ASSESSING THE IMPACT OF INDUSTRIAL TRAINING IN BRIDGING SOFT SKILLS GAP AMONG VOCATIONAL AND TECHNOLOGY EDUCATION UNIVERSITY UNDERGRADUATE STUDENTS IN BAUCHI STATE

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Abstract

Employers always express growing worries that most of the recent university vocational and technology education graduates do not possess the necessary soft skills to transition into the labour market. Educators are asked by employers and policy makers to provide instruction which would develop students skills in both the technical and soft skills required to be workplace-ready. The research study was designed to understand the degree to which industrial training enhance business education students' soft skills development, specifically in the areas of the seven soft skills development model to be attained by tertiary institution students developed by Malaysian Ministry of Higher Education (2006) which include; communication skill, critical thinking and problem solving skills, teamwork skill, life-long learning and information management skills, entrepreneurial skill, ethics and professional moral skill and leadership skill. The study adopted a descriptive research design. The area of the study was Bauchi State, Abubakar Tafawa Balewa University (ATBU), population for the study was 279 students of department of vocational and technology education ATBU, who returned from Industrial Training (IT) for the year 2015/2016 academic session. The sample size was determined using Krejcie and Morgan (1970) table of sample size were 159 students were randomly selected. The questionnaire is made up of 17 items and the questionnaires was called Industrial Training Soft Skills Gap (ITSSG Questionnaire) and was validated by three experts. Cronbach Alpha method was used to determine the reliability of the items and a coefficient of 0.76 was obtained. The questionnaire was administered to 159 respondents by the researchers. One hundred and fifty-nine copies of the questionnaires were distributed, returned and considered valid. The analysis of the data was done using mean and standard deviation via Statistical Package for Social Sciences (SPSS) version 21. The findings revealed that participating in an industrial training contributes to a large extent to students' soft skills development, the study recommended that Strategies and innovative approaches should be developed for keeping of essential soft skills components development to keep track of the students' progress in soft skills mastery.

Keywords: Industrial Training (IT), Soft Skills (SS), Vocational and Technology Education (VTE).

Introduction

There is an increasing demand on new university graduates to be "workplace ready" when entering into the job market. Not only because the current job market is becoming more competitive for applicants, but it is also less likely to provide employee training programs for its newly employees due to the huge cost in providing additional training (Abel, Deitz & Su, 2014). Being workplace ready involves developing skills in both the technical and soft skills areas (Schulz, 2008). While educators provide expertise and focus on technical skills preparedness, the areas for soft skills development, such as communication skill, critical thinking and problem solving skills, teamwork skill, Life-long learning and information management skills, entrepreneurial skill, ethics and professional moral skills and leadership skill are often left untested for new graduates entering the workplace (Beard, Schwieger & Surendran, 2008).

Industrial training is often the first professional work experience for a student, and may be the best opportunity to blend theory with practice in both technical and soft skills preparedness. Historically, technical skills were the only skills necessary for career employment; but today's workplace is showing that technical skills are not enough to enable individuals to secure employment or keep them in the employments (James & James, 2004). Because soft skills are critical for productive performance in today's workplace, current and future organizations' leaders are emphasizing the development of soft skills (Nealy, 2005).

Soft skills need to be introduced and given emphasis in the university curricula so that the students can learn them and know their importance early in their academic programs before they embark on their career (Wellington, 2005). But nowadays, most of these soft skills are expected to be acquired by the students during their pre-graduate experience i.e. industrial training and other activities in the school. Some researches done on the importance of soft skills in the workplace like Klaus (2010) in one of his study found that 75% of long-term job success depends on people skills, while only 25% is dependent on technical knowledge. Another study indicated that technical skills contribute only 15% to one's success, whereas 85% of success is due to soft skills (John, 2009). As employers are progressively looking for employees who are mature and socially well adjusted, they rate soft skills as number one in importance for entry-level success on the job (Wilhelm, 2004).

Onwuji (2004) defined industrial training (IT) as a skills acquisition programme that blends theory with practice in the industrial and commercial activities of the national economy within a specified timeframe. Also, Industrial Training can be referred to as a program which aims to provide supervised practical training within a specified period. It is also a program designed to expose students of higher institutions in Nigeria to acquire practical skill training in the industries. This training can be carried out either in government organisations or in the private sectors. In today's world, merely having a degree is not a guarantee for employment, nor is it a reliable indicator of the individual's competence in a job. Rather, graduates must have current and relevant knowledge, practical experience, soft skills and a positive attitude to allow them to be competitive in the job market. They must possess the necessary knowledge and skills before they go out into the working world. In line

with this, the Industrial Training component of the undergraduate program constitutes a vital component in the drive to strengthen the key competencies required to improve the graduates' ability to work.

The Industrial Training Fund (ITF) was the first Nigerian Federal Government parastatals established for human resource training and development. Decree No. 47 of 8th October 1971 in line with post-independence drive for accelerated economic growth and development established it during the second National development of 1970-1974. On inception, ITF identified a wide gap between practical skills required and theoretical training of students which was the same view shared by the employers of labour indicating that there was a great need for adequate preparatory training for employment in industry (ITF, 2002). A nation's human resources can be improved through purposeful and result oriented education and training. Work based program, which basically prepares individuals for work seen as an innovations phenomenon is the process of human resource development and training in Nigeria, hence the introduction of Industrial Training/Students Industrial Work Experience Scheme (SIWES) into the formal educational system in 1973. The Students Industrial Training was introduced by the Federal Government of Nigeria and funded through the Industrial Training Fund (ITF). Industrial Training is a skill training program, which forms part of the approved minimum academic standards in the various degree and diploma programs for all tertiary institutions in Nigeria (ITF, 2003). It seeks to bridge the gap existing between theory and practice in science and technology programs in Nigerian tertiary institutions. It is aimed at exposing students to the work environment, machines and equipment, professional methods and techniques required for a successful working life. The earliest and most widely accepted objectives of vocational and technology education were to provide a mechanism for meeting the needs of the society for skilled manpower. It should be recognized that the needs of the nation and that of the school and indeed, all institutions of the society require trained people, if they are to survive. Specially trained personnel are needed for the survival of each of these institutions of the society, including the field of medicine. All the trainings need the perspective of the industrial training program.

According to the Partnership for 21st Century Skills, the framework definition of soft skills consist of life and career skills, learning and innovation skills, information, media and technology skills, critical thinking, problem solving, communication, and collaboration (Partnership for 21st Century Skills, 2014). Therefore, how students develop 21st century skills is a most salient topic among educators and policy makers (Foster, 2013). Recognizing the value of soft skills and their impact on the workplace is the first step in addressing the needs of our global economy. Niche markets and businesses thrive because of individuals who possess the soft skills to initiate innovative and creative approaches to a global economy resulting in positive social and economic outcomes (Organization for Economic Co-operation and Development [OECD] 2013). Employers expect students to be "employment ready" after university graduation, possessing the necessary technical and soft-skills to be effective in the workplace, although many students are not graduating from university with the essential soft skills to be effective in the workplace (Fischer, 2013). Employers cited the five most important soft-skills valued in the work environment as the abilities to:

1. verbally communicate with persons inside and outside the organization,
2. work in a team structure,
3. make decisions and solve problems,
4. plan, organize and prioritize work,
5. obtain and process information (NACE, 2013).

In addition, nearly 75% of employers claimed they would prefer to hire graduates who possess both technical and soft skills.

Statement of the Problem

The soft skills have great impact on university students' future career development and achievement in both pre-employment interview and on the employment which is highly undeniable (Schulz, 2008). Unfortunately, some educators are still ignorant of the importance of these soft skills or do not support dedicated effort in this aspect. Some researchers also reported the existence of educators and students who were still unaware of how employers valued the importance of soft skills or placed insufficient emphasis on soft skill development (Nikitina & Furuoka, 2012; Osman, Girardi, & Paull, 2012). In fact according to Olusoji (2016), tertiary institutions across the country churn out graduates annually, but a larger percentage of these graduates do not get jobs not because Nigeria's economy is weak, but because they lack 'soft skills'; this is as a result of limited time allotted to industrial training to acquire these soft skills. Olusoji argued that recruitment experts for some organizations and other multinational companies disclosed that Nigerian graduates lack the final touch needed to hand them employment. Olusoji noted that the students could not be blamed for not having these skills, saying "it is not in the curriculum introduced by the Nigerian University Commission (NUC) and, hence, the universities cannot teach the students but can be acquired under intensive industrial training. "What is in the curriculum introduced by NUC and adopted by each university were technical skills, that is, reading the theories and others and not the soft skills needed to win the hearts of some organizations and other multinational companies which are highly demanding in contemporary world, this necessitate this study to bring out clearly the impact of these soft skills for the benefit of educators and all other stake holders.

Purpose of the Study

The purpose of the study is to assess the degree to which industrial training enhance student soft-skills development during their industrial training. Specifically, the study seeks to:

1) Assess the extent to which vocational and technology education students develop soft skills components during their participation in industrial training.
2) Determine the extent to which the processes of soft skills components development bridge vocational and technology education students' soft skills gap.
3) Determine the extent to which the industrial training enhance vocational and technology education students' soft skill components development for career and academic growth.

Research Questions

1. To what extent do the vocational and technology education students develop soft skills components during their participation in industrial training?

2. To what extent do the processes of soft skills components development, bridge vocational and technology education students' soft skills gap?

3. To what extent do the industrial training enhance vocational and technology education students' soft skill components development for career and academic growth?

Methodology

The design adopted for the study was a descriptive research design which is very good in eliciting responses from the respondents in order to assess the impact of industrial training in bridging of students soft skills gap. The area of the study is Bauchi State (ATBU). The population of the study was all the 279, 500 level vocational and technology education students who participated in industrial training exercise in the 2015/2016 academic session; this was obtained from departmental IT office. The sample size was determined using Krejcie and Morgan (1970) table of sample size were 159 students were randomly selected. The instrument used for the data collection was a structured questionnaire; it is made up of 17 items and the questionnaire was called Industrial Training Soft Skills Gap (ITSSG Questionnaire). A total of one hundred and fifty-nine (159) copies of the questionnaire were administered and were all retrieved back. The instrument was structured with a 4 point response likert rating scale options ranging from Very Large Extent (VLE) = 4, Large Extent (LE) = 3, Small Extent (SE) = 2 and Very Small Extent(VSE) = 1. Instrument was validated by lecturers from the Faculty of Technology Education, Abubakar Tafawa Balewa University, Bauchi. The researchers distributed the questionnaires to the respondents with the help of a research assistant. The decision rule was that items with a mean of 2.50 and above were accepted while those with a mean below 2.50 were rejected. The data collected were analysed using mean and standard deviation with aid Statistical Package for Social Sciences (SPSS) version 21.

Results

Research question 1: What is the extent to which vocational and technology education develop soft skills components during their participation in industrial training?

Table 1: Means and standard deviations of vocational and technology educations' perceptions on the extent to which they develop soft skills components development during their industrial training.

S/N	ITEMS	VLE (4)	LE (3)	SE (2)	VSE (1)	N	$\overline{X}$	SD	Criterion Mean	Decision
1.	Communication skill	45	62	23	11	159	3.00	0.89	2.50	Accepted
2.	Critical thinking and problem solving skills	31	39	43	28	159	2.52	1.05	2.50	Accepted
3.	Teamwork skill	51	48	32	10	159	2.99	0.94	2.50	Accepted
4.	Life-long learning and information management skills	38	41	40	22	159	2.67	1.04	2.50	Accepted
5.	Entrepreneurial skill	49	37	29	26	159	2.77	1.12	2.50	Accepted
6.	Ethics and professional moral skills	57	48	25	11	159	3.07	0.95	2.50	Accepted
7.	Leadership skill	35	45	37	24	159	2.65	1.04	2.50	Accepted

Source: Research Data (2016) **Grand Mean** = 2.81

The data in table 1 above reveals that every item has a mean rating higher than the criterion mean of 2.50. For instance items 1 (3.00), 2 (2.52), 3 (2.99), 4 (2.67), 5 (2.77), 6 (3.07) and 7 (2.65), indicates that the respondents agree to some extent that they developed soft skills during their industrial training participation. Also the grand mean value of 2.81 is greater than the criterion mean of 2.50 indicating that undergoing industrial training can enhance soft skills component development to some extent.

Research question 2: To what extent do the processes of soft skills components development bridge business education students' soft skills gap?

Table 2: Means and standard deviations of vocational and technology education students' perceptions on the extent to which the processes of soft skills components development bridge their soft skills gap?

S/N	ITEMS	VLE (4)	LE (3)	SE (2)	VSE (1)	N	$\overline{X}$	SD	Criterion Mean	Decision
8.	Group discussions and activities	48	37	37	19	159	2.81	1.06	2.50	Accepted
9.	Drafting of letters and proposals	45	41	35	20	159	2.79	1.05	2.50	Accepted
10.	Formal and informal interactions	51	49	25	16	159	2.96	0.99	2.50	Accepted
11.	Surrounding activities and events	59	44	26	12	159	3.06	0.97	2.50	Accepted
12.	Verbal and Non-verbal communication	36	51	29	25	159	2.70	1.04	2.50	Accepted

Source: Research Data (2016) **Grand Mean** = 2.86

The data in table 2 above reveals that every item has a mean rating higher than the criterion mean of 2.50. For instance items 8 (2.81), 9 (2.79), 10 (2.96), 11 (3.06) and 12 (2.70) indicates that the respondents agree to some extent that the different processes of acquiring soft skills underwent during their industrial training have tremendously bridge some of their soft skills gap. Also the grand mean value of 2.86 is greater than the criterion mean of 2.50 indicating that undergoing industrial training can lead to bridging of students' soft skills gap to some extent.

Research question 3: What is the extent to which industrial training enhance business education students' soft skill components development for career and academic growth

Table 3: Means and standard deviations of business education students' perceptions on the extent to which industrial training enhance their soft skills components development for career and academic growth

S/N	ITEMS	VLE (4)	LE (3)	SE (2)	VSE (1)	N	$\overline{X}$	SD	Criterion Mean	Decision
13.	Clarify career direction	61	43	21	16	159	3.06	1.02	2.50	Accepted
14.	Identification of personal strengths and weakness in career goals	56	31	30	24	159	2.84	1.13	2.50	Accepted
15.	Clarify academic goals	34	49	36	22	159	2.67	1.01	2.50	Accepted
16.	Identification of personal strengths and weakness in relation to academic goals	34	39	38	30	159	2.55	1.08	2.50	Accepted
17.	Blending of skills and knowledge learned with practice	54	57	18	12	159	3.09	0.92	2.50	Accepted

Source: Research Data (2016) **Grand Mean** = 2.84

Discussion of findings

The research was carried out to assess the impact of industrial training in bridging of business education students soft skills gap. The findings from the research showed that students develop soft skills components to some extent in communication skill, critical thinking and problem solving skills, teamwork skill, life-long learning and information management skills, entrepreneurial skill, ethics and professional moral skills and leadership skill as a result of participating in an industrial training. Students of business education were surveyed at the conclusion of the industrial training exercise to find out the extent to which their participation enhances their soft skills components development thereby bridging their soft skills gap. Survey response data provided evidence that their participation in the industrial training greatly improved the development of the components of soft skills on all the measured scales. This is in agreement with Schulz (2008) who asserted that students entering the job market should be able to develop skills in both technical and soft skills areas. On the process of soft skills development, the students agreed to some certain extent that

group discussions and activities, drafting of letters and proposals, formal and informal interactions, surrounding activities and events and verbal and non-verbal communication played a great role in their soft skills development processes during their industrial training which eventually led to moulding of these soft skills components acquisition in the processes. The findings concurred with Sweitzer and King (2013) who stated that industrial training is an educational approach to collaborating with community partners, connecting class concepts to real-world practice, and solving problems with innovative results, allowing students to develop professional skills and use academic knowledge in a practical setting. Moreover, on the extent to which industrial training enhances business education students' soft skill components development for career and academic growth, it was found that the soft skills component development has improved their direction in both career and academic goals. This is in congruent with Sweitzer and King (2013) assertion that work-based learning opportunities like industrial training has the potential to serve as a bridge from education to employment allowing students to use both technical and soft skills within a community of practice with guidance from a more knowledgeable other, like a supervisor.

Conclusion

The study reveals that undergoing industrial training greatly enhances the soft skills component development of students that are just as good an indicator of job performance as traditional job qualifications (technical skills) as well as career growth and academic goals. Technical skills are the technical abilities and knowledge that one should possesses for entry into the job market, whereas soft skills are those personal attributes and interpersonal qualities that are intangible. Although soft skills are important to recognize and improve, technical skills are critical on the job as well. While employers exceedingly want new employees to possess strong soft skills, the technical and soft skills must complement one another. The findings equally indicate the roles of industrial training in soft skills development of students in tertiary institutions. Equally revealed are the processes of soft skills development, how it enhances career growth and academic goals. The research also revealed significant mean ratings of students on the extent to which industrial training impacted positively in their soft skills development thereby bridging some of their soft skills gaps through blending theory with practice.

Recommendations

Based on the results and findings of the study, the following recommendations are made:

1. Universities and other tertiary institutions of learning should partner with employers to identify and teach relevant technical and soft skills so that graduates can be 'workplace ready' entering the job market by developing these skills.

2. Processes of soft skills development, some embedded activities and other soft skills components should be integrated into the curriculum so that lecturers can teach these soft skills components and inculcate other activities to the students; by so doing these will greatly enhance the students' soft skills development.

3. Strategies and innovative approaches should be developed for keeping of essential soft skills components development to keep track of the students' progress in soft skills mastery.

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