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**21ST CENTURY SKILLS AND EMPLOYABILITY OF TECHNICAL AND
VOCATIONAL EDUCATION STUDENTS IN FEDERAL COLLEGE OF
EDUCATION (TECHNICAL), AKOKA, LAGOS**

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Abstract

The study found out the influence of 21st Century skills on employability of Technical and Vocational Education (TVE) students. Among others, one of the purposes of Technical and Vocational Education in Nigeria is to train and improve necessary skills leading to production of craftsmen, technical and other skilled personnel who will be enterprising and self-reliant. Hence, investigating how 21st century skills has helped the employability of TVE students is important. Survey research design was adopted for the study. Multistage procedure was adopted to sample 136 respondents. Self-developed questionnaire titled "Questionnaire on 21st Century and Employability of Technical and Vocational Education Students" which yielded reliability coefficient of $r = 0.78$ was used for data collection. Findings revealed that innovation skill has the highest acquisition level among Technical and Vocational Education Students (mean = 3.44) while marketing skill has the lowest acquisition level (mean = 2.91). Skills acquired during training has influence on employability of Technical and Vocational students to a large extent (weighted mean = 3.17). Innovation skill ($\beta = 0.006, P < 0.05$); human relation skill ($\beta = 0.437, P < 0.05$); time management skill ($\beta = 0.160, P < 0.05$); professional ($\beta = 0.370, P < 0.05$); and ICT skills ($\beta = 0.159, P < 0.05$) have significant influence on employability of Technical and Vocational Education students. It was concluded that coping strategy skill, financial management skill and marketing skill were not significant

to employability of Technical and Vocational Education students. The study recommended the need to incorporate coping strategy, financial management and marketing skills in the curriculum of Technical and Vocational Education. Also, it was recommended that students should in addition to what might have been acquired in the four walls of classroom build up a very good interpersonal relationship with people around them.

Keywords: Employability, Technical and Vocational Education, 21st Century Skills

Introduction

Although employability has become a familiar term in higher education context, there seems to be no particular way of relating its meaning. Nonetheless, the concept is viewed as the ability of an individual to gain initial employment, maintain employment and obtain new employment if required. Graduate employability on the other hand is defined as a set of achievements-skills, understandings, and personal attributes that make graduates more likely to gain employment and be successful in their chosen occupations (Yorke, 2004). Similarly, Ananga (2015) researched on university education and job crises in Africa and described employability as being in control of relevant knowledge, skills and other attributes for winning and retaining a gainful employment.

In practice, University of Exeter Centre for Teaching and Learning (2002) stated in Ogunniran (2020, p.543), employability is about having the knowledge and understanding of the subject matter; developing skills, both subject specific and personal as well as key skills; being able to articulate learning with work experience. These can be achieved through internship; personal development- reflective thinking that can help to develop a person. In other words, employability means different skills obtained, capabilities and personal potentials that can make one stand out from the crowd. The potential of having the skills that would make individuals get a job is a necessity for every graduate seeking employment in any field.

Skills needed by students which can aid their employment in labour market is referred to as the 21st century skills. Olasunkanmi and Ayeni (2020) stated that apart from paper qualifications possessed by graduates, there are many other skills employers expect the new

graduates to possess that probably may not be taught in the four walls of classroom, these are referred to 21st century skills. These skills are specific skills required to function optimally and effectively within an organisation. The ability to demonstrate these skills after graduation is very essential because, demonstration of these skills constitute the selling point of such graduates. Nigerian Graduate Report (2018) showed that in 2016, 36.26% of recent graduates were unemployed and a large number of 53.8% were underemployed or not appropriately placed in different work places. Far more than academic qualifications, there are many qualities employers of labour are looking for in any graduate that can help their organisation to achieve the stated goals and also help in profit maximization. With regards to this, Pitan (2010) pointed out that in testing the suitability of many graduates today, it appears that most of them are not suitable for job as a result of lack of necessary skills to help them thrive in the career path.

Acquisition of 21st century skills play a vital role in determining employability of graduates. It is very imperative for students to equip themselves with 21st century skills so as to prepare them for the world of work (Stehle and Peters-Burton, 2019). The authors recognized non-cognitive skills to include study skills, time management and self-management to assist students in optimizing their ability to gain content knowledge and use their academic skills to solve problems. Students who possess these skills have high-quality academic behaviours, characterized by a pursuit of academic goals despite any setbacks (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, Beechum, 2012). No wonder, the National Research council (2013) stated that, graduates who possess 21st century skills are sought out by employers while Bybee (2013) also express the need to ensure that the students who graduate from schools are adept in 21st Century skills so that they can be successful in this new workforce landscape.

According to Stauffer (2021), 21st century skills are abilities that today's students need to succeed in their careers during the information age. The skills include critical thinking, creativity, collaboration, communication, information literacy, media literacy, technology literacy among others. These skills are intended to help students keep up with lightning-pace of today's modern markets and they are essential in this age of technology. All academic institutions are expected to perform the task of developing their graduates to

possess the employable skills in such a way that when graduates are employed, they will be able to showcase the skills already acquired while in school.

The 21st century skills this study investigated are: Innovation, marketing, interpersonal, financial management, time management, professional, coping strategy (adaptability) and ICT skills. These skills will be investigated on employability of Technical and Vocational Education students in Federal College of Education (Technical), Akoka, Lagos. The institution was established in 1967 with the purpose of producing knowledgeable, skilled, self-reliant, technical and vocational graduates, grounded in ICT, research and teaching that will impact positively on the technological and socio-economic development of the economy. Also, the institution was aimed at training graduates worthy in character and learning that can run personal business on their own through the acquired skills and that should be able to stand out among their peers.

Innovation skills are the knowledge and abilities used for creation that allows an individual to use the existing knowledge to discover original ideas that can benefit such an individual and the team. Innovation is a relevant skill that is needed for excellence in a globalized world. This sets individual employees apart from their colleagues. Organization for Economic Cooperation and Development (OECD, 2016) identified four types of innovation as:

- a) **Product Innovation:** It is the application of an idea or service that has undergone substantial development, the feasibility of which that can be related to functionality or other techniques that makes new idea or service possible;
- b) **Process Innovation:** This refers to the development of new methods to achieve a given production;
- c) **Organisational Innovation:** This refers to a new means and ways of administering organisation in order to achieve the stated goals and objective maximally;
- d) **Marketing Innovation:** This is a situation whereby new methods are used to obtain the development of product and their associated packaging, forms of cost and promotional publicity.

From the above, product, process, organisational and marketing innovation are important elements of innovation skill that can enhance employability among technical vocational education graduates.

Among the 21st century skills considered in this study is marketing skill. Marketing skill is an essential skill in any establishment, it is the ability to promote a product and get a customer convinced to buy it. This skill is very necessary among the 21st century skills, the application of marketing skill especially in an online manner promotes and make the world a small place. According to Cahit (2019), promoting any product, service, or idea encompasses different marketing skills and personal qualities which include the following:

- a. The process begins with analyzing the audience and defining their perceptions of the product, service or idea;
- b. Identifying those features or aspects of what to be marketed that will be most appealing to the audience is essential;
- c. Verbal, writing and public speaking skills, when refined, will help to convey the pitch clearly, and creativity will help to capture the attention of the audience.

Human relation skill otherwise known as interpersonal skill is referred to as the ability to relate and interact with subordinates, peers, superiors, and customers or clients. Human relation skill is the skill required to effectively communicate, interact, and work with individuals and groups to achieve the desired goals. This set of skills includes the ability to understand human behaviour, to communicate effectively with others, and to motivate individuals to accomplish their objectives. Effective human relation skills can help facilitate and grow business relationships. These skills help create an environment that primes employees to thrive while enjoying their jobs and can increase a business's overall employee retention rate. Human relation skills are mostly soft skills that help build and maintain healthy and balanced relationships at work. Employees' interpersonal relationships influence a company's success, and human relation skills help manage and guide these relationships. Effectively employed human relations skills can improve employee retention rates, productivity and creativity (Cahit, 2019)

Skill of financial management is another skill among the 21st century skills considered, Paramasivan and Subramanian (2020) defined

financial management skill as a soft skill that deals with procurement of funds and their effective utilization in the business world. It is also an application of general managerial principles to the area of financial decision-making. It is mainly concerned with the effective funds management in the business. Generally, financial management means planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise. As important as the skill of financial management to prospective employees is, it seems many of the students of vocational and technical education did not possess the skill.

Finally, another important skill expected students of vocational and technical education to possess is time management skill. Time management is the ability of using one's time productively and efficiently. It is the art of having time to do everything that needed to be done without feeling stressed about it. Time management skills include a variety of skills that helps to manage time very well. Cahit (2019) stated that time management is the process of planning and exercising conscious control of time spent on specific activities, especially to increase effectiveness, efficiency and productivity. It involves the balancing of various demands upon a person relating to work, social life, family hobbies personal interests, and commitments with the finite nature of time.

Statement of the Problem

Employability skills are transferable skills needed by individuals that can make them employable. It can as well be seen as set of skills employers want from a potential employee. Employability skills are skills every potential employee or anyone who intend to establish personal business must possess. Having said this, School of Vocational Education and School of Technical Education in Federal Colleges of Education are established to prepare students to train and improve necessary skills leading to production of craftsmen, technical and other skilled personnel who will be enterprising and self-reliant. But it seems this purpose is not being achieved, because there were complaints that many of the graduates of, School of Vocational Education and School of Technical Education in Federal Colleges of Education did not possess these employability skills that can make them employable or that can

make them establish on their own to be self-reliant. It is against this that the study investigated the influence 21st Century skills has on the employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos.

Purpose of the Study

The study investigated the influence of 21st Century skills on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos. Specifically, the study:

- i. investigated the employability skills acquired by Technical and Vocational Education students in FCE(T), Akoka;
- ii. find out the extent to which the skills acquired during training influence the employability of Technical and Vocational Education students in FCE(T);
- iii. determine the joint influence of 21st Century skills on employability of Technical and Vocational Education students in FCE(T); and
- iv. determine the relative influence of 21st Century skills on employability of Technical and Vocational Education students in FCE(T), Akoka Lagos.

Research Questions

1. What are the employability skills acquired by Technical and Vocational Education students in FCE(T) Akoka, Lagos State?
2. To what extent will the skills acquired during training influence the employability of Technical and Vocational students in FCE(T), Akoka, Lagos State?

Hypotheses

- H₀1: 21st Century skills will not significantly have joint influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State.
- H₀2: 21st Century skills will not significantly have relative influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State.

Research Methodology

Research Design

Survey research design of “*ex-post facto*” type was adopted for the study.

Population

The population of the study comprised of 194 NCE 300 level students in Schools of Technical and Vocational Education in Federal College of Education (T), Akoka, Lagos State. Table 1 presents the details of the population of the study.

Table 1: List of NCE 3 Students in Schools of Technical and Vocational Education

School of Vocational Education	No of 300 Level Students
Department of Home Economics	24
Department of Agricultural Education	33
Department of Fine Art Education	30
School of Technical Education	
Department of Woodwork Technology	19
Department of Metalwork	14
Department of Building	20
Department of Electrical Electronics	30
Department of Automobile Technology	24
TOTAL	194

Sample Size and Sampling Technique

Multi stage sampling technique was adopted for the study. At the first stage, total enumeration method was used to sample all the departments in the two schools under study (Vocational and Technical Education). This is because the departments in the two schools are not many. At the second stage, simple random sampling technique was used to sample 70% of 300 level students in all the departments across the Schools of Vocational and Technical Education. Table 2 presented the details of the sample size for the study.

Table 2: Sample Size for the Study

School of Vocational Education	70% of 300 Level Students
Department of Home Economics	17
Department of Agricultural Education	23
Department of Fine Art Education	21
School of Technical Education	
Department of Woodwork Technology	13
Department of Metalwork	10
Department of Building	14
Department of Electrical Electronics	21
Department of Automobile Technology	17
TOTAL	136

Instrument for Data Collection

The instrument for data collection was is a structured self-designed questionnaire titled "Questionnaire on 21st Century Skills and Employability of Technical Education Students" (Q21stCSETES). The questionnaire is of two sections. Section A elicited information about bio data information of the respondents while section B focused on the structured items on the variables of concern in the study.

Reliability and Validity of Instrument

Test-retest method was adopted to carry out the reliability study. This was done by administering the questionnaire within an interval of 2 weeks to 10 students in the Department of Accounting Education, School of Business Education which was not part of the sampled schools. The retrieved copies of questionnaire were subjected to reliability analysis, the result of the reliability test given as Cronbach alpha coefficient value $r = 0.78$ shows that the instrument is reliable. The instrument was subjected to face and content validity by the researcher and research experts in the field of educational measurement and evaluation. Corrections and suggestions made in the draft were incorporated into the final draft before administration.

Method of Data Collection

The instruments were administered personally by the researchers with the help of two (2) research assistants who were trained on the administration of the instruments.

Method of Data Analysis

Data collected were analysed using frequency count distribution and percentage of mean score to answer the research questions while multiple regression analysis was used to test the hypotheses formulated at 0.05 level of significance.

Results

Answer to Research Questions

RQ 1: What are the employability skills acquired by Technical and Vocational Education students in FCE(T) Akoka, Lagos State?

Table 3: Employability Skills Acquired by Technical and Vocational Education Students in FCE(T) Akoka

Employability Skills	Very Highly Acquired	Highly Acquired	Acquired	Not Acquired	Mean	Std. Dev
Innovation Skill	60 44.1%	76 55.9%	– 0.0%	– 0.0%	3.44	0.498
Marketing Skill	28 20.6%	68 50.0%	40 29.4%	– 0.0%	2.91	0.704
Human Relation Skill	64 47.1%	48 35.3%	20 14.7%	4 2.9%	3.26	0.819
Financial Management Skill	68 50.0%	40 29.4%	28 20.6%	– 0.0%	3.29	0.790
Time Management Skill	36 26.5%	84 61.7%	16 11.8%	– 0.0%	3.15	0.603
Coping Strategy Skill	68 50.0%	52 38.2%	16 11.8%	– 0.0%	3.38	0.689
Professional Skill	60 44.1%	52 38.2%	24 17.7%	– 0.0%	3.26	0.743
ICT Skill	68 50.0%	32 23.5%	16 11.8%	20 14.7%	3.09	0.431

N = 136
Weighted Mean = 3.22

Note: Mean responses ranges from 0 – 1.4 = Not Acquired;

1.5 – 2.4 = Acquired; 2.5 – 3.4 = Highly Acquired;

3.5 – 4.4 = Very Highly Acquired

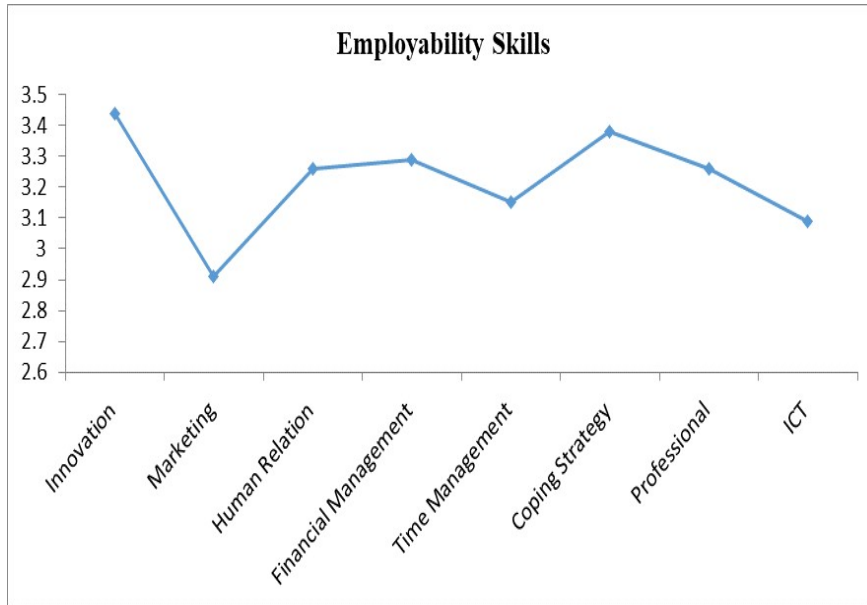


Figure 1: Graphical Representation of Acquisition Level of Employability Skills Among Technical and Vocational Education students in FCE(T) Akoka

Answer to research question 1 on employability skills acquired by Technical and Vocational Education students in FCE(T) Akoka, Lagos State is presented in table 3. The table revealed the level of 21st century skills of Technical and Vocational Education students. The following emerged as the response of the respondents: Innovation Skill (mean = 3.44); Marketing Skill (mean = 2.91); Human Relation Skill (mean = 3.26); Financial Management Skill (mean = 3.29); Time Management Skill (mean = 3.15); Coping Strategy Skill (mean = 3.38); Professional Skill (mean = 3.26); ICT Skill (mean = 3.09). The weighted mean of the table was given as 3.22 which indicated that Technical and Vocational Education students in FCE(T) Akoka, Lagos State highly acquired 21st century skills that can facilitate their employability and job performance at work places.

Also, figure 1 presents acquisition level of employability skills among Technical and Vocational Education students in FCE(T) Akoka. It revealed that innovation skill has the highest acquisition level among the skills under consideration in the study. This is followed by coping

strategy skill, that is, ability to cope with work environment, followed by financial management skill, then human relation and professional skills has the same level of acquisition. This is followed by time management skill and then ICT skill. The graph revealed that marketing skill has the lowest acquisition level among the 21st century skills investigated in the study.

RQ 2: To what extent will the skills acquired during training influence the employability of Technical and Vocational students in FCE(T), Akoka, Lagos State?

Table 4: Extent to Which Skills Acquired During Training Influences Employability of Technical and Vocational Students

Items	Very Large Extent	Large Extent	Low Extent	Very Low Extent	Mean	Std. Dev
Skills acquired during my training can help me get my desired job.	64 47.1%	64 47.1%	8 5.8%	– 0.0%	3.41	0.602
Skills I acquired cannot guarantee me of getting job.	24 17.6%	24 17.6%	36 26.5%	52 38.3%	2.15	0.729
I am trained very well in my field of study to fit in for the employment after schooling.	92 67.6%	24 17.6%	16 11.8%	4 2.9%	3.50	0.816
Being employed is not by skills acquired during training, but based on other external factors.	68 50.0%	48 35.3%	20 14.7%	– 0.0%	3.35	0.726
With the wealth of skills acquired during training, I am fit to establish my personal business	76 55.9%	48 35.3%	8 5.9%	4 2.9%	3.44	0.738
N = 136						
Weighted Mean = 3.17						

Note: Mean responses ranged from
 0 – 1.4 = Very Low Extent;
 1.5 – 2.4 = Low Extent;
 2.5 – 3.4 = Large Extent;
 3.5 – 4.4 = Very Large Extent

The answer to research question 2 on the extent to which skills acquired during training will influence employability of Technical and

Vocational students in FCE(T), Akoka, Lagos State was presented in table 4. The following emerged as the findings: Skills acquired during my training can help me get my desired job (mean = 3.41); Skills I acquired cannot guarantee me of getting job (mean = 2.15); I am trained very well in my field of study to fit in for the employment after schooling (mean = 3.50); Being employed is not by skills acquired during training, but based on other external factors (mean = 3.35); With the wealth of skills acquired during training, I am fit to establish my personal business (mean = 3.44).

The weighted mean of the table was given as 3.17, this implies that the skills acquired during training will influence employability of Technical and Vocational students in FCE(T), Akoka in a large extent.

Hypotheses Testing

H₀₁: 21st Century skills will not significantly have joint influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State.

Table 5: Joint Influence of 21st Century Skills on Employability of Technical and Vocational Education Students

Model	Sum of Squares	Df	Mean Square	F	Sig	Rmks
Regression	248.525	8	31.066			
Residual	429.593	127	3.383	9.184	0.000	Sig.
Total	678.118	135				

R = 0.605
 R Square = 0.366
 Adjusted R Square = 0.327
 Std. Error of the Estimate = 1.839

Table 5 presents analysis of hypothesis one on joint influence of 21st Century skills (Innovation, Marketing, Human Relation, Financial Management, Time Management, Coping Strategy, Professional and ICT Skills) on employability of Technical and Vocational Education students in FCE(T), Akoka. The result shows that there is significant joint influence of 21st Century skills on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State (R = 0.605;

$R^2 = 0.366$; $F = 9.184$). This shows that all the 21st century skills (Innovation, Marketing, Human Relation, Financial Management, Time Management, Coping Strategy, Professional and ICT Skills) investigated in the study accounted for 32.7% of the variance in employability of Technical and Vocational Education students in FCE(T), Akoka. The remaining 67.3% might be captured by other exogenous variables that were not included in the study. Based on this, the joint influence is shown to be significant ($F_{(8, 127)} = 9.184$; $P < 0.05$), therefore the hypothesis is not accepted. This implies that 21st Century skills significantly have joint influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State.

H₀₂: 21st Century skills will not significantly have relative influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State.

Table 6: Relative Influence of 21st Century Skills on Employability of Technical and Vocational Education Students in FCE(T), Akoka

Dependent Variable	Independent Variables	Unstandardized Coefficient		Stand. Coefficient	T	Sig.
		B	Std. Error			
	(Constant)	5.917	1.904		3.108	0.000
	Innovation Skill	0.163	0.351	0.157	0.464	0.044
	Marketing Skill	0.136	0.259	0.043	0.525	0.600
Employability of Technical and Vocational Education Students	Human Relation Skill	1.195	0.210	0.437	5.682	0.000
	Financial Management Skill	0.281	0.226	0.099	1.240	0.217
	Time Management Skill	0.594	0.294	0.160	2.020	0.046
	Coping Strategy Skill	0.381	0.248	0.117	1.539	0.126
	Professional Skill	1.116	0.225	0.370	4.957	0.000
	ICT Skill	0.437	0.159	0.214	2.749	0.007

Table 6 revealed relative influence of 21st century skills on employability of Technical and Vocational Education students in FCE(T), Akoka which is expressed as beta weights: innovation skill ($\beta = 0.006$, P

< 0.05), marketing skill ($\beta = 0.043$, $P > 0.05$), human relation skill ($\beta = 0.437$, $P < 0.05$), financial management skill ($\beta = 0.099$, $P > 0.05$), time management skill ($\beta = 0.160$, $P < 0.05$), coping strategy skill ($\beta = 0.117$, $P > 0.05$), professional skill ($\beta = 0.370$, $P < 0.05$), and ICT skill ($\beta = 0.159$, $P < 0.05$). Result from the table shows that five of the 21st century skills in the model (innovation, human relation, time management, professional and ICT skills) have significant influence on employability of Technical and Vocational Education students in FCE(T) Akoka, while marketing skill, financial management skill and coping strategy skill were found to have no significant influence on employability of Technical and Vocational Education students in FCE(T) Akoka.

Also, the table revealed that out of the 21st century skills under investigation, human relation skill has the highest influence on employability of Technical and Vocational Education students in FCE(T) Akoka, this was followed by professional skill, by ICT skill, time management skill, innovation skill, coping strategy skill and financial management skill. The table revealed that marketing skill has the lowest influence on employability of Technical and Vocational Education students in FCE(T) Akoka

Conclusion

The study investigated 21st century skills and employability of Technical and Vocational Education students in Federal College of Education (Technical), Akoka, Lagos. It was revealed from the study that innovation was highly taught and acquired among students of Technical and Vocational Education students in Federal College of Education (Technical), Akoka and marketing skill has the lowest acquisition level among the students.

Also, it was revealed that skills acquired during training among students influenced employability of Technical and Vocational students in FCE(T), Akoka to a large extent.

All the 21st century skills under instigation (Innovation, Marketing, Human Relation, Financial Management, Time Management, Coping Strategy, Professional and ICT Skills) have joint influence on employability of Technical and Vocational Education students in FCE(T), Akoka, Lagos State. Finally, it was found out that while coping strategy skill, financial management skill and marketing skill were not significant to employability of Technical and Vocational

Education students in FCE(T) Akoka, human relation skill, professional skill, ICT skill, time management skill and innovation skill were highly significant.

Recommendations

The following recommendations were made based on the outcome of the study:

National Commission for Colleges of Education (NCCE) should find a means of including and incorporating marketing skill and coping strategy skill in the curriculum of Technical and Vocational Education. Now that everybody is encouraged to create job through entrepreneurial scheme at all levels of the educational system, because it is very important to teach marketing skill. This will help students to discover different ways of getting their product sold. Also, coping strategy will assist the students to adjust easily and cope with strange conditions they might find themselves in future if properly taught.

Human relations has the highest level of influence on employability of students and it has the fourth highest acquisition level among the skills investigated. This shows that efforts to teach and impact the skill on students by lecturers is very important.

It was also recommended that students, in addition to whatever they might have acquired in the four walls of the classroom should build up interpersonal relationship with people around them. This will in a long way to assist them in securing job and if on personal establishments, built up more patronage.

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