EMPLOYERS PERCEPTION OF COMPUTER-BASED COMPETENCIES REQUIRED OF TECHNICAL COLLEGE GRADUATES FOR EMPLOYMENT IN RIVERS STATE

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Abstract
The study ascertained the perception of employers on the computer-based competencies required of technical college graduates for employment in Rivers State. Four research questions guided the study and four hypotheses were tested at 0.05 level of significance. A descriptive survey research design was adopted for the study. The population for the study comprised all 440 employers of technical college graduates in public and private establishments in 23 Local Government Areas of Rivers State. Proportionate stratified random sampling technique was used in drawing137employers (public: 42, private: 95) in 14 Local Government Areas. The instrument for data collection was a four point rating scale structured questionnaire developed by the researcher and validated by experts. Through the use of Cronbach Alpha method, the instrument was found to an overall reliability coefficient of 0.81. Mean and standard deviation were used to answer the research questions and determine the closeness of the respondents' view. While the hypotheses were tested using z-test. The study showed that employers were of the view that word-processing, spreadsheet, computer aided design and networking competencies are required of technical college graduates for employment. The study revealed that there was no significant difference in the mean perception of employers on word-processing, computer Aided design and networking competencies required from technical college graduates for employment; while there was significant difference in the mean perception of employers on spread sheet competency required from technical college graduates for employment. The study recommended among others, that State governments and College heads should provide and maintain adequate computer facilities in technical colleges to equip the students with relevant competencies for work performance.

Keywords: Technical and Vocational Education, Computer-Based Competencies, Perception, Employment.

Introduction

Technical and vocational education (VTE) can be seen as an education that prepares individuals for gainful employment. The Federal Republic of Nigeria (FRN,

2014), in the national policy on education definedtechnical vocational education as that aspect of education which leads to the acquisition of practical and applied skills as well as basic scientific knowledge. This definition emphasizes a general theme of preparing trainees to acquire practical skills, attitudes, interest, and knowledge to perform determined tasksto the benefit of the individuals involved and the society at large. Okoro (2014) referred to technical and vocational education as a form of education which primary purpose is to prepare persons for employment in recognized occupations. Here, technical and vocation education is seen as a precursor of skills, knowledge and attitudes necessary for performance in specific occupations.

In the quest to promote technical and vocational education, the Nigeria Government following the recommendations of the Ashby Commission, established technical colleges in various States of Nigeria (Afebunwa, 2013). Stanford (2014) posited that the establishment of these technical colleges was aimed at:

1. Developing individuals who will be properly equipped with the requisite knowledge and skills for productive life.
2. Developing individuals who will be capable of meeting the modern technological challenges.
3. Equipping individuals with the requisite knowledge and skills for paid or self-employment.
4. Producing highly skilled middle and high level technical manpower to build and maintain the critical infrastructures and institutions driving the economy.

The graduates of these earliest technical colleges according to Okala (2013) acquired the required manipulative skills, scientific knowledge and competencies that qualified them for employment in industrial and commercial ventures. Okala also observed that these graduates did not possess computer skills as most jobs were performed manually and with the use of simple machines. Today, the wide spread use of computer in almost all facets of life and economy is obvious.

Computer is an electronic device used in collecting, storing, retrieving, processing, presenting and transmitting data. The ability to use computer efficiently has become an inevitable tool for assessing individuals for employment in both public and private sector of the economy. Okon (2012) defined the computer as an electronic device that processes data according to a set of instructions. Computer serves as the medium of instruction in different educational subjects to achieve desired level of proficiency (Jerkins & Springer, 2013).

The application of computer-based competencies (CBC) according to Okirie (2013) is a powerful enabler of employment and development. The use of computer has profound impact on the labour market. Advances in the use of computer have helped to boost goods production, reduce economies of scale and boost individual productivity to the extent of causing a movement of labour from industry to the service sector (Camdeessus, 2014). Welter (2013) and Okala (2013) stated that many good and well-paid jobs for highly skilled workers are made possible with the use of

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computer. With the use of computer, most workers can perform more complex tasks and take high knowledge level decision with less direct supervision.

Consequent upon the advent of computer and computerized machines in various workplaces, the Federal Government in the year 2000 directed the National Board for Technical Education (NBTE) in conjunction with National Commission on Colleges of Education (NCCE) to include computer education as part of the curriculum for technical colleges (Mba, 2013). The same directive was given to the National Universities Commission (NUC) with respect to universities. The objectives of the computer-based curriculum, according to Steven (2013),were to:

1. Assist individuals to become confident users of computer through the acquisition of basic knowledge and skills to assist them in their chosen careers.
2. Prepare individuals for the world of work.
3. Help learners to have an open and flexible mind and to assist them to adjust to the inevitable future change.

Teaching and learning content of the computer applications include word processing, spreadsheet, graphics, networking and programming among others (Justus, 2014). This implies that, upon completion of a course on computer study, students should be proficient and competent in the use of computer and its software especially in the world of work.

In the opinion of Stone (2013), competence the quality or state of being functionally adequate or having knowledge, skill or strength for a particular duty or respect. Chaffey (2012) stated that to be competent implies that an individual has acquired the knowledge, skill, attitude and judgment necessary for successful performance at a specified proficiency level in a given work. In the context of this study, computer-based competencies (CBC) referto computer oriented knowledge, skills, attitudes, and judgment that should be acquired and applied by technical college graduates for employment. These competency areas include word processing, computer-aided design, spreadsheet and networking among others (Okon, 2012). The synergy of combining CBC with other acquired skills gives most graduates increased chances for employment (Okala, 2010).

According to Winefield (2014), employmentrepresents the initiation of young people with required job skills into the world of work. Vocational educationists see employment from the perspective of skills and competencies possessed by individuals which qualifies the individual for work; the lack of these may also reduce the individuals chances for employment. A study by Okorie (2013), showed that, the lack of employable skills and competencies were responsible for the high level of unemployment in Nigeria. The present day job environment requires the application of CBC in conjunction with other relevant skills. The implication is that, the employment of technical college graduates largely depends on the CBC and the acquired technical skills they possess.

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The feelings of employers toward CBC possessed by technical college graduates are vital to their employment. This position is supported by Golf (2013), who observed that the perception of employers on CBC of prospective employees could contribute to their chances of being employed. As noted by Yocanda (2013), perception is the process by which sensory information in the environment is taken and used as information in order to interact with the environment. It is the awareness, comprehension or an understanding of something, becoming aware of one's environment in a way that is unique to the individual (Lee, 2014). By implication, employers' sensory information about CBC required on a job would probably influence their choice of employees. However, other intervening variables such as form of employment (public and private) and job location could determine the perception of employers on the computer-based competencies required of prospective employees.

Form of employment (public or private) sometimes determines CBC required for employment. Akin (2013) stated that, private institutions such as banks, industries, companies, and others require prospective job applicants and employees to posses computer-based competencies. They have seen that the application of CBC promotes high level of job performance in terms of improved product designs, drafting, construction, fabrication, operation, maintenance, trouble-shooting activities, and generally improves service delivery. The same can be said of employers of labours in the public sector. The wide use of computers in most government offices, departments, ministries and parastatals indicate that prospective employees should be competent users of computer.

Job location is also a possible determining factor of CBC required for employment. This is because the use of computer seems more prominent in urban areas as some feel that employers of labour in rural areas may not utilize processes that require the use of computer due to certain constraints (Idike, 2014).

Statement of the Problem

The use of computer in job operations and executions is widely advocated by many employers of labour in both public and private sectors (Okon, 2012). The problem of this study is the incessant complains by employers of labour as reported by Onuegbu (2014) on the inability of technical colleges graduates to perform job operations that require the application of CBC is worrisome. This may result to loss of job and job opportunities by these graduates; which could adversely affect their sociological, psychological and economic conditions as they may experience low self-esteem and become dependent on others. Hence this study on employers' perception of employers on CBC as a prerequisite for employing technical education graduates is considered imperative.

Purpose of the Study

The purpose of the study was to ascertain the:

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1. Perception of employers on wordprocessing competencies required of technical college graduates for employment in Rivers State
2. Perception of employers on spreadsheet competencies required of technical college graduates for employment Rivers State.
3. Perception of employers on computer-aided design competencies required of technical college graduates for employment Rivers State.
4. Perception of employers on networking competencies required of technical college graduates for employment Rivers State.

Research Questions

The following research questions guided the study:

1. What is the perception of employers on wordprocessing competencies required of technical college graduates for employment Rivers State?
2. What is the perception of employers on spreadsheet competencies is required of technical college graduates for employment Rivers State?
3. What is the perception of employers on computer-aided designcompetencies required of technical college graduates for employment Rivers State?
4. What is the perception of employers onnetworking competencies required of technical college graduates for employment Rivers State?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. Employers of labour in public and private sectors do not differ significantly in their mean perception on word-processing competencies required of technical college graduates for employment.
2. Employers of labour in public and private sectors do not differ significantly in their mean perception on computer-aided design competencies required of technical college graduates for employment.
3. Employers of labour in public and private sectors do not differ significantly in their mean perception on spreadsheet competencies required of technical college graduates for employment.
4. Employers of labour in rural and urban areas do not differ significantly in their mean perception on networking competencies required of technical college graduates for employment.

Method

The study adopted descriptive survey design. The population for the study comprised all 440 employers of labour of technical college graduates in the 23 Local Government Areas of Rivers State. A proportionate stratified random sampling technique was used to draw a sample of 140 employers of labour (42 from public and 98 from private establishments) in 14 Local Government Areas (7 rural and 7 urban).

Data were collected through the use of a structured questionnaire titled **—Perception of Employers on the Computer-Based Competencies Required of**

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Technical College Graduates for Employment in Rivers State (PECBCRTCGE)". It was validated by three experts in the Department of Technical Education, Ignatius Ajuru University of Education, Port-Harcourt. The questionnaire has 48 items in four clusters according to the research questions. It was structured on four-point rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Reliability of the instrument was established through a trial test involving 15 employers in Bayelsa State who were not part of the study population. Cronbach Alpha was used to determine the internal consistency of the the instrument which yielded an overall reliability coefficient of 0.81 (0.81 in the first cluster of research questions, 0.83 in the second, 0.79 in the third and 0.82 in the fourth).

The data collected were analyzed using mean and standard deviation to answer the research questions and determine the homogeneity or otherwise of the respondents views. For the research questions, real limit of numbers was applied thus: 0.4-1.4 for Strongly Disagree, 1.5-2.4 for Disagree, 2.5-3.4 for Agree and 3.5-4.4 for Strongly Agree. Decision on the research questions was based on the cluster mean relative to the real limit of numbers. Z-test was used to test the hypotheses at 0.05 level of significance. A null hypothesis was accepted where the calculated z-value is less than the critical z-value. Which means that there is no significant difference and the hypothesis will not be rejected. Conversely, where the calculated z-value is equal to or greater than the critical z-value, it means that there is significant difference and the hypothesis will be rejected.

Result

Results of the study are presented in the tables below.

Research Question 1: What is the perception of employers on word-processing competencies required of technical college graduates for employment in Rivers State?

Table 1

Mean perception of Employers on Word-processing Competencies Required of Technical College Graduates forEmployment Rivers State

S/N	Word Processing Competencies	Employers					
		Public			Private		
		$\bar{}_1$	SD_1	Remarks	$\bar{}_2$	SD_2	Remarks
1.	Ability to create document	3.48	0.69	A	3.72	0.63	SA
2.	Ability to save document	3.43	0.79	A	3.59	0.79	SA
3.	Ability to move around the document	3.62	0.58	SA	3.51	0.82	SA
4	Ability to spell check	3.64	0.57	SA	3.74	0.44	SA
5.	Ability to print document	3.17	1.04	A	3.58	0.54	SA
6.	Ability to retrieve saved document	3.38	0.84	A	3.62	0.77	SA

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Table 1 (Contd.)
Mean perception of Employers on Word-processing Competencies Required of Technical College Graduates forEmployment Rivers State

S/N	Word Processing Competencies	Employers					
		Public			Private		
		$\bar{X}_1$	SD_1	Remarks	$\bar{X}_2$	SD_2	Remarks
7.	Ability to select text	3.10	0.98	A	3.62	0.76	SA
8.	Ability to indent text	2.98	0.99	A	3.45	0.98	SA
9.	Ability to use bullets	3.24	1.01	A	3.33	0.96	A
10.	Ability to move, copy and delete text	3.38	0.87	A	3.51	0.69	A
11.	Ability to centre line to text	3.38	0.92	A	3.57	0.82	SA
12.	Ability to change text appearance	3.50	0.88	SA	3.52	0.81	SA
13.	Ability to select font	3.76	0.57	SA	3.58	0.76	SA
14.	Ability to page number document	3.64	0.57	SA	3.51	0.72	SA
15.	Ability to create and insert table	3.62	0.72	SA	3.41	0.90	SA
16.	Ability to format and delete table	3.48	0.82	A	3.43	0.90	SA
17.	Ability to draw and use word art	3.45	0.82	A	3.55	0.72	SA
18.	Ability to scan, import and save images	3.26	0.87	A	3.46	0.86	SA
19.	Ability to create folder	3.57	0.79	SA	3.82	0.96	SA
20.	Ability to store files in CD-ROMs	3.62	0.79	SA	3.61	0.65	SA
	Cluster Mean		**3.44**			**3.56**	

Key: **N_1= Number of employers in public sector; $\bar{X}_1$= Mean of employers in public sector; SD_1= Standard deviation of employer in public sector; N_2= Number of employers in private sector; $\bar{X}_2$ = Mean of employer in private sector; SD_2= Standard deviation of employer in public sector**

Table1 shows that the mean of the items ranged from 2.98 – 3.82 while the cluster mean for the groups were 3.44 and 3.56. This means that employers in public sector agreed while those in the private sector strongly agreed that technical college graduates require word processing competencies for employment in Rivers State. The standard deviations for all items for the two groups were within the same range indicating that the respondents were not wide apart in their views.

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Research Question 2: What is the perception of employers on spreadsheet competencies required from technical college graduates for employment in Rivers State?

Table 2
Mean Perception of Employers on Spreadsheet Competencies Required of Technical College Graduates for Employment in Rivers State.

S/N	Classroom Management	Employers					
		Public			Private		
			SD_1	Remarks		SD_2	Remark
1.	Ability to create worksheet	3.52	0.82	SA	3.46	0.86	A
2.	Ability to save worksheet	3.36	0.76	A	3.45	0.88	A
3.	Ability to edit worksheet	3.55	0.82	SA	3.78	0.98	SA
4.	Ability to insert & delete row and column	3.64	0.68	SA	3.83	0.97	SA
5.	Ability to perform simple calculation	3.50	0.82	SA	3.66	0.64	SA
6.	Ability to print worksheet	3.50	0.76	SA	3.83	0.95	SA
7.	Ability to use functions	3.48	0.79	A	3.71	0.56	SA
8.	Ability to format worksheet	3.45	0.76	A	3.86	0.94	SA
9.	Ability to create chart in worksheet	3.57	0.58	SA	3.59	0.79	SA
10.	Ability to organize data	3.43	0.79	A	3.62	0.78	SA
11.	Ability to manage data	3.43	0.73	A	3.61	0.68	SA
	Cluster Mean	**3.18**			**3.67**		

Key: **N_1= Number of employers in public sector; X_1= Mean of employers in public sector; SD_1= Standard deviation of employer in public sector; N_2= Number of employers in private sector; X_2 = Mean of employer in private sector; SD_2= Standard deviation of employer in public sector**

Data in Table 2 shows that the mean of the items ranged from 3.36– 3.86 while the cluster mean for the groups were 3.36 and 3.87. This means that employers in public sector agreed while those in the private sector strongly agreed that technical college graduates require spreadsheet competencies for employment in Rivers State. The standard deviations for all items for the two groups were within the same range indicating that the respondents were not wide apart in their views.

Research Question 3: How do employers perceive the computer-aided design competencies required of technical college graduates for employment?

Table 3
Mean Perception of Employers on Computer Aided Design Competencies Required of Technical College Graduates for Employment in Rivers State.

S/N	Computer-aided design Competencies	Employers					
		Public			Private		
		$\bar{X}_1$	SD_1	Remarks	$\bar{X}_2$	SD_2	Remarks
1.	Ability to draft	3.33	0.87	A	3.55	0.72	SA
2.	Ability to design	3.59	0.58	SA	3.45	0.98	A
3.	Ability to analyze	3.33	0.92	A	3.58	0.95	SA
4.	Ability to generate 3D mock-up	3.45	0.79	A	3.64	0.75	SA
	Cluster Mean	**3.43**			**3.56**		

Key: N_1= Number of employers in public sector; X_1= Mean of employers in public sector; SD_1= Standard deviation of employer in public sector; N_2= Number of employers in private sector; X_2 = Mean of employer in private sector; SD_2= Standard deviation of employer in public sector

Table 3 shows that the mean of the items ranged from 3.33 – 3.64 while the cluster mean for the groups were 3.43 and 3.56. This means that employers in public sector agreed while those in the private sector strongly agreed that technical college graduates require computer aided design competencies for employment in Rivers State. The standard deviations for all items for the two groups were within the same range indicating that the respondents were not wide apart in their views.

Research Question 4: How do employers perceive the networking competencies required of technical college graduates for employment in Rivers State?

Table 4
Mean Perception of Employers on Networking Competencies Required of Technical College Graduates for Employment in Rivers State.

S/N	Networking Competencies	Employers					
		Public			Private		
		$\bar{X}_1$	SD_1	Remarks	$\bar{X}_2$	SD_2	Remarks
1.	Ability to conduct internet search	3.79	0.51	SA	3.37	0.59	A
2.	Ability to select appropriate information	3.43	0.79	A	3.49	0.75	A
3.	Ability to authenticate information	3.59	0.58	SA	3.52	0.83	SA
4.	Ability to download information	3.57	0.58	SA	3.57	0.82	SA
5.	Ability to upload information	3.45	0.79	A	3.29	0.96	A

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Table 4 (Contd.)
Mean Perception of Employers on Networking Competencies Required of Technical College Graduates for Employment in Rivers State.

S/N	Networking Competencies	Employers					
		Public			Private		
			SD_1	Remarks		SD_2	Remarks
6.	Ability to save downloaded information	3.48	0.82	A	3.72	0.63	SA
7.	Ability to send e-mail	3.62	0.79	SA	3.62	0.77	SA
8.	Ability to create e-mail address & password	3.50	0.88	SA	3.58	0.76	SA
9.	Ability to use chart & instant messenger	3.62	0.58	SA	3.45	0.98	A
10.	Ability to log in to website	3.64	0.57	SA	3.41	0.90	A
11.	Ability to log out of website	3.48	0.82	A	3.46	0.86	A
12.	Ability to search for networks	3.57	0.79	SA	3.74	0.44	SA
13.	Ability to download & upload images	3.10	0.98	A	3.45	0.98	A
	Cluster Mean	**3.53**			**3.51**		

Key: N_1= Number of employers in public sector; X_1= Mean of employers in public sector; SD_1= Standard deviation of employer in public sector; N_2= Number of employers in private sector; X_2 = Mean of employer in private sector; SD_2= Standard deviation of employer in public sector

Data in Table 2 shows that the mean of the items ranged from 3.10– 3.79 while the cluster mean for the groups were 3.53and 3.51. This means that employers in public and private sectors strongly agreed that technical college graduates require networking competencies for employment in Rivers State. The standard deviations for all items for the two groups were within the same range indicating that the respondents were not wide apart in their views.

Hypothesis 1: Employers of labour in public and private sectors do not differ significantly in their mean perceptions on word-processing competency required of technical college graduates for employment.

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Table 5
Summary of z-test Comparison of the Mean Perception of Employers on Word-Processing Competency Required of Technical College Graduates for Employment.

Employers	N		SD	Df	Standard Error	z-cal	z-crit	decision
Public	42	3.44	0.81	135	0.15	0.80	1.64	Not Significant
Private	95	3.56	0.77					

Table 5 indicates the calculated z-ratio of 0.80 is less than the z-critical ratio of 1.64 showing that employers of labours in public and private sectors do not differ significantly in their mean perceptions on word-processing competencies required of technical college graduates for employment. The null hypothesis therefore, was not rejected.

Hypothesis 2: Employers of labour in public and private sectors do not differ significantly in their mean perceptions on spreadsheet competencies required of technical college graduates for employment.

Table 6
Summary of z-test Comparison of the Mean Perception of Employers on Spreadsheet Competencies Required of Technical College Graduates for Employment.

Employers	N		SD	df	Standard Error	z-cal	z-crit.	Decision
Public	42	3.18	0.76	135	0.148	3.38	1.64	Significant
Private	95	3.67	0.82					

Table 6indicates the calculated z-ratio of 3.38 is greater than the z-critical ratio of 1.64 showing that employers of labours in public and private sectors differ significantly in their mean perceptions on spreadsheet competencies required of technical college graduates for employment. The null hypothesis therefore, is rejected.

Hypothesis 3: Employers of labour in public and private sectors do not differ significantly in their mean perception on computer aided design competencies required of technical college graduates for employment.

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Table 7
Summary of z-test Comparison of the Mean Perception of Employers on Computer Aided Design Competencies Required of Technical College Graduates for Employment.

Employers	N		SD	df	Standard Error	z-cal	z-crit.	decision
Public	42	3.43	0.79	135	0.15	0.86	1.64	No Significant
Private	95	3.56	0.85					

Table 7 indicates the calculated z-ratio of 0.86 is less than the z-critical ratio of 1.64 showing that employers of labours in public and private sectors do not differ significantly in their mean perceptions on computer aided design competencies required of technical college graduates for employment. The null hypothesis is accepted.

Hypothesis 4: Employers of labour in rural and urban areas do not differ significantly in their mean perceptions on networking competencies required of technical college graduates for employment.

Table 8
Summary of z-test Comparison of the Mean Perception of Employers on Networking Competencies Required of Technical College Graduates for Employment.

Employers	N		SD	df	Standard Error	z-cal	z-crit.	Decision
Rural	25	3.47	0.73	135	0.163	0.86	1.64	No Significant
Urban	112	3.61	0.77					

Table 8 indicates the calculated z-ratio of 0.86 is less than the z-critical ratio of 1.64 showing that employers of labours in public and private sectors do not differ significantly in their mean perceptions on networking competencies required of technical college graduates for employment. The null hypothesis therefore, was not rejected.

Discussion
The answers to the research questions as shown in the results in Tables 1 to 4 indicates that employers of labour were of the view that word-processing, spreadsheet, computer aided design and networking competencies are required of

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technical education graduates for employment in Rivers state. The findings is in agreement with Akin (2013) who stated that most employers require job applicants prospective employees to be proficient and competent in computer applications such as word-processing, spreadsheet, computer aided design and networking. The findings is also in line with Justus (2014) who identified lack computer-based competencies such word-processing, spreadsheet, computer aided design and networking competencies as major reason for unemployment among graduates.

Results of hypotheses 1, 3 and 4 showed that there were no significant difference in the mean perceptions of both employers in public and private sectors and those in urban and rural areas on CBC required of technical college graduates. This suggests that employers require prospective employees to possess competencies in word-processing, computer aided design and networking. This is because the application of those competencies promotes high level of job performance in terms of improved product designs, drafting, construction, fabrication, operation, maintenance, trouble-shooting activities, and improved service delivery. This is in agreement with the findings of Olaitan (2013) who discovered that the application of CBC in job execution and operation promotes high level job performance and satisfaction.

The result of the second hypothesis indicated that there was a significant difference in the mean perception of employers on spreadsheet competency required of technical college graduates for employment. This position shows that private employers of labour are of the perception that the spreadsheet competencies is prominently required of technical college graduates for employment than those of public. This is in agreement with Idike (2014) who state that the private employers of labour have a lot jobs that demand the efficient and effective use of spreadsheet environment than those of public sector.

Conclusion

Based on the findings of the study, it was concluded that employers of labour are of the view that Computer-Based Competencies (CBC) is one of the most important skills that enhance the employment of technical college graduates. Therefore, emphasis should be laid on the teaching and learning of computer applications such as, word processing, spreadsheet, graphics, networking among others.The application of CBC in the world of work makes anemployee a pride to the employer, as such an individual is highly priced.

Recommendations

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

1. State governments should employ qualified computer science teachers and teachers with computer knowledge in all technical colleges to enhance effective and efficient teaching and learning of computer study.

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2. State governments and heads of technical colleges should provide and maintain adequate computer facilities in technical colleges to equip the students with relevant competencies for work performance.
3. Technical College teachers should endeavour to be computer literate.
4. State ministries of education and other National Board for Technical Education (NBTE) should conduct seminars, conferences and workshops for teachers and students to help boost their knowledge of computer usage.

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