Creative Skills in Technical Vocational Education and Training (TVET) for Self-Reliance and Life Long Learning

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Abstract
This study was carried out to determine the creative skills in TVET for self reliance and lifelong learning in the Nigerian society. The survey research design was adopted for the study with a population of five hundred and fifty one (551). Purposive sampling technique was used to select four government technical colleges and a simple random sampling was adopted to draw a total of thirty (30) teaching staff from each college. This gives a total sample of one hundred and twenty (120) that was used for the study. The instrument used for data collection was a twenty (20) – item structured questionnaire titled 'Creative Skills Performance Indicators in TVET Questionnaire' (CSPITQ). Data collected were analyzed using mean scores and population t – test. The mean was used to answer the research questions while the population t – test for single mean was used to test the hypotheses at 5% level of significance with 119 degree of freedom. Findings of the study revealed that creative skills in TVET as measured by the performance indicators for thinking and producing skills are needful for self reliance and lifelong learning in the Nigerian society. It was therefore concluded that creative skills enhance the productive engagement and the competitiveness of an individual in the job market. Recommendations were made to include restructuring TVET program to focus on developing creative skills and abilities in learners, and measuring students performance through school by teachers against performance indicators for both thinking (soft) and producing (hard) skills.

Key Words: Creative Skills, Lifelong Learning, Self-Reliance, TVET

Introduction:

The huge rate of unemployment, poverty and poor socio-economic status of most Nigerian graduates has generated an outcry from government agencies, non-governmental organizations, parents, and international organization. This according to Olukanni, Aderonmu, Ogbiye, and Akinwumi (2014) has led to new education reforms/policies with emphasis on Technical Vocational Education and Training (TVET) geared towards helping the youths and adults to be self-reliant. This is in recognition of the shift in the global economy, the emergence of new sectors and the digital revolution which required skilled work force for the survival of the economy. Nigeria has to reposition its education sector to prepare its young people to cope with the changing technological and economic environment through TVET.

The role of TVET in the economic growth and development of countries cannot be underestimated as it ensures well-trained and motivated workforce who maximizes output to expedite socio-economic development. Johanson and Adams (2004) stressed that TVET focused on the actual needs of labour market by designing flexible programmes that serve the needs of production and service sectors and provides practices and learning experiences that best serve job requirements. According to the ILO (2000), TVET prepares people for employment since it is concerned with the acquisition of knowledge, skills and attitude for the world of work. In the view of Usman and Tyabo (2013), TVET has been an integral part of national development strategies in many societies because of its impact on human resources development, productivity, and economic growth. As opined by Center on International Education Benchmarking (CIEB, 2014) cited in Vivien (2015), TVET has the ability to transform the economy of any nation with a range of objectives.

According to the Federal Government of Nigeria (FGN) as contained in the National Policy on Education (NPE) 2013, TVET aims at enabling individuals acquire vocational and technical skills, expose students to career path and explore usable options in the world of work (industry, agriculture, social, commerce, etc). These objectives enable youths to have an intelligent understanding of the increasing complexity of technology and stimulate creativity. TVET aims at equipping individuals to use their heads and hands in order to survive in a world that is essentially work-oriented. In view of these objectives, Okolocha (2012) concludes that TVET is geared towards the production of the educated man who can effectively work with his head, heart and hands. This implies that TVET aims at producing individuals with creative skills.

Creativity is the act of turning new and imaginative ideas into reality. Creativity is characterized by the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena, and to generate solutions. Okoro and Mgboyebi (2015) maintained that for one to be successful in life, creativity remains very essential. Onajite and Fadumiye (2016) see creativity as the ability to bring something new into existence. Creativity begins with a foundation of knowledge, learning a discipline, and mastering a way of thinking. One can learn to be creative by experimenting, exploring, questioning assumptions, using imagination and synthesizing information. Learning to be creative is akin to learning a sport. It requires practice to develop the right muscles, and a supportive environment in which to flourish. From various definitions, it implies that if you have ideas but don't act on them, you are only imaginative but not creative. Creativity therefore involves two processes: thinking, then producing.

Thinking is the ability of using the mind to reason or reflect. It refers to the use of the mind to form thoughts or arrive at conclusions. Thinking as a creative process requires practice in order to develop the skills associated with it. Thinking skills otherwise called soft skills are generic employability skills needed for productive engagement in an occupation or organization. The Australian Chamber of Commerce and The Industry and Business Council of Australia, listed these skills to include communication, teamwork, problem solving, initiative and enterprise,

self-management and the willingness to learn and take responsibility. (ACER, 2002). Thinking skills, as described by Andrews and Higson (2008), cover such areas as coping with uncertainty, working under pressure, planning and strategic thinking, reliability, communications and interpersonal interactions, teamwork and networking, writing and speaking, self-confidence, self-management and time-management. Different scholars including Caballero, Walker, & Fuller-Tyszkiewicz, 2011; Cabellero & Walker, 2010; Lowden, Hall, Elliot, & Lewin, 2011; Rust & Froud, 2011 refer to thinking skills as generic skills, soft skills, transferable skills, cross-disciplinary skills, graduate attributes, core skills, key skills, basic skills, cross-curricular skills, common skills, essential skills, enterprise skills, and employability skills. As opined by Andrews and Higson (2008), these skills are necessary for graduates to participate and to develop in the employment market.

Producing as a creative process involves the act of making, creating or bringing forth something new into existence. They are skills set required for effective engagement in the production process in the society. These according to Investopedia (2018) are called hard skills. Investopedia (2018) defined hard skills as specific, teachable abilities that can be defined and measured. Hard skills are specific abilities, or capabilities, that an individual can possess and demonstrate in a measured way. Possessing a hard skill connotes mastery and an expertise within the individual to perform a specific task or series of tasks to complete a job. Tran (2016) opined that hard skills are teachable abilities or skill sets that are easy to quantify. According to him, hard skills are learned in the classroom, through books or other training materials, or on the job. Hard skills are part of the skill set that is required for a job. They include the expertise necessary for an individual to successfully do the job. They are job-specific and are typically listed in job postings and job descriptions. Hard skills are acquired through formal education and training programs, including college, apprenticeships, short-term training classes, online courses, certification programs, as well as by on-the-job training.

These skills as listed by Tran (2016) in broad categories include Accounting, Administrative, Analysis, Analytics, Automotive, Banking, Bookkeeping, Carpentry, Computer, Construction, Data, Design, Editing, Electrical, Engineering, Financial, Hardware, Healthcare, Information Technology, Languages, Mechanical, Medical, Nursing, Optimization, Pharmaceutical, Pipefitter, Plumbing, Project Management, Programming, Research, Reporting, Science, Software, Spreadsheets, Teaching, Technology, Testing, Translation, Transcription,

Word Processing, and Writing. Onwidiokit (2009) enumerated the performance code for productivity skills to include ability to handle objects or apparatus correctly, ability to set up work tools correctly with correct bearings, ability to manipulate objects and apparatus correctly, having good experimental posture, ability to have good eye – hand coordination, ability to construct models, ability to draw accurately, ability to relate the variables quantitatively, ability to get necessary data, ability to summarize data in a graphical form, if

required, ability to undertake all calculations required accurately, and the ability to assign correct units of measurement. These skills have implications for lifelong learning as it ensures proper continuous integration of the individual into the society.

Lifelong learning is the ongoing, voluntary, and self-motivated pursuit of knowledge for either personal or professional reasons. It enhances social inclusion, active citizenship, personal development, as well as self-sustainability, competitiveness and employability. Lifelong learning focused on meeting the diverse and context-specific learning needs of all age groups, including the acquisition of basic literacy and technical skills through both formal education and effective alternative pathways to learning. There are several approaches or processes to lifelong learning, one of which is TVET. It becomes imperative therefore to examine the various creative skills in TVET for lifelong learning towards proper integration of the individual into the society. This remains the focus of this study.

Statement of the Problem

The increasing rate of population explosion and consequently unemployment and unemployability which have continually been posing social and economic problems to both government and individuals are clear indications that austerity measures, structural adjustment programmes and other economic policies of government are not to be relied upon in reviving the economy of Nigeria. These policies, as tried in Nigeria have not yet facilitated Nigeria's economic recovery.

Parents and guardians are desirous of the ability of their children and wards to find or create jobs after a course of training. On the contrary, we found graduates who are underproductive, unemployed and dependent roaming the streets looking for white collar jobs that are in short supply. This point to deficiency in creative skills needed to compete favourable in the job market. It shows the failure in the training programme to provide for the acquisition and development of creative and marketable skills that are related to the ever-changing work oriented society.

The training of graduates that will meet the demands of the rapidly changing employment community demand that TVET and technical educators are duty bound to help students acquire and develop skills and attitudes for employment to be self reliant. It is on this that this study seeks to determine the various creative skills in TVET needed for self reliance and lifelong learning.

Purpose of the Study

The general purpose of this study is to determine the creative skills in TVET for self reliance and lifelong learning in the Nigerian society. Specifically, the study intends to:

1. Find out the thinking skills performance indicators in TVET for self-reliance and lifelong learning in the Nigerian society
2. Investigate the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Research Questions

The following Research questions guided the study:

1. What are the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society?
2. What are the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society?

Null Hypotheses

H_{O1}: There is no significant difference between the sample mean and the hypothesized value on the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

H_{O2}: There is no significant difference between the sample mean and the hypothesized value on the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Methodology

The research design adopted for this study was the survey design. The design according to Akpabio and Ebong (2009) enables the researchers to elicit information from the population and subject the data obtained to statistical analysis for the purpose of drawing conclusion based on the findings. Akwa Ibom State was chosen as the area of study. The population of the study was five hundred and fifty one (551) which comprised all the teaching staff in the seven (7) government technical colleges in Akwa Ibom State. A purposive sampling technique was adopted to select four government technical colleges and a simple random sampling was used to draw a total of thirty (30) teaching staff from each college. This gives a total sample of one hundred and twenty (120) that was used for the study. The instrument used for data collection was a twenty (20) – item structured questionnaire titled 'Creative Skills Performance Indicators in TVET Questionnaire' (CSPITQ). The questionnaire consisted of three sections: A, B, and C. Section A contained the demographic information on the respondents. Section B contained 10 items structured to address research question one, while section C contained 10 items which focused of addressing research question two. Responses were made on a four point rating scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The responses were weighed as follows: SA – 4 Points, A – 3 Points, D – 2 Points, and SD – 1 Point.

The Instrument was face validated by three experts in the department of vocational education, University of Uyo. The reliability of the instrument was determined using Cronbach Alpha which yielded the reliability coefficient of 0.84, implying that the instrument was reliable to be employed for the study. Data collected were analyzed using mean scores and population t – test. The mean was used to answer the research questions while the population t – test for single mean was used to test the hypotheses at 5% level of significance with 119

degree of freedom. A mean score of 2.5 and above was considered as Agree, while the mean score below 2.5 was taken to mean that respondents disagree to the items. As for the hypotheses, where the calculated t – value is greater than the critical (table) t-value, the null hypotheses were rejected.

Data Analysis

Research Question 1: What are the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society?

Table 1: Thinking (Soft) skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

S/N	Performance indicators	Mean	SD	Remark
1.	Ability to view things in new ways (thinking outside the box)	3.3	0.71	Agreed
2.	Ability to conceive a new idea in the mind	3.3	0.45	Agreed
3.	Ability to communicate ideas and thoughts correctly	3.5	0.55	Agreed
4.	Ability to relate one object or event with others	3.2	0.53	Agreed
5.	Ability to reason logically	3.4	0.65	Agreed
6.	Ability to make good guesses	3.4	0.82	Agreed
7.	Ability to design models	3.5	0.50	Agreed
8.	Ability to apply the principles of science in solving problems posed	3.4	0.42	Agreed
9.	Ability to deduce from the data or evidence at hand	3.3	0.65	Agreed
10.	Ability to predict accurately	3.2	0.63	Agreed

Aggregate Mean = 33.50, Grand Mean = 3.35, Cut off point is 2.50

Result from Table 1 shows the grand mean of 3.35 for items 1 – 10 is above the cut-off point of 2.50. Respondents therefore agreed on thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society.

Research Question 2: What are the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society?

Table 2: Producing (Hard) skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

S/N	Performance indicators	Mean	SD	Remark
11.	Ability to organize and manipulate data using ICT (ICT skill)	3.4	0.41	Agreed
12.	Ability to plan for a project (Project planning skill)	3.5	0.49	Agreed
13.	Ability to manage a project (Project Management skill)	3.2	0.81	Agreed

14.	Ability to report progress of work in writing (Technical Writing skill)	3.3	0.70	Agreed
15.	Ability to get motivated and self inspired on a given job (Motivational skill)	3.1	0.96	Agreed
16.	Ability to identify and select appropriate materials for construction of any given work	3.2	0.63	Agreed
17.	Ability to maintain good posture and correct handling of tools at work	3.4	0.65	Agreed
18.	Ability to perform a job according to specifications. (Complying with specifications)	3.3	0.65	Agreed
19.	Ability to perform a given job with little or no errors (Accuracy)	3.2	0.63	Agreed
20.	Ability to have a clean, pleasing overall appearance of the job (Finishes)	3.5	0.52	Agreed

Aggregate Mean = 33.10, Grand Mean = 3.31, Cut off point is 2.50

From Table 2 above, the grand mean of 3.31 for items 11 – 20 is above the cut-off point of 2.50. Respondents therefore agreed on producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society.

Null Hypothesis 1: There is no significant difference between the sample mean and the hypothesized value on the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Table 3: Population t – test for single mean to determine the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Variable	n	$\bar{X}$	SD	df	t – cal	Crit - t
Thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society	120	33.50	5.91	119	15.76	1.98

P = 0.05, df = 119

Result from Table 3 indicated the calculated t – value of 15.76 is greater than the critical t – value of 1.98 at 0.05 level of significance with 119 degree of freedom. Hence, the null hypothesis which stated that there is no significant difference between the sample mean and the hypothesized value on the thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society was rejected.

Null Hypothesis 2: There is no significant difference between the sample mean and the hypothesized value on the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Table 4: Population t – test for single mean to determine the producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Variable	n	$\bar{X}$	SD	dF	t – cal	Crit - t
Producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society	120	33.10	6.45	119	13.76	1.98

P = 0.05, df = 119

The result from Table 4 indicated that the calculated t – value of 13.76 is greater than the critical t – value of 1.98 at 0.05 level of significance with 119 degree of freedom. Hence, the null hypothesis which stated that there is no significant difference between the sample mean and the hypothesized value on the producing skills performance indicators in TVET for self-reliance and lifelong learning in the Nigerian society was rejected.

Discussion of Findings

Thinking skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

The result of analysis of hypothesis one reveals that the calculated t – value of 15.76 is greater than the critical t – value of 1.98 at 0.05 level of significance with 119 degree of freedom. From this result, the null hypothesis was rejected. The sample mean of 33.50 is greater than the hypothesized value of 25, implying a positive difference. This means that the listed performance indicators for thinking skills in TVET are needful for self reliance and lifelong learning in the Nigerian society. For TVET to produce creative graduates, students performance through school should be measured against the performance indicators such as ability to view things in new ways, ability to conceive a new idea in the mind, ability to communicate ideas and thoughts correctly, ability to relate one object or event with others, ability to reason logically, ability to make good guesses, ability to design models, ability to apply the principles of science in solving problems posed, ability to deduce from the data or evidence at hand, and the ability to predict accurately. This finding agree with Andrews and Higson (2008) and Onwidiokit (2009) who opined that soft skills such as communication, ability to reason logically, and the ability to predict accurately are necessary for graduates to participate and to develop in the employment market.

Producing skills performance indicators in TVET for self reliance and lifelong learning in the Nigerian society

Analysis of hypothesis two reveals that the calculated t – value of 13.76 is greater than the critical t – value of 1.98 at 0.05 level of significance with 119 degree of freedom. With this

result, the null hypothesis was rejected. Again, the sample mean of 33.10 is greater than the hypothesized value of 25, meaning a positive difference. This implies that the listed performance indicators for producing skills in TVET are needful for self reliance and lifelong learning in the Nigerian society. Measuring learners performance in TVET against performance indicators such as ability to organize and manipulate data using ICT, ability to plan for a project, ability to manage a project, ability to report progress of work in writing, ability to get motivated and self inspired on a given job, ability to identify and select appropriate materials for performance of any given work, ability to maintain good posture and correct handling of tools at work, ability to perform a job according to specifications, ability to perform a given job with little or no errors, and the ability to have a clean, pleasing overall appearance of a job enables graduates gain creative skills for self reliance and lifelong learning in the Nigerian society. This finding falls in line with the findings of Tran (2016) and Investopedia (2018) who maintained that hard skills are required for effective engagement in the production process in the society.

Conclusion

On the strength of the results of data analysis and the findings of this study, it was concluded that creative skills in TVET as shown by the performance indicators for both thinking and producing skills are needful for self reliance and lifelong learning in the Nigerian society. These skills enhance the productive engagement and the competitiveness of an individual in the job market.

Recommendations

From the findings of this study, the following recommendations were made:

1. TVET program should be structured by curriculum planners to focus on developing creative skills and abilities in learners
2. To develop creative skills in learners, students performance through school should be measured by teachers against performance indicators for both thinking (soft) and producing (hard) skills
3. Trainees and Learners in TVET program should show commitment in their training by demonstration of creative abilities to enable them compete favourably in the job market
4. Government at all levels should make provisions for adequate facilities and equipment in TVET institutions to enable trainers blend theory with practice to enhance the acquisition of creative skills by learners
5. TVET institutions should establish strong partnership with industries for student's internship to enable them learn more and demonstrate creative abilities before graduation.

6. Government at all levels should make provision in their annual budget for graduates of TVET program with creative abilities to start up their business instead of waiting for white collar jobs.

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