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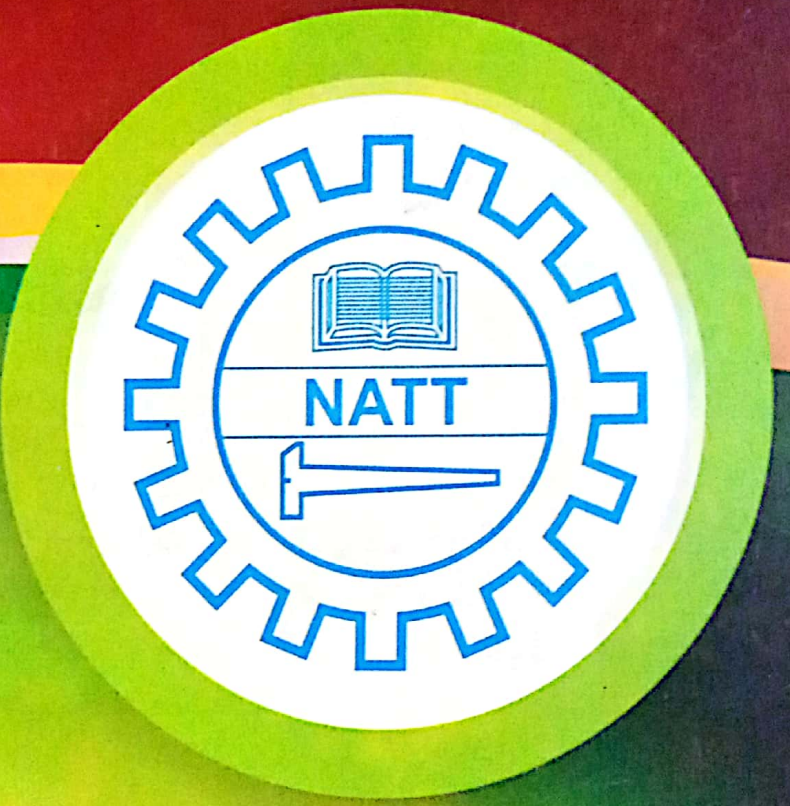

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IMPROVEMENT OF GRADUATE SKILLS ACQUISITION THROUGH UNIVERSITY COLLABORATION WITH INDUSTRY FOR SUSTAINABLE TRANSFORMATION IN NIGERIA

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Abstract
The study explores strategies to improve graduate skills acquisition through university collaboration with industries for sustainable transformation in a developing economy. The study was carried out in north central states of Nigeria. Two research question and two null hypotheses (Ho) were formulated to guide the study. Survey research design was adopted for the study and total of 100 respondents consisting of 60 university academic staff and 40 industrial personnel constitute the population sampled from 3 universities and 5 industries from the zone. Structured questionnaire was designed and validated by 5 experts, was used for data collection and analyses using mean, standard deviation and t-test statistics. The Ho was tested at 0.05 level of significance. Findings show a gap between industries and universities therefore, recommended among others a joint consultative forum in designing and implementation of curriculum for training industrial technology graduates and engaging/utilizing of research work of graduates in improving the industrial sector.

Keywords: Skills, University, Industry, Sustainable Transformation, Nigeria.

Introduction

The provision of education is a productive investment in human capital, which is a stock of skill and knowledge acquired through schooling. The greater the provision of schools, the greater the stock of human capital in the society and consequently, the increase in national productivity and economic growth. The nations' educational goals are to provide equal access to educational opportunities for all the citizen of the country at all levels, both inside and outside the formal school system, and to provide trained manpower for all sectors including the provision of technical knowledge and vocational skills to enable the country to be economically self-reliant (NPE 2004). Traditionally, the provision of skill has been the responsibility of educational and vocational training institution and is too often detached from practical application in the workplace. While employers have a role to play as curriculum advisers and advocate for better work preparation in schools, one of the immediate ways to align skills training initiatives with real work opportunities through the creation of demand-driven "training-to-employment" programme.

The industries, both in the public and private sectors are beneficiaries of the graduates of universities, hence the need for collaboration between the university and industries. Rusell and Flynn (2000), noted that collaboration is an ongoing working partnership with two or more parties having formal, legal contractual agreement with responsibilities specified and in essence, with the partnership taking on a life and purpose of its own. Furthermore, progress is reflected by increased commitment, the ability to overcome obstacles and conflicts

and the willingness to learn by participants. A true partnership thrives when both parties form a cohesive body by practicing guiding principles that support collaboration. These principles include the willingness to change, respect for differences, equal representations in decision making, a share vision, clear goals and expectations.

Manpower planning which is also referred to as human resources planning involves putting right number of people and right kind of people at the right place, doing the right thing for which they are suited for the achievement of goals of the organization and meeting the needs of the people. Mohammed (2005) observed that, the relevance of national policy on education on curriculum of technology should be designed to reflect the changes in technology to meet the human resources need of the industries for increased productivity and national economic development.

Competency development is maximized when curriculum and its implementation is constantly reviewed for improvement, while the teacher's experiences, skills, knowledge in the operation and process of specific curriculum content is enhanced. Okon (2006) defined a professional as an expert with specialized knowledge and skill in an area of study with competencies which might be acquired through training to be functional in the society and for sustainability. According to Okon, professional skills development specifically promote graduate students' retention and competency, increase graduates opportunity for employment, enable graduates self-reliance, give graduates a competitive edge of securing job or position and help them to develop confidence. Professional skill acquisition stimulates technological and industrial development by producing workers who are capable of developing and utilizing technologies for industrial and economic development of a nation.

Dabalen, Oni and Adekola (2000), David (2002), Akerele (2004), NUC (2004), and Fadipe, (2011) have revealed that apart from the qualification that graduates possess, there are other attributes (non-academic skills requirements) which employers of labour emphasis. According to them, these attributes includes analytical skills, good communication skills and good personal and social skills, technical and managerial skills among others. Employers of labour are not interested in those having higher education but also practical skills appropriate for job fulfillment (Abiodun 2010). It is quite unfortunate that the response of employers of labour on the competencies and performance of recent graduates reveal that these characteristic are lacking in the graduates which tertiary institution are turning out into labour market. Although, many employers reiterate that the graduates posses a broad and respectable understanding of the cognitive base in technical disciplines, but they express dismay in the preparation of graduates in those applied technical skills necessary for solving problems and enhancing business productivity.

Statement of the problem

Nigeria is undoubtedly the richest black nation in the world endowed with abundance crude oil deposit and yet she imports fuel. The refineries are in a comatose state thereby aggravating the unemployment problem. Lack of effective entrepreneurship education programme in the tertiary institutions contributes to graduates unemployment and worsts still the curricula and pedagogical arrangement is obsolete, therefore cannot meet the challenges of today's workplace. Hence, the number of graduate turned out are not employable due to the falling and compromised standard, lack of technical and entrepreneurship skills and infrastructural decay among others (Obanya 2004, Odia and Omofonmwan 2007, Reddan, G., & Harrison, G. 2010, Dike 2010, Goransson and Brundenius, 2011). These deficiencies makes it difficult for the industries to employ them as they cannot fit in properly without series of training and retraining programmes which have serious impact on the industries profit margin.

The industries being the employer of these graduates will profit from their services if skills acquiring from the universities are enhanced and tailored towards meeting the needs of the industries. It has also been noted that industries contribute towards university graduates programme is grossly inadequate, under minding the facts that these are about the singular most vital factors in the human capital formation essential to supply the needed manpower for technological and industrial sustainable transformation in our nations developing economy. This study therefore, explores factors responsible for inadequate skills acquisition of Nigeria graduates and strategizes effective collaboration between the universities and industries to improve graduates skill acquisition training in north central states of Nigeria.

Purpose of the study

The purpose of the study was to investigate the improvement of graduate skills acquisition through university collaboration with industries in north central states of Nigeria. The study specifically intents to:

1. Identify the factors responsible for inadequate skills acquisition of the university graduates
2. Determine strategies for effective collaboration between the universities and the industries in graduates' skills acquisition training.

Research Questions

The following are the research questions formulated to guide the study:

1. What are the factors responsible for inadequate skills acquisition of university graduates?
2. What are the strategies for enhancing effective collaboration between the university and industries in graduate skills acquisition training?

Research Hypotheses

The null hypotheses below tested at 0.05 level of significance guided the study:

Ho_1 There is no significance difference in the mean response of the factors responsible for inadequate skills acquisition of the university graduates

Ho_2 There is no significance difference in the mean response of industrial personnel and university staff on the strategies to enhance effective collaboration between university and industries in skill acquisition training.

Methodology

The study adopted survey research design to investigate improvement of graduate skills acquisition through university collaboration with industries for sustainable transformation in north central states of Nigeria. A stratified random sampling was used to select 20 academic staff from each of the 3 universities that offers technology and engineering based courses within the zone. The universities are Federal University of Technology, Minna, University of Ilorin and University of Jos and 8 industrial personnel were selected from each of the 5 industries which include: SCC Construction Company, Crushed Rock industry both in Abuja, Maizube holdings and bronze works in Minna and Bida respectively and Ajaokuta steel company in Kogi. The total population of the study was 100 respondents comprising of 60 university academic staff and 40 industrial personnel across the study area.

A 30 item questionnaire structured on a 5-point response option was used to collect data from the respondents. The questionnaire was structured to indicate the degree to which respondents agree to each item as Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (D) and Strongly Disagree (SD). The response category was assigned numerical value as 5, 4,3,2,1. The questionnaire was validated by three experts in the school of technology education of Federal University of Technology, Minna. Corrections were made appropriately before it was administered. The weighted mean and standard deviation (SD) were used to answer the research questions. Therefore, items with mean score below 3.00 were regarded as disagree while those with mean score of 3.00 and above were regarded as agree. The t-test inferential statistics was used to test the hypotheses at 0.05 level of significance. The t-critical (t-table) value for accepting or rejecting the null hypotheses was 1.98.

Result and Analysis

Research Question 1

What are the factors responsible for inadequate skills acquisition of university graduates?

HO_1

There is no significance difference in the mean response of the factors responsible for inadequate skills acquisition of the university graduates.

Table 1

t-test analysis of mean responses of respondents on what are the factors responsible for inadequate skills acquisition of university graduates.

S/N	Item Statement	X^1	SD_1	X_2	SD_2	t-cal	t-tab	Rem
1.	Poorly equipped workshop and laboratories	4.70	1.21	4.03	0.65	1.21	1.98	NS
2.	Inadequate skill among lecturers required of industries.	4.69	0.36	3.40	0.70	1.25	1.98	NS
3	.Failure in retraining and updating the university academic staff	4.67	0.30	3.05	0.10	0.85	1.98	NS
4.	Obsolete facts are passed to the undergraduates	4.75	0.60	3.86	0.40	0.34	1.98	NS
5.	Low perception on skills acquisition programme	4.70	1.20	3.11	0.30	0.62	1.98	NS
6.	Rapid change / development in technology	4.00	1.39	4.06	0.63	0.50	1.98	NS
7.	Training students with obsolete machine and equipment	4.34	1.00	3.47	0.72	0.59	1.98	NS
8.	Inadequate practical in the school curriculum	4.68	0.32	4.05	0.81	0.50	1.98	NS
9.	Inadequate training materials	4.33	0.83	3.82	1.27	0.60	1.98	NS
10.	Wrong selection of course of study	4.20	1.30	4.01	0.64	1.12	1.98	NS
11.	Unfavourable environmental influence on technology education	4.10	0.75	3.71	0.11	1.08	1.98	NS
12.	Inadequate funding of skill acquisition programmes	4.01	1.29	4.75	0.74	0.21	1.98	NS
13.	Practical works are not carried without the right tools and equipment.	4.71	0.45	4.45	1.05	1.02	1.98	NS
14.	Student are not well supervised in skill training	4.56	0.56	4.70	0.72	0.65	1.98	NS
15.	Skill acquisition is carried out without appropriate materials	4.71	0.45	4.36	0.81	0 18	1.98	NS

Analysis on table 1 shows that the items presented had their weighed mean values ranged from 3.05 – 4.75. The values are above the cut off point of 3.00 which implies that the respondents agreed to the items as regards the factors responsible for inadequate skills acquisition of university graduates.

Research Question 2

What are the strategies for enhancing effective collaboration between the universities and industries in graduate skills acquisition training?

HO_2

There is no significance difference in the mean responses of industrial personnel and university staff on the strategies to enhance effective collaboration between universities and industries in skill acquisition training.

Table 2
t-test analysis of mean responses of respondents on the strategies for enhancing effective collaboration between the universities and industries in graduate skills acquisition training.

S/N	Item Statement	X^1	SD_1	X_2	SD_2	t-cal	t-tab	Rem
16.	Participation of both parties in curriculum review	4.74	0.68	4.65	0.70	0.44	1.98	NS
17.	University-Industry exchange programmes, retraining and internship	4.17	1.10	4.80	1.41	0.67	1.98	NS
18.	Practical project should be given more attention	4.64	0.48	3.73	0.71	0.83	1.98	NS
19.	Joint workshop/seminar on industrial workforce needs	4.34	0.96	4.05	0.41	1.17	1.98	NS
20.	Improved funding of university programmes by industries	4.26	1.15	3.06	0.45	1.26	1.98	NS
21.	Field trips to be given high priority	4.68	0.42	4.10	0.74	0.56	1.98	NS
22.	Curriculum should specify the skills and knowledge required to meet job standards	3.77	0.36	3.75	0.69	0.53	1.98	NS
23.	Engaging students on part time work during vacation	4.09	1.39	3.90	1.07	0.65	1.98	NS
24.	Commercialization of project works	3.70	1.12	3.45	1.15	0.66	1.98	NS
25.	Provision of in-service training for industrial employees in the university.	4.11	1.36	3.71	1.15	0.27	1.98	NS
26.	Releasing experts to university as visiting lecturers.	4.68	0.45	3.40	0.55	1.15	1.98	NS
27.	Establishing of trade and occupation committee	4.74	1.01	4.12	0.64	1.19	1.98	NS
28.	Research tailored towards changes and innovation in technology	4.04	0.78	4.40	0.67	0.23	1.98	NS
29.	Joint research work between universities and industries	4.34	0.96	4.05	0.41	1.22	1.98	NS
30.	Specialized continuing education programme to be offered by universities	4.35	0.96	3.65	1.14	0.87	1.98	NS

Table 2 shows that all the items presented had their weighed mean value ranged from 3.06 – 4.74. These values are above 3.00 indicating that the respondents agreed to the items on the strategies for enhancing effective collaboration between the universities and industries in graduate skills acquisition training. The t-test analysis shows that all the items had their t-calculated (t-cal) value of 1.98. This implies that there was No Significance (NS) difference in the mean ratings of the responses of the respondents on the strategies for enhancing effective collaboration between the universities and industries in graduates' skills acquisition training. Therefore, the null hypotheses were accepted.

Conclusion

In conclusion, this study had revealed that forming an effective synergy between the universities and industries for the improvement of graduates' skills acquisition is about the single most important human capital formation essential for growth sustainable supply of needed skilled labour force.

The challenges associated with the current collaboration existing between the industries and universities are numerous and account for the deficiency in skill acquisition of graduates of the university. In summary, the partnership strategies identified in this study are relevant in our present system and if properly put into effective use are capable of improving skill acquisition of graduates for sustainable transformation in our nation's economy.

Recommendations

The following recommendations were made based on the finding of this study:

1. The industry skilled workers should periodically go and teach in the universities to link the world of work more closely with the classroom.
2. Industries assisting school in periodic review and updating of curriculum content and programmes.
3. Universities and industries should engage in effective research programme and utilize the finding of the research in developing the industrial sector.
4. The industries should improve the funding support to skill acquisition activities, donation of machineries and training materials.
5. The government should support industries that accept students for industrial training by offering them tax relieve, reduced tariff on importation of equipment and awarding them contracts.
6. Improvement on the placement and supervision of students for SIWES programmes.

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