Full Length Research Paper

Instructional variables and students’ acquisition of employable skills in vocational education in Nigerian technical colleges

Udofia, A. E, Ekpo, A. B, Nsa, E. O. and Akpan E. O.
Department of Vocational Education University of Uyo, Uyo-Nigeria

Accepted 16 July 2012

This paper focuses on teacher quality, teaching methods, and access to training materials on students’ acquisition of employable skills in vocational technical subjects, for self employment in Akwa Ibom State. Three questions and three hypotheses were formulated and tested in the study. The population of the study comprised senior technical II students in the six technical colleges in the state. The population size was 240. A random sampling technique was used to obtain a sample size of 120 students for the study. A 28 - item structured questionnaire titled, Students’ Acquisition of Employable Skills Questionnaire (SAESQ) with a four-point rating response options were used for data collection. Mean, Pearson Product Moment Correlation (PPMC) and Regression analysis were used for data analysis. The results indicated that there was significant relationship between teacher quality and students’ acquisition of employable skills. The findings also revealed that there was significant relationship between teaching methods and students’ skill acquisition. This paper therefore calls for the provision of modern workshop equipment and employment of qualified and experienced teachers for effective teaching/training of students in order to achieve the objectives of vocational and technical education in Akwa Ibom State.

Keywords: Teaching methods, acquisition, vocational education

INTRODUCTION

The ultimate aim of Vocational Technical Education (VTE) training is for the acquisition of knowledge, attitude and marketable skills for sustainable development. The training of Vocational Technical Education students is based on the production of skillful individuals who are proficient in production of goods and services that are not only relevant to themselves but to the society. The acquisition of a life-long or employable skills calls for effective and efficient teaching methods and the utilization of improved and standard instructional facilities, equipment, machines, tools and infrastructure, to ensure the production of desired quality of Vocational Technical graduates with enterprising skills. Udoutin (2001) asserted that tools, equipment and technical facilities utilized in laboratories and technical workshops constitute the learning environment for skill acquisition. The utilization of instructional materials and other facilities as well as the teacher quality play important role in the acquisition of employable skills by students.

The imparting of skills to students/learners requires tools, equipment, machines, workshop and effective utilization of these facilities. In learning employable skills, equipped workshops are required and competent/experienced teachers to train the students to acquire skills. According to Adewoyin (1991) human behaviour in the learning of skills are connected to theories associated with stimuli, reinforcement’s response. These theories are very relevant to learning and conditioning behaviour required in skill and habit formation in Vocational Education (VTE).

The acquisition of entrepreneurial skills for self employment is a major factor in the design of Vocational Technical Education Programme (World Bank, 2000) because high quality skills requires appropriate training.

Corresponding Author E-mail: jaopara@yahoo.com
equipment and tools, adequate supply of training materials and practice by learner. Other requirements include training manuals and qualified teachers with experiences. However, such categories of workers are also in high demand in the labour market, but could be suitably motivated for part time instruction in technical and vocational colleges (Johnson and Adams, 2004).

Industries are demanding for highly skilled labour in view of increasing sophisticated technology. To meet up with these challenges, the students must be trained and developed to acquire the new and improved technical skills and knowledge to meet the demand of modern industries. For this reason, institutions require well equipped workshops to produce the right caliber of people, skilled enough and are self reliant. A teacher of vocational and technical subject must not only teach, but must use methods that will enhance students’ acquisition and sustenance of knowledge, skills and self-concept formation as well as interest. Olaitan, Nwachukwu, Igbo, Onyemachi and Ekong, (1999), Ogwo and Oranu (2006), recommended field activity-based instructional methods for instructional delivery. Also project method was recommended by Nsa (2002) as a teaching method which helps students develop originality of work in them. Akpan (1998) indicated that there was significant correlation between vocational education and employability and that vocational education has a significant influence on self-reliance as a result of training. This implies that vocational technical education is capable of providing trainees with functional and desirable competencies or professional skills preferred by industries and employers of labour. Olaitan, Nwachukwu, Igbo, Onyemachi and Ekong (1999) pointed out that vocational technical education is education for work. The emphasis in vocational education is on skill acquisition as specified in Nigeria’s Educational reforms which intentions are to ensure value re-orientation, self-reliance, poverty eradication, job creation and wealth generation (Obioma, 2007).

The emphasis on skill acquisition is due to the high rate of unemployment among graduates, high rate of crimes due to untrained youths in advancing technology and challenging economy. Vocational technical education is knowledge, skill and technology driven. It empowers students with employable skills and job creation potentials leading to poverty reduction. The acquisition of employable skills empowers the students with competence to practice, create, develop and establish agricultural farms and business ventures (Imandojemu, 2001 and Ukut & Udofia, 2001). The skill acquisition by students can only be achieved where the training institutions are adequately funded, equipped with adequate facilities and have competent and experienced teachers that adopt effective and efficient instructional methods. This would facilitate and improve students’ skills acquisition as asserted by Bassey and Inyang (2001) who observed that there was relationship between instructional materials and students’ skill development. The results of Bassey and Inyang’s study on skill development efforts of male and female students in business studies, showed that boys tend to have higher level skill development and performance than girls in technical education related subjects.

Statement of the Problem

Vocational education emphasizes skill acquisition for employability. In this regards, the major factor in the design of Technical Education programs comprises the acquisition of entrepreneurial skills for self employment (World Bank, 2000). This calls for the necessity of acquiring high quality skills through appropriate training with adequate facilities and technically enriched environment.

In learning employability skills, equipped workshops, competent and experienced technical teachers are needed complements to train the students for Mastery of job requirements and sequence to tasks operations. Despite this signal, such categories of competent technical personnel and teachers that are in high demand in the industrial sector are not easily found in the school settings. Johnson and Adams (2004) contended that the services of this level of technical experts could be obtained by suitably motivating them for part-time instructions in technical colleges.

In recent times, however, industries are equally demanding high skilled labour in view of increasing and emerging technological practices. This has further created vacuum in technical colleges for the proper training of students. In addition, this development has equally diminished the chances of students being employed in emerging industries as well as hindering the acquisition of entrepreneurial skills for futuristic needs.

In order to meet these challenges, the students must be trained and developed to acquire new but improved technical skills and knowledge. The teaching and learning of technical subjects which should have been a dynamic activity-base is not practically oriented through proper utilization of basic vocational/technical facilities.

In most technical colleges, courses are taught theoretically without the use of modern machines, equipment, tools and other instructional inputs. This makes it difficult for the students to develop the right habit for carrying out a particular job. Nwachuku (2006) noted that vocational and technical education must establish appropriate work habits in order to enable students to be productive on their chosen field. The inability of technical teachers to use adequate instructional techniques does not enhance students’ acquisition of skills and development of self-concept as well as interest, (Ogwo and Oranu, 2006). Nsa (2002) equally had pointed out
that the lack of using project method alongside other strategies as teaching methods does not encourage or help students to develop originality of work. The lack of imparting practical skills to students portends that:

(i) The teachers are not master of their trade areas and are unable to improve/adapt new knowledge and technologies
(ii) lack of equipment/workshops
(iii) The students are ill-prepared to meet future employment challenges.

This above negates the fact that the Technical/Vocational Education which ought to have empowered the students with competence to excel, create, develop workshops, farms and business ventures have rather created unemployment and poverty, Ukut & Udofia, (2001), Imandojemu (2001). It is against this background that this study was aimed at determining the correlate of teacher quality, teaching methods, workshop equipment, training materials and students’ acquisition of skills in vocational technical subjects, so as to recommend the way forward to ameliorate the problems posed.

Technical equipment, tools, machines and facilities in workshop in schools play important role in the development of students’ knowledge, skills and attitudes required for productive and happy working life. Udoutin (2001) remarked that students’ utilization of tools and equipment enhance skills development and that students’ practical skills enable them to earn a living. A well equipped technical workshop is required to have suitable tools, equipment and machines for the production of skilled personnel required by employers of labour, industries and other work places as well as sophisticated technology in this technological era. The teaching and learning of technical subjects should be a dynamic activity-based and practically oriented through proper utilization of basic technical facilities. In most cases vocational and technical courses are taught theoretically without the use of machines, equipment, tools and other instructional materials.

One of the major problems facing technical education is that most of the technical teachers are incompetent and the training equipment and tools provided in some schools apart from being grossly inadequate are absolute and worn out (Aina, 1991). The wrong approach to technical subjects in technical colleges rather than impart skills to students, produce students who are ill-equipped with practical skills, inadequate creative power and not self-reliant or are unable to employ them. This situation rather than reduce unemployment and poverty increases the rate of unemployment in Akwa Ibom State due to lack of saleable skills. It is against this background that this study was aimed at determining the correlate of teacher quality, teaching methods, workshop equipment, training materials, and students acquisition of skills in vocational technical subjects, so as to recommend the way forward to ameliorate the problems.

**Purpose of the Study**

The study was purposed to determine the influence of teacher quality, teaching methods, workshop equipment and training materials on students’ acquisition of employable skills in Vocational Technical subjects in Technical Colleges in Akwa Ibom State. Specifically the study sought to:

1. Determine the influence of teacher/students relationship on students’ acquisition of employable skills in electrical installation works.
2. Determine the relationship between teaching methods and students’ acquisition of employable skills in rabbitry and poultry production.
3. Determine the relationship between training materials and students’ acquisition of employable skills in electrical installation works.

**Research Design**

The study adopted a correlational survey design. The design was used, since the researchers sought the opinion of large number of people about the event.

**Area of Study**

The study was conducted in six Technical Colleges in Akwa Ibom State. Akwa Ibom State is in the South-South Zone of Nigeria. The state is blessed with God given natural resources and has rich cultural heritage. These features attract investors and tourist to the state. The occupation of the people include farming, fishing, trading and majority of the people are civil servants, but if properly trained in vocational skills, they could be readily employed in the industries in the state and else where.

**Population of the Study**

The population of the study comprised all senior technical two students in Science and Technical subjects. The population size was 240.

**Sample and Sampling Technique**

A simple random sampling technique was employed. The sample size of 120 was drawn from the population to participate in the study.

**Instrument**

A 28 item structured questionnaire title students...
Table 1. Mean rating for teaching/students’ relationship on students’ acquisition of employable skills. N = 120

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items on Teacher/Students Factor</th>
<th>A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Skills to design learning experiences that inspire/interest students</td>
<td>2.85 *</td>
<td>0.38</td>
</tr>
<tr>
<td>2.</td>
<td>A lot of enthusiasm in both cognitive and psycho-productive development of students</td>
<td>2.88 *</td>
<td>0.39</td>
</tr>
<tr>
<td>3.</td>
<td>A caring attitude towards students</td>
<td>2.73 *</td>
<td>0.36</td>
</tr>
<tr>
<td>4.</td>
<td>A thorough understanding of the students problems</td>
<td>2.83 *</td>
<td>0.39</td>
</tr>
<tr>
<td>5.</td>
<td>A great deal of involvement of students in lesson planning</td>
<td>2.65 *</td>
<td>0.27</td>
</tr>
<tr>
<td>6.</td>
<td>Takes students aptitude into consideration in instructional delivery</td>
<td>2.74 *</td>
<td>0.38</td>
</tr>
</tbody>
</table>

Note * the cut off point for acceptance of mean rating is 2.50 and above.

Table 2. Mean rating on students’ acquisition of employable skills. N = 120

<table>
<thead>
<tr>
<th>S/N</th>
<th>Items on Students’ Skills Acquisition</th>
<th>A</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>The teaching methods used encourage skill acquisition in rabbitary</td>
<td>2.62</td>
<td>0.80</td>
</tr>
<tr>
<td>8.</td>
<td>Egg candling facilitate skill acquisition</td>
<td>1.68</td>
<td>0.60</td>
</tr>
<tr>
<td>9.</td>
<td>Availability of materials for learning facilitates acquisition of skills in:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Conduit wiring</td>
<td>2.61</td>
<td>0.38</td>
</tr>
<tr>
<td>11.</td>
<td>Cable jointing</td>
<td>2.50</td>
<td>0.44</td>
</tr>
<tr>
<td>12.</td>
<td>Diagnosis of diseased birds</td>
<td>2.55</td>
<td>0.37</td>
</tr>
</tbody>
</table>

acquisition of employable skills questionnaire (SAESQ) was constructed by the researchers. A four-point scale response option was used for data collection. A benchmark or cut off point of 2.50 and above was fixed for the acceptance in the mean rating for each response.

Validation of the Instrument

The instrument was given to three experts in test and measurement and a lecturer in Vocational Education Department, all in the Faculty of Education, University of Uyo for validation. The corrections were incorporated to ensure that it measures the intended attributes.

Reliability of the Instrument

The researchers administered the instrument by face to face contact and the data obtained were split into two (even and odd numbers). The two different sets of data were used to compute for reliability correlation coefficient (r) using Kuder Richardson (KR-21). The Kuder Richardson formula was used to determine to what extent the items measured the same characteristics. This was done by determining individual item score rather than examining part or total scores (as in the split half, method) the reliability index yielded .88.

Data Analysis

The data collected were analyzed on the basis of research questions and hypotheses. Mean was used to answer all the research questions while PPMC and

Regressional analysis were used in testing hypotheses.

Research Question 1

What is the influence of teacher/student relationship on students’ acquisition of employable skills in electrical installation works? The answer to this question is presented in table 1 and 2. The result from Table 1 indicates that all the items met the cut off point of 2.50 and above. This implies that all the items are teacher qualities which could help the teacher for effective instructional delivery for students’ acquisition of employable skills. The result in Table 2 shows that 4 out of 5 items met the cut off point of 2.50 and above mean rating. The result revealed that the accepted teaching methods have relate with students’ acquisition of employable skills.

Research Question 2

What is the influence of teaching methods on students’ acquisition of employable skills in rabbiting and poultry production? The answer to this question is shown in table 3. The result in table 3, shows that all the items had a mean rating of 2.50 and above. This reveals that workshop equipment enhances or facilitates students’ acquisition of skills.

Research Question 3

What is the influence of training materials on students’ acquisition of employable skills? The data for answering
research question 3 is shown in Table 4. The results from Table 4 indicate that five items except one met the cut off point of 2.50 and above. This therefore shows that training materials influence students’ acquisition of skills.

### Hypothesis One

There is no significant relationship between teacher quality and students’ acquisition of employable skills in electrical installation works. The result from Table 5 shows that rcal of 0.93 is greater than rcrit value of 0.195 at df of 118 and .05 level of significance. Null Hypothesis two was rejected, since rcal was higher than rcrit. The result therefore shows that there is significant relationship between teaching methods and students’ acquisition of employable skills.

### Hypothesis Two

There is no significant relationship between training materials on students’ acquisition of employable skills in electrical installation works. The results in Table 6 reveal that the rcal value of 0.99 is greater than rcrit value of 0.195 at df of 118 and 0.05 level of significance. Null Hypothesis 3 was rejected on the basis of the result. The result reveals that there is significant relationship between teacher quality and training materials and that these factors influence students’ acquisition of employable skills in electrical installation works.

### DISCUSSION OF FINDINGS

On the issue of teacher quality on students’ acquisition of
employable skills, Hart and Teeter (2002), National research council (2001) and Reichardt (2001) reported that teachers require professional skills, abilities, competence, years of experience, thorough understanding of the subject matter and effective involvement of the students in the instructional delivery. The finding in Hypothesis one is in line with Chih-Yang et al (2007) who reported that the quality of the teacher is an indicator of students’ acquisition of skills or achievement of Vocational Education.

With respect to the teaching methods on students’ acquisition of employable skills, Ibe (1994) reported that human potentials are developed with the use of practical-oriented method for manipulation of workshop tools, equipment. The finding in null hypothesis 2 is in with Ibe (1994) and in support of the adoption of practical oriented method as well as complementary methods recommended for the teaching of technical related subjects to enhance students’ acquisition of employable skills as prescribed by (Ali, 1988; Ekong, 1999; Nsa, 2002 and Ogwo and Oranu, 2006).

On the instructional materials and students’ acquisition of employable skills, the finding is in support of Udoutin (2001) who reported that the utilization of tools and equipment in teaching/learning enhance students skill development and that students practical skills enable them to earn a living. Instructional materials utilization enhances students understanding, learning effectiveness, influences learner attitude, stimulates learning and increase learners productivity.

### CONCLUSION AND RECOMMENDATIONS

The availability of technical equipment, tools machines and other technical facilities as well as effective utilization of these facilities in teaching/training of students in technical colleges equips them with employable skills. The instructional materials when effectively utilized in instructional delivery concretize the concepts and students skills acquisition.

The findings of the study showed that there were relationships between the teacher quality, teaching methods, workshop equipment, instructional materials and the employable skills acquired by students.

From the findings of the study on teacher quality, teaching methods, workshop equipment, instructional materials and students acquisition of employable skills in electrical installation works in technical colleges the following recommendation were drawn:

1. Modern technical equipment, tools, machines and instructional materials should be made available by the state government to the technical colleges’ workshops to enhance the training of students for the acquisition of employable skills and for self-reliance.
2. All stakeholders in education, industry and Non Government Organizations (NGOs) should jointly fund and train/develop the students for the acquisition of employable skills to meet the demand of industry and the sophisticated technology in this technological era.
3. The teachers should be effectively re-trained by the government for enhanced skill and professional knowledge, competency and professional growth to facilitate increased productivity.
4. Well qualified and experienced teachers should be employed for the teaching/training of students in technical colleges to ensure that the students are adequately trained and motivated to acquire the expected skills for their employability and self reliance.
REFERENCES


World Bank (2000). Repot of labour market for University Graduate, New York: