, as a resource intensive system demands a lot of human and material resources to enable it function effectively. The finding as regards to the null hypothesis in table 3 revealed that there is no significant difference between the mean responses of Technical Teachers and Instructors regarding awareness and understanding of the use of CBET concept. This finding was supported by Kimaryo (2011) who stated that training on pedagogical content knowledge means trainers' awareness and understanding of how they can help learners understand the subject matter. Table 4 showed that significant difference did not exist in the mean response of Technical Teachers and Instructors on the

challenges that could be encountered in the use of CBET in Technical Colleges.

Conclusion

Competency-based education and training (CBET), is a functional approach to education aimed at preparing learners more effectively for real workplaces. This means that the acquisition of knowledge, skills and attitudes takes into account the requirements of industries and organizations. Several countries such as Australia, Indonesia, UK, China, Japan, New Zealand and Ghana are currently adopting the concept of CBET by reforming their TVET systems. These countries, having made their education and training competency-based, have succeeded in producing competent graduated. The testimonies and success stories of the above mentioned countries in the areas of employment generation, economic and industrial development is enormous. Thus, if a nation like Nigeria keys successfully into a workable mode of TVET delivery through CBET, it will ensure acquisition of relevant knowledge and skills which abound in TVET for production of skilled workforce for sustainable development of industries and the nation as a whole.

Recommendations

Based on the findings of this study, the following recommendations are made

1. CBET should be fully integrated into TVET programmes.
2. Major stakeholders such as non-governmental organizations, international agencies, and others should be involved in BET/TVET programmes.
3. There should be linkage between NBTE and industries in planning and developing TVET curriculum.
4. There should be comprehensive induction of Technical Teachers, Instructors and students on the concept of CBET teaching and learning approach.
5. Since there could be increased workload and too much paper work for trainers, efforts should be made to review the curriculum in line with CBET concept.

REFERENCES

Adebambo, K.A. (2007). *Vocational and technical education and training*. Gabesther Educational Publishers.

- Anane, C.A. (2013). Competency-based training: Quality delivery for technical and vocational education and training (TVET) institutions. *Educational Research International*, 2(2), 117-127.
- Ayomike, C.S. (2013). Status of technical and vocational education in rural institutions in Delta State, Nigeria. *Makere Journal of Higher Education*, 5(1), 81-90.
- Ayomike, C.S.; Okwelle, P.C. & Okeke, B.C. (2014). Competency-based education and training in technical vocational education: Implication for sustainable national security and development. *Journal of Educational Policy and Entrepreneurial Research (JEPER)*. 1(2), 290-300.
- Beako, T.Y. (2018). Work skills needed of undergraduate students of motor vehicle mechanic to maintain clutch assembly in university mechanical workshops in Rivers State. *Journal of Annals of technology Education Practitioners Association of Nigeria, (ATEPAN)*, 1(1), 149-157.
- Ewuga, J.S. & Bodams, A.E. (2018). Technical education for sustainable job creation and economic development in a recessed economy. *Journal of Annals of technology Education Practitioners Association of Nigeria, (ATEPAN)*, 1(1), 1-9.
- Federal Republic of Nigeria (2013). *National Policy on Education*. NERDC Press.
- Gall, M.D.; Gall, J.D. & Borg, W.R. (2007). *Educational research: An introduction* (8th Ed.) New York Press
- Kaaya, P.B. (2012). The importance of competency based education and training (CBET) on industrial performance in Tanzania. *Paper Presented at the TVET Institutions and Industries Collaborations Conference Programme*, 12th October, 2012, Arusha: Tanzania.
- Nwogu, P.O. & Nwanoruo, C.C. (2011). Vocational technical education and training for self-reliance towards national development. *Mediterranean*

- Journal of Social Sciences*, 5(5), 55-59.
- Kimaryo, L.A. (2011). *Integrating environmental education in primary school education in Tanzania: Teachers' perceptions and teaching practices*. Abo Akademi University.
- Kombo, S.C. & Mwandanji, M. (2015). Reflections on the implementation of competency-based curriculum in Tanzanian secondary schools. *Journal of Education and Learning*, 4(2), 73-80.
- Kufaine, N. & Chitera, N. (2013). Competence-based education and training in technical education: Problems and perspectives. *International Journal of Vocational and Technical Education*, 5(3), 37-41.
- National Board for Technical Education (2014). *Curriculum for technical colleges*. NBTE Press.
- Okoye, K.R.E. & Isaac, M.O. (2015). Enhancing technical and vocational education and training (TVET) in Nigeria for sustainable development: Competency-based training approach, *Journal of Education and Practice*, 6(29), 66-69.
- Rutayuga, A.B. (2012). The emerging Tanzania concept of competence: Condition for successful implementation and future development. Unpublished PhD Dissertation presented to the Institute of Education, University of London.
- Udoka, S.T. (2010). The global economic crisis: A challenge to curriculum implementation in Technical/ Vocational Education Technology in Nigeria. *Journal of Research in Education and Society* 1(2&3), 117-124.
- Uwaifo, V.O. (2010). Technical education and its challenges in Nigeria in the 21st century. *International NGO Journal*, 5(2), 40-44.
- Yusuf, M.A. & Soyemi, J. (2012). Achieving sustainable economic development in Nigeria through technical and vocational education and training: The missing link. *International Journal of Academic Research in Business and Social Sciences*, 2(2), 71-77.