

DEVELOPMENT OF EMPLOYABILITY SKILLS AS A COURSE OF STUDY IN TVE CURRICULUM IN NIGERIAN EDUCATIONAL SYSTEM FOR SUSTAINABLE WORKFORCE

Law-Obi, Fidelia Nwanneka

Department of Technology Education,
Alvan Ikoku Federal University of Education

Abstract

The study determined the needed criteria on the development of employability skills as a course of study on TVE curriculum in Nigerian educational system for sustainable workforce. The study answered three research questions and tested one hypothesis. Descriptive survey was adopted to carry out the research in Owerri Educational Zone of Imo State. The population of study was 62 respondents, comprising of 26 Technical Education Lecturers and 36 Engineering Technology Lecturers from the polytechnics in the Zone. There was no sampling due to smallness of the population, an intact population was used. A 26 – item questionnaire titled, 'Development of employability skills as a course of study in TVE Curriculum (DESTVECSW) for sustainable workforce was used for data collection; which was validated by three experts and also try tested outside the area of study. The reliability of the instrument was 0.81 established using Cronbach Alpha. The questionnaire items were generated from the review of the related literature. Out of 62 administered, 60 of them were returned. Mean and standard deviation were used to answer the three research while the null hypothesis was tested at 0.05 level of significance z-test. Mean of 3.50 or above was considered needed. Result of study revealed 10 needed employability skills, 4-items developmental stages of course formation; 6- items methods of teaching employability skills; and 6-items assessment of employability skills in a learner; and there was also no significance difference between Technology Educators and Engineering Technology Lecturers on the needed employability skills of TVE students. Consequently, It was recommended that this course should be integrated in technology/ technical education programme. The findings of should be integrated for classroom instructions and more researches on the development of employability skill as a course of study should be encouraged. It is therefore, concluded that employability skills is highly needed for optimum performance of employee in workplace .and should be integrated in TVE curriculum.

Keywords: Sustainable workforce, Curriculum, Course of study, Employability skills, TVE

Introduction

Every country is trying to prepare their graduates for existing economic challenges; and for a globally competitive workforce. They want graduates to enter the workforce with the actual skill needed in industries, thereby eliminating disparity between the skills taught in the school and those demanded in the industries, indicating that efforts should be geared towards improving the quality of teaching and learning towards preparation of sustainable workforce.

A sustainable workforce are workers, who will meet up with the productivity needs of the current time without forestalling future productivity both in number, attitude, strength, knowledge and changing technologies. A work is sustainable if a worker gets the job, grows on the job and develops their role, leading to long term career progression and stability. In today's knowledge-based competitive economy, technical skills are no longer enough to get a job and keep it. (Merritan Oseni, 2007). Having known that TVE dwells mainly in the development of workforce that have competency on the mastering of job specific technical skills and associated tact knowledge. This may have displayed completely, the omission of employability skills as a course of study in TVE curriculum while the effectiveness of any curriculum is measured by the

extent to which a trained person can use their skilled acquired from school for sustainable employment.

Curriculum has many definitions, and no single definition conveys a total meaning of curriculum. One can say that it is the total instruction given in school, which consists of written statement of aims and objective of courses coupled with teaching contents and evaluation. The teaching contents are of theoretical knowledge, practical to be acquired, attitude and necessary support materials to be used to present the content (Okoroafor, 2009). Curriculum development is a process of planning learning opportunities intended to bring about a positive change in the learner and subsequent evaluation of the extent of achievement of the stated goals (Okoroafor, 2009). Curriculum serves as a pivot on which challenges such as economic, political, social and educational development of a nation is hinged. It is the collective representation of regular or particular course of study.

A course of study is the subject matter of the curriculum. It is a written document that provides the planning and logical organization of instructional content designed for educational needs (Nwachukwu, 2006). In the construction of a courses of study, the teacher takes into consideration the relationship of the entire educational programme of the organization, the objectives of the course, the need of the students, the contents of the course, the equipment and facilities available, the most appropriate methods of instruction for each parts, contents of the course, students learning activities, resource materials including instructional aids, procedure and instrument for evaluation (Nwachukwu & Ede, 2001). A course of study may vary in size from a few passages containing merely a list of topics covered to several pages and include objectives, course content, notes to the teacher, student's activities, equipment and list of references which can be developed by external body or by the teacher. A course of study externally or internally developed is used in the preparation of unit plans or lesson plan, sometimes called course outline (Okoro,2006). Every programme has course of study including, TVE (Technical Vocational Education).

TVE is the aspect of education that provides knowledge in general education in addition to the study of technologies, acquisition of skills , attitude and understanding of knowledge of occupation in various sectors of economics; it provides trained manpower in the applied sciences, technology particular at craft, advanced craft and technical levels (Federal Republic of Nigeria, FRN, 2013) which can be achieved after undergoing programme through Technical Colleges, College of Education (Technical), Polytechnics and Universities that offer courses in Technical Vocational Education (TVE) in Nigeria. TVE Lecturers / Educators from these afore mentioned institutions provides the technical knowledge and skills for the production of technicians, technologist, technical educators and other skilled personnel needed for general economic development of the nation. The potential of achieving results through TVE programme is placed on course contents which embraces knowledge and skills only. No course content is based on any makeup of employability skills. It is of note that the objective and contents of the curricular of TVE programmes are realized from occupational standards or derived from analysis of technical tasks carried out on the job. The effectiveness of TVE curriculum measured by the extent to which trained persons can use the skills for employment. Osuala (2010) declared that the contemporary curriculum of TVE is ill-adopted to inculcate employability skills, often described as inflexibly overloaded, too academic and are not yielded to employability skills requirements in the present workplace. However, there is a need to emphasize and integrate some employability skills into the TVE curriculum to ensure that graduates acquire such skills into the TVE curriculum and can compete in the 21st century workforce.

Skill is manipulative, job-specific, competence utilized by an individual to achieve a product. Technical skills are competencies needed in a workplace that are highly essential for successful

operation of a technical worker (Robinson, 2000). A technical skill cluster comprises of product skills denoting knowledge and proficiency relating to products; business skills entails understanding competences in dealing with organisational matter and industrial skills denotes understanding and proficiency in manoeuvring or navigating within the industry. Skills are generic and task specific for performing knowledge, Skills involve concepts, strategies, behaviour, attitude and perspectives required for or contribute to business/ industrial success (Gray in Moruku, 2008). Skills are made of technical/ job specific and related skills necessary to perform a particular job while non-technical/ employability skill denotes the non-technical skills and competences in modern workplace, which are highly needed for successful operation of workers -craftsmen, technician, technologist among others (Robison, 2000)

Employability skills can also be called essential or fundamental skills or soft skill; unlike technical or occupational skills, employability are generic encompasses human competencies, social competencies and competencies in learning and changing methodologies (Oseni, 2012), which cuts through all ladders of employment in different industries. Employability skills include among others; Teamwork skills, communication skill, problem solving skills, initiate and enterprise skills, technology skill, others are planning and organizational skills, self-management skills and learning skills (Australian Council of Education Research, ACER, 2002; Fajaaryati, etal, 2020; Holida & Seaman ,2024). Employability skills is the capability of one maintaining attractiveness in labour market through acting on the anticipated changes in task and work environment (De Cirip, Vanloo and Sanders, 2002); while US department of education define employability skills as general skills that are necessary to succeed in the labour market at all employment levels and in all sectors (Clark, 2016). These skills have been organized into five groups; Communication skills, Self-management skills, Personal attribute, Higher-order thinking skills and technology skills, after a consensus from bodies that identify employability skills and traits (ACER, 2002).

Commonwealth Australian (2006) opined that communication skills denotes reading /writing, speaking/listening; a fundamental skill necessary for success in any job which is highly utilised in all work practices, a medium of relationship between the employees and employer; while self-management skills entails individual ability to learn new things, manage time, work with any race , sex, whether old or young, work in team and realizing the expected outcomes (Commonwealth of Australian (COA), 2006; Rempersad, 2001). Personal attributes are accepted behaviour of a present day employee such as; loyalty, commitment, integrity, reliability and positive self-esteem. Others are motivation, honesty and adaptability. It is a general attribute relevant to any work place but it is a life skill (commonwealth of Austrialian, 2002). The higher order thinking skills acquired by employer and employee helps in determining the height of an industry in terms of growth and competitiveness in the global economy and also in the area of decision making, innovative, problem-solving skills, creativity, others are planning and organizing skills. Lastly, is the technology skills, which entails understanding, use and application of technology in the workplace – in area of training the learner with technologies ranging from Information Technology (IT), robotics, computerized production system, equipment and machinery in industries. Technology skills are also applied in planning and management function, operating machinery and technology in routine and complex task coupled with trouble shooting machinery and technology (COA, 2006; AERC, 2001).

Employability skills needed by graduate varied across industries depending on the level and extent of task to be performed and the objectives of the industry (ACER, 2000; Oseni, 2002). TVE graduates work in various industries on graduation; and the possession of employability skills are highly needed, for workers that master the skills are safer, more productive and adapt to changes in the job better, coupled with learning technical skills more easily, work faster and have better wages. Organisation for Economic Cooperation and Development (OECD) estimates

that increasing essential skills (employability skills) by 1% increases productivity by 2.5% (Oseni, 2012). TVE has affected knowledge and skill in the curriculum; while attitude which is part of employability skills, standing as effective domain of educational objective has been neglected. This is confirmed by Olatunji (2013), who lamented that our products (graduates) have advanced knowledge and skills in their different fields but with little or no regard for professional and ethical standard that govern them. Clark (2005). stressed that lack of effective educational outcome is evident in the soft skill (employability) shortage among employees in the workplace. In addition, Jayaram & Engmann (2014) pointed out that basic cognitive and technical skills are important in workplace but non-cognitive skills such as communication, punctuality, problem solving and flexibility are most important. Agih, Allen-Agih and Sokare (2015) reiterated that effective educational objectives that focus on individual attitudes feeling and positive dispositions must be acknowledged and integrated into the curriculum of educational institutions. Obi (2016) stressed that, attitude is an employability skill, an appropriate moral goal in technical education for, if it is missing, technical competence has been wasted and misapplied.

There is need to inculcate employability skills through teaching and learning. According to Kwok (2003) employability skill can be inculcated through teaching and learning alongside subject- specific knowledge as a product of the same process. Finding of research supported that communication as employability skills can be inculcated through discussion, presentation, question and answer while teamwork skill will be learnt through performing task / assignment by grouping (Munadi et al. in Fajaryati, 2020). Kwok added that the inclusion of these skills into curriculum denote equal weight with content knowledge, thereby compelling the teacher / Lecturer to teach the skills in the context of the course contents. It has been stated that soft skills must be integrated as a learning content and will not be taught in isolation but in the context of the course content for the purpose of knowledge rooting (The Economist Intelligent, 2015). Obi (2008) asserted that employability skills in TVE curriculum should be a named course; comprising of all the make-up of the skills as contents of the course, so that, it will command adequate attention but the teaching techniques will be through application of the employability skills to TVE contents of the course knowledge. On the enhancement of creativity (employability skill) in TVE students; Law-Obi and Ogbuanya (2017) findings revealed that technical educators should use multiple teaching and learning techniques, such as demonstration, stimulus variation, illustration, brainstorming, problem solving so that creativity, high order thinking skills will be ignited in TVET students. Employability skills development encompasses of active learning techniques, provision of prompt feedback and respect for diverse talent and ways of learning (Orlich, et al, 20001), Other ways of maximizing students learning and enhancement of job preparation skill is through assessment. Assessment of employability skills criteria have been in practice in the classroom, Law-Obi and Ogbuanya (2017) revealed that the process and product are assessed by its originality and creativity displayed; oral and written report coupled with its completion within the stipulated time. A higher order assessment of cognitive domain such as analysis, synthesis evaluation (Bloom, 1956) are also the way of inculcating higher order thinking skills thereby maximizing students learning and enhancement of job preparation skills (Chickering and Gamon, 1987).

Nowadays, employability skills are considered an important graduate learning outcome, for it enables one to get jobs and keep on growing on it. It is believed that a country's competitiveness in the global market depends on the workforce that have acquired both the technical knowledge needed for specific occupation and employability skills required for all jobs. Having known that TVE dwells mainly in the development of workforce that has competency on the mastering of job specific skills and associated tacit knowledge. This has displayed the omission of employability skill as a course of study in the TVE curriculum while the employers of labour are not ready to teach these skills on the job. In confirmation, Carnevale, Garnier and Villet (1990)

stated that employers depend on educators to provide job-ready and training ready entry level employees. Teicher (1999) highlighted that higher educational institutions are meant to serve the function of cognitive development on training and competencies in specific job areas and socialization. Therefore, it is deemed necessary and timely to investigate the development of employability skills as a course of study in TVE curriculum. Thereby forming an intimate connection with the enabling structure and dynamics of economics. Thus achieving industrial demand-driven educational system resulting in the realization of the composition of sustainable workforce in the workplace.

Purpose of the Study

The main purpose of this study was to investigate the needed criteria in the development of employability skills as a course of study on TVE curriculum in Nigerian educational system for sustainable workforce.

Specifically, the study sought to:

1. Identify employability skills needed by the students of TVE .
2. Determine the stages needed in the development of employability skills as a course of study in TVE curriculum
3. Determine teaching methods needed for the inculcation of employability skills in the TVE students.
4. Determine the assessment of employability skills as a course of study

Research Questions

The study answered the following research questions:

1. What are the employability skills needed by TVE students.?
2. What are the stages in the development of employability skills as a course of study in TVE curriculum.?
3. What are the teaching methods needed for the inculcation of employability skills in TVE students?
4. How will the evidence of employability skill possession be assessed in TVE students?

Hypothesis

The null hypothesis was tested at 0.05 level of significance

1. There is no significance difference on the mean rating of Engineering Lecturers from Polytechnics and Technical Educators on the needed employability skill by TVE students.

Methods

The study made use of survey research design to determine the needed criteria on the development of employability skills as a course of study on TVE curriculum in Nigerian educational system using Owerri Educational Zone as an area of study. The population of study was 62 respondents, comprising of 26 Technical Education Lecturers and 36 Engineering Technology Lecturers from the polytechnics from the Zone. There was no sampling due to smallness of the population, an intact population. The questionnaire titled, 'Development of employability skills as a course of study in TVE Curriculum' (DESTVEC) for sustainable workforce was used for data collection. The reliability of the instrument was 0.81 established using Cronbach Alpha. The questionnaire items were generated from the review of the related literature; which consisted of four sections, A to E. Section A, solicited for information on the personal data of the respondents. Section B, assesses the academia identification of employability skills needed by the students of TVE. Section C, was based on the stages of development of employability skills as a course of study. Section D is concerned with the teaching method needed for the impartation of employability skills while Section E concentrated on the assessment of the learners' possession of employability skill. The instruments made use of five points Likert Scale – Highly Needed (HN), Needed (N), Barely Needed (BN), Not

Needed (NN) and Highly Not Needed (HNN). The response category values were assigned 5,4,3,2, and 1 respectively. The instrument was validated by three experts from Technical Education, Engineering Technology and Curriculum outside the area of the study; mean and standard deviation were used to answer the research questions while Z- test was used to answer the hypothesis and any item with a mean of 3.50 or above was considered needed. All hypothesis was tested at 0.05 level of significance. Out of 62 questionnaire administered only 54 were completed and returned.

Table 1: Respondents' mean rating of the employability skills needed by TVE students

S/N	Items	Mean	SD	Remark
1.	Industrial code of conduct	4.66	0.82	N
2.	Organization and planning	3.89	0.76	N
3.	Professional Ethics	4.38	0.78	N
4.	Adaptability to technology dynamics	4.43	0.86	N
5.	Communication skill	4.44	0.77	N
6.	Problem solving skill	4.45	0.76	N
7.	Innovation/ creativity	4.36	0.65	N
8.	Higher order thinking skill	3.92	0.82	N
9.	Technology skill	4.34	0.81	N
10.	Team work skill	4.20	0.79	N

The data presented in Table 1, revealed that 10 items had mean range from 3.89 to 4.66 above the minimum cut off point of 3.50. these items are the needed course contents of the employability skills as a course of study to be integrated for achievement of a sustainable workforce. SD – Standard Deviation

Table 2: Respondents' mean rating stages of course formation

S/N	Items	Mean	SD	Remark
1.	Course Title /Number/ Credit Units – Employee Professional Practice with Code (EPP,412) with 2credit unit.	4.35	0.78	N
2.	Objective of the Course – To achieve Professional competencies in workplace	3.98	0.79	N
3.	Course Description	4.45	0.71	N
4.	Reference and Tools	3.89	0.81	N

The data presented in the table 2 showed that the 4 items had the mean ranging from 3.89 to 4.45, above the minimum cut off of 3.50. These items are the required stages of course formation.

Table 3: Respondent mean rating of method of teaching employability skills

S/N	Item	Mean	SD	Remark
1	Teaching with demonstration and Demonstration in the context of technical education courses in TVE curriculum	4.23	0.76	N
2.	Using stimulus and response	3.81	0.75	N
3.	Brainstorming	4.65	0.69	N
4.	Teaching based on previous knowledge	4.36	0.68	N
5.	Team teaching method and teamwork Learning strategies	4.55	0.66	N
6.	Experimental and practical method	3.75	0.83	N

The data presented in table 3 revealed that 6 items had their mean ranging from 3.75 to 4.65 above

minimum cut off point of 3.50. These items are the required teaching methods for the impartation of employability skills in the students.

Table 4: Respondents' mean rating of assessing of employability skills

S/N	Item	Mean	SD	N
1	Assessment employability skills in the context of other courses in TVE	4.22	0.68	N
2.	Assessment based on its contents only	3.23	0.86	N
3.	Using higher order assessment strategies such as analysis, synthesis and evaluation	4.54	0.88	N
4.	Using word problem and reflective question strategies in assessment of the skills	4.33	0.98	N
5.	Using rating scale or checklist in assessment in assessment of the skills	4.67	0.77	N

The data presented in table 4 showed that the 4 items had their mean ranging from 4.22 to 4.46 above the minimum cut off point of 3.50. These items are the required assessment for employability skills for sustainable workforce while 1 item was rated 3.23, below the minimum cut off indicating that it was not accepted as part of le

Table 5 : Z- test of the Difference Between the Mean Response of Technical Educators in Colleges and Engineering Technology Lecturers from Polytechnics on the needed employability skills for sustainable workforce.

S/ N	Technical Staff	Mean	Standard Deviation	N	Df	Standard Error	Level	Z-cal	Z-crit
1	Technical Educators	4.05	0.899	36	128	0.68	0.05	0.511	196
2.	Engineering Technology	4.08	0.896	26					

The z-test analysis summarised in table 5 revealed that there is no significant difference between the mean rating of technical educators and engineering lecturers on the needed employability skills for sustainable workforce. It tested at 0.05 z-level and degree of freedom, 128. The calculated z-value is 0.511 less than the critical z-value, 196. This has led to decision that the null hypothesis should be accepted

Discussion of Findings

It was found out from the first research questions that 10 items were needed employability skills to be integrated as the content of the course in table 1. They were identified by ACER9 (2002) in agreement with Oseni (2012); who mentioned that employability skills are generic, encompasses human, social competencies and competencies in learning and changing methodologies/technology, all the identified skills belong to this group; which are team work, communication problem solving, initiate and enterprise, self-management and learning (Fajaryati et al, 2020; Holoida & Seaman, 2024).

The second research questions are the stages of developing a course of study; which are rated in the table 2 and all the items were needed stages. Nwachukwu in agreement with Ede (2001) highlighted that in the preparation of course of study considerations are taken with reference to the relationship of educational programme, the objective; needs of students, methods of instruction, contents of the course, students learning activities, resource materials, including instruction aids; procedures and instrument for evaluation including reference and tools; Obi

(2008) supported that employability skills should be a named course and all the makeup of the skills as the content of the course.

The research findings in table 3 indicated that there is need to inculcate employability skill through teaching and learning alongside subject specific knowledge (Kwok,2003) through performance; and it can be imparted through discussion, presentation, question and answer while team work skill will be learnt through performing task / assignment (Munadi et al in Fajaryati, 2020) and will be taught in the context of other causes for the purpose of knowledge rooting(The Economist intelligent, 2015). All the methods of teaching as stated in the question as stated in the question were rated above the needed in accordance (Orlich et al, 2001; Law-Obi & Ogbuanya, 2017).

All the items in table 4 for assessment of employability skills were rated above the minimum cut off indicating the acceptability as indicated (Law-Obi & Ogbuanya, 2017); a higher order assessment of cognitive domain such as analysis, synthesis and evaluation, equally needed in the assessment of higher thinking skill. There is no significant difference established that technical educators and engineering lecturers understand the needed employability skills for the sustainable workforce.

Conclusion

Workers utilized a broad range of general and specific manual skills. As the complexity and responsibilities of job increases, specific manual skills become less weighty and unattractive than the higher order conceptual skills and theoretical knowledge. Therefore, every nation should strive to produce a workforce that possess both manual and basic skills, which determines the quality of their workforce and their mobility and flexibility of their workforce across industries as their structure of the economy changes. Which is in turn positioned the country to compete successfully in era of rapid economic and technological change. Which indicates that, TVET curriculum must reflect this continuum.

Recommendations

1. It is therefore, recommended that, the developed course should be integrated into TVE programme of studies
2. The findings of the study should be integrated into classroom instruction
3. More researches in the development and integration of employability should be encouraged.
4. TVE policy statement for TVE curriculum should be revised in line with skills changes.

References

- Agih, A. A . Allen-Agih, M & Sokare, I.B (2015). Building capacity for student-teachers through the development of effective traits and disposition. A paper presented at the 2nd international conference on National capacity building strategy for sustainable development and poverty alleviation at Dubai.
- Boahin P. & Boahin P. (2018) Competency-based curriculum. A framework for bridging the gap in teaching, assessment and the world of work. *International journal of vocational and Technical education research*. (4) 1-15.
- Clark, D. (2016). Softskills and e-learning London epic performance improvement
- Common wealth of Australia (2002) Employability skills for future. Melbourne: Department of education science and training.
- Commonwealth of Australia (2006). Employability skills: from framework to practice (An introductory guide for trainers and assessors). Melbourne Department of education
- Curnevale A.P, Gainer, L.J & Villiet J. (1990). *Training in America*. CA Josey-Bass Publishers

- De Grip, A, Van Loo, J & Sanders, (2002). The industry employability index: Taking account of supply and demand characteristics. Maastricht: Research Centre for Education and the Labour market (ROA). Faculty of Economics and Business Administration Maastricht University
- Eze, T.I & Okoroafor, A.O (2012). New approaches to the development of Technical, Vocational Education and Training (TVET) curriculum for improved labour productivity
- Fajaryati, N, Budiyomo, Akhyar M & Wiranto (2020). The employability skills needed to face the demands of work in the future: Systematic literature reviews. <https://doi.org/10.1513/eng>
- Holida, N.A & Sermon, N.A (2024). A study of employability skills from the employers and youth perspective.
- Law-Obi, F.N & Ogbuanya T.C (2017) Teaching strategies needed for enhancing creativity in TVET for industrialization in Imo State, Nigeria.
- Morrison, J (2006) STEM education monograph service, attribute of STEM education.
- Obi, L.E. (2016). Engineering Practice in the time of Economic Recession. A paper presented at the 3rd Eastern Nigeria Merit Award Ceremony Owerri.
- Olatunji, M. O. (2013). Teaching and Assessment of affective characteristics. A critical missing link in on-line education. *International journal on new trends in Education and their implications*. (4) 1
- Okonkwo, U. (2012) The Engineer professionalism in society, Awka, SCOA Heritage system
- Okoroafor, P.N. Curriculum process and implementation Abia state, Ossy Computer.
- Oseni, M.I. (2012). Training of Engineering Technician and Craftsmen as a Vehicle of Transformation A paper presented at the 21st COREN Engineering Assembly, Abuja.
- Osuala (2010). Vocational-Technology Education and Work skill requirements in contemporary contemporary address delivered at the NVA Annual Conference at University of Nsukka, Nigeria.
- Shame, R, Bryan, L.G & Robert, J. (2009). Identifying the employability skills needed in the according to Supervisors of College of Agriculture, Food and Natural Resources' graduates www.researchgate.net/publication/237700419. *Journal of Southern Agriculture Education Research*, 57(1)
- Teichler, U. (1999). Research on the Relationship between education and the world of work, past achievements, problems and new challenges of higher education, (38)169-190
- The Economist Intelligence unit (2015). *Driving the skills agenda: Preparing students for the future*: New York.