

Appraisal of Woodwork Practical Skill Acquisition of Nigeria Certificate in Education (NCE) Technical Students in Niger State College of Education, Minna

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Abstract: *The study evaluated the practical skill acquisition of Nigerian Certificate in Education Technical woodwork students in Niger State College of Education (COE), Minna. Specifically, the study determined the adequacy of woodwork tools and equipment, adequacy of time allotted for practical skill acquisition, teaching methods and instructional materials employed in teaching woodwork practical skills in the workshop. Three research questions were postulated to guide the study. The study was a descriptive survey research which adopted the use of a researcher-designed structured questionnaire for data collection. The questionnaire was content validated by two lecturers in the department of industrial and technology education Federal University of Technology Minna. The reliability of the instruments was obtained using Cronbach alpha analysis that yielded co-efficient of 0.75 which was regarded as reliable according to Louis, Lawrence and Keith (2007) the Population of the study comprises of five lecturers and 65(300level) students in the woodwork technology department, school of technical education, Niger State College of Education Minna. The whole population were used hence there was no sampling because the population was manageable. 70 copies of the questionnaire were distributed with 96% return rate. Mean and Standard Deviation were used to answer the research questions and a radar graph was used to determine the similarity in the opinion of the respondents. Findings from the study revealed that practical lessons are not adequate, workshop attendants do not spend adequate time guiding the students during the practical skill acquisition lessons, the school workshop have the required tools but these tools are not sufficient to go round the students during practical work, among others. Based on the findings, it was recommended that there is need for the National Commission for Colleges of Education (NCCE) to redesign the curriculum to allot more time for practical skill acquisitions in the NCE (Tech) programme, more tools and equipment should be purchased for practical skills acquisition by the Educational Stakeholders and the Institution.*

Keywords: *Appraisal, Skill acquisition, tools and equipment, woodwork.*

Introduction

The Niger State College of education, Minna was established in 1975 as an Advanced Teachers' College in order to meet up with the increasing demand for qualified teachers in Niger province. The college was sited in Minna and was under the full control of the Ministry of Education. However, in 1983, the college was upgraded to the status of College of Education (COE) as a result of the growing challenges and educational need of the state, the 1979 edict was repealed and replaced by the Niger State College of education Law of Nigeria (NSLN) No.3 of 1983 by the defunct civilian government in the second republic the law provided that the institution should be called Niger State College of Education (NSCOE, 2018).

The Objective of the college as stated in the edict establishing the college are to provide basic studies, training and research leading to the award of Nigerian Certificate in Education in woodwork technology, among others and eventual entry into

University Degree programmes. The college also arrange in-service vocational education courses for servicing teachers.

The Academic Board is responsible for planning the academic programs of the institution based on the National Commission for Colleges of Education (NCCE) minimum standard for colleges of education. The minimum standard specified the necessary tools, equipment and the standard of workshop for practical acquisition. One of the programme planned by the academic board to be established is Technical education, which include automobile, building, electrical/electronic, metal work and woodwork technology education.

Technical education is an organized programme of study which is being set out by looking at career options, encourages fundamental educational and life skills, and facilitates the attainment of quality management, educational standards and planning for innovative and continuous skill teaching and

learning. Moreso, Technical education according to Tsado (2008) is a comprehensive training package that leads to the acquisition of practical skills which enable individual to be self-reliant and productive in the society. He went further to say that it prepares youths and adults for other gainful employment or self-employment.

Woodwork Technology is a career in technical education which emphasizes a combination of basic and advanced machine processes for the activity of making items from wood, which includes carpentry, joinery, wood carving, wood turning, furniture construction, upholstery making, and cabinetmaking.

In another development, the importance of practical skill acquisitions of Nigeria Certificate of Education NCE (Tech) cannot be over emphasized. In its reviewed report National Board for Technical Education (NBTE, 2000) though the broad as being replace by National Commission for Colleges of Education (NCCE) defined Technical Education to include the training of artisans, craftsmen, technicians, technical teachers and technologists. These skilled workers are important player in boosting the socioeconomic and industrial growth of Nigeria. The acquisition of these technical skills empowers individuals to be self-reliant which give a boost to the rapid technological advancement of a developing Nation like Nigeria.

The Federal Government of Nigeria (FRN, 2014) stated the objectives in its National policy on Education to include training manpower in the applied Science technology and business particularly at craft, advanced craft and technical levels, providing the technical knowledge and vocational skills necessary for agricultural, commercial and economic development and impacting the necessary skills to individual who shall be self-reliant economically.

Vocational and Technical Education, therefore, has a definite role in creating employment and reducing poverty in Nigeria. It is on this basis Aluwin (2008) stated that, in the face of shrinking public sector jobs, the most beneficial way to access the labour market is self-employment which can only be met through the acquisition of adequate practical skills. Technical education is an absolute way by which youth can be empowered with adequate and qualitative knowledge and skills in order to make them job creators rather than job seekers (Kareem & Okwori, 2016). Uzoka (2010) also asserted that nations that looks forward to industrialization, will never neglect the acquisition of relevant technical

skills by her citizens.

In training individuals for repository manpower needed for a developing economy, therefore, there is need to appraise the practical skills acquisition of NCE (Tech) which is a vital component in the curriculum of Technical Education.

Statement of Problem

The training which leads to the acquisition of basic technology skills that empower individuals to be self-reliant is acknowledged to be technical Education, the acclaim easy way to the technological break-through is to gain a sound practical in any skill acquisition program, especially Nigerian Certificate in Education (Technical). The success of NCE (Tech) training to a large extent depend on the quality of practical skills acquisition in the course of the programme which is seemed lacking as a result of so many factors such as lack of tools equipment and infrastructural facilities.

The statement above is in line with Nwaogwu (2005), who observed that the serious problem that has hindered the success of Technical education is inadequate funding which has led to shortage of workshop tools and equipment, poor infrastructural facilities, among others. This shortage definitely affects the quality of practical skills acquisition of woodwork students at NCE level.

Also, Onuegbu (2014), found that 91% of technical teachers stated that they were not satisfied with their job as tools and equipment needs to carryout their duty is not readily provided. While Ewen (2008), pointed that teachers' satisfaction is directly linked with the quality and quantity of training and career opportunities. Olawale, (2010), observed that most college of education graduates were not equipped with the required practical skills which can enable them to be productive in the world of work, and this subsequently leads to their unemployability after graduation as they lack require skills acquisition to enable them perform maximally. Practical acquisition has been identified as an integral component of technical education. As important as this aspect is, nobody seems to have come out with a scientific appraisal of practical skills acquisition of NCE (Tech) programme therefore, the need for this study is essential.

Purpose of the Study

The purpose of this study is to appraise the practical skill acquisition of woodwork technology in Nigeria Certificate in Education (Tech). While the objectives based on the NCCE minimum standard are to determine:

1. The adequacy of tools and equipment in wood workshop of the school of Technical Education, COE Minna.
2. The adequacy of time allotted for woodwork practical in NCE (Tech) programme of the school of Technical Education, COE Minna.
3. The frequently used teaching techniques and instructional materials for woodwork practical skills acquisition.

Research Questions

The following research questions are formulated to guide this study

1. How adequate are the tools and equipment for woodwork practical skills acquisition?
2. How adequate is the time allotted for woodwork practical skills acquisition?
3. What are the teaching techniques and instructional materials that are used in teaching woodwork practical skills in the workshop?

Methodology

The study was a survey research design. It made use of structured questionnaire to seek the opinion of students and teachers on the adequacy of tools and equipment, time allotted as well as the methods or techniques of teaching.

The instrument used for data collection was a 40-item structured questionnaire which consist of 28, 5 and 7 items in questions 1, 2, and 3 respectively. The questionnaire was developed by the researcher using information obtained from relevant literatures. A four-point rating scale with the following response categories and their assigned numerical values was adopted for the analysis of the research questions; for research question one and two; highly adequate (4), adequate (3), not adequate (2) and highly inadequate (1), while for research question three; strongly agree (4); agree (3); disagree (2) and strongly disagree (1).

Data collected for the study were analyzed using mean and standard deviations to answer the research questions. A mean score of 2.50 was used as the basis for the decision rule. Such that, any item with an average mean of 2.50 and above was regarded as adequate/agreed while items with average mean value of less than 2.50 were considered as not adequate/disagreed.

The population comprises of all lecturers and students of woodwork technology option in the school of technical education, Niger state college of education, Minna. In all Five woodwork lecturers and sixty-five(300 level) woodwork technology students were used for the study. There was no sampling as the total population of 70 respondents were manageable.

Result

Research Question One

How adequate are the tools and equipment for woodwork practical skills acquisition?

Table 1

Means Responses of Lecturers and Students on Adequacy of Woodwork Tools and Equipment for Practical Skill Acquisition.

S/No	Items	X ₁	X ₂	X _t	SD	Remark
1.	Work benches and vices	2.55	2.49	2.52	0.65	A
2.	Circular saw bench	2.32	2.24	2.28	0.63	NA
3.	Surface planer	2.46	2.71	2.58	0.60	A
4.	Panel planer	3.01	2.94	2.97	0.67	A
5.	Band saw	2.56	2.62	2.59	0.63	A
6.	Cross cut sawing machine	2.45	2.42	2.43	0.63	NA
7.	Wood lathe with accessories	3.27	3.61	3.44	0.62	A
8.	Compressor and spraying unit	2.26	2.23	2.24	0.62	NA
9.	Metal jack planes	2.14	2.10	2.12	0.63	NA
10.	Metal smoothing planes	3.41	3.44	3.42	0.68	A
11.	Block plane	2.72	2.64	2.68	0.64	A
12.	Rebate plane	2.36	2.33	2.34	0.61	NA
13.	Grooving/plough plane	2.41	2.44	2.42	0.65	NA
14.	Compass plane	2.31	2.38	2.34	0.61	NA
15.	Saws (assorted)	2.74	2.81	2.77	0.63	A
16.	Chisels (assorted)	2.72	2.64	2.68	0.68	A
17.	Hammers (assorted)	2.64	2.77	2.70	0.66	A
18.	Bits (assorted)	2.41	2.85	2.63	0.66	A
19.	Clamps (assorted)	2.74	2.74	2.74	0.65	A
20.	Power hand tools	2.12	2.21	2.16	0.67	NA
21.	Mallets	2.87	2.81	2.84	0.64	A
22.	Ratchet brace	3.24	3.33	3.28	0.61	A
23.	Coping saws	2.47	2.41	2.44	0.63	NA
24.	Drilling machine	2.22	2.28	2.25	0.68	NA
25.	Ruler (meter rule)	2.54	2.47	2.50	0.64	A
26.	Rasps	3.11	3.16	3.13	0.68	A
27.	Spoke shaves	2.31	2.35	2.33	0.60	NA
28.	Screw drivers	3.51	3.53	3.52	0.65	A

X₁ = mean of lecturers, X₂ = mean of students, X_t = total mean average, SD = standard derivation, A = adequate, NA = Not Adequate

Table 1 shows the Meanresponses of woodwork lecturers and students on the adequacy of tools and equipment for practical skills acquisition in Niger State College of Education. This shows that the mean responses of the respondent's ranges from 2.12 to 3.44. It is discovered from the table that 11 items (2, 6, 8, 9, 12, 13, 14, 20, 23, 24 and 27) were not sufficiently available while the remaining items are readily available for practical skills acquisition in the wood workshop N.C.E (Tech) of Niger state college of education, Minna. The standard deviation which ranges from 0.60-0.68 is an indication that the respondents are similar in their opinion on the adequacy of woodwork tools and equipment for practical tools acquisition in woodwork workshop of (COE)Minna.

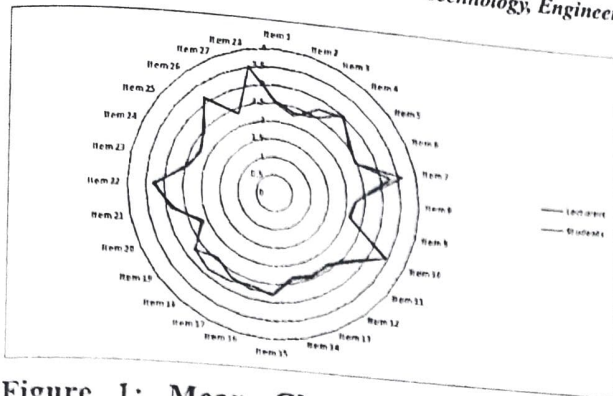


Figure 1: Mean Cluster Radar chat of Woodwork Lecturers and Students on the Adequacy of Woodwork Tools and Equipment for Practical Skill Acquisition

Figure 1 showed the cluster nature of the respondent with respect to each item in the questionnaire. respondents have similar opinion in their ratings on the adequacy of woodwork tools and equipment for practical skill acquisition, this is noted in the closeness of their responses, as indicated by radar graph. For instance, the average mean response of lecturers on item 4 is 3.01 while that of students is 2.94. This is to say that the tools and equipment are adequately provided.

Research Question Two

How adequate is the time allotted for woodwork practical skills acquisition?

Table 2

Mean Responses of Lecturers and Students on Adequacy of Time Allotted to Practical Workshop.

S/N	Statement	\bar{X}_1	\bar{X}_2	\bar{X}_0	SD	Remark
1.	The practical lessons are fix once during the weekdays	2.1	2.6	2.35	0.62	NA
2.	Two hours is allotted for practical lessons on weekends	1.8	2.2	2.00	0.64	NA
3.	Students can work (practical) in the work shop for 2.5 only 1 hour when they have free period	1.9	2.3	2.40	0.61	NA
4.	Duration for practical skill acquisition is less than 12 hours in a week	1.9	2.1	2.00	0.64	NA
5.	Workshop attendants spend 5 hours in a week guiding the students during the practical skills acquisition.	2.1	2.8	2.45	0.61	NA

\bar{X}_1 = mean of lecturers \bar{X}_2 = mean of students \bar{X}_0 = total mean averages D = standard derivation. A = adequate, NA = Not Adequate

Table 2 shows the Mean responses of lecturers and students on adequacy of time allotted for practical skills acquisition. From the table the means responses of 2.35, 2.00, 2.40, 2.00 and 2.45 for items 1 to 5 respectively, indicate that the respondents disagree with all the items. This is to say that adequate time is not allotted to woodwork practical skill acquisition in the technical education workshop of Niger state college of education, Minna.

Research Question Three

What are the teaching methods that are used in teaching woodwork practical skills in the workshop?

Table 3

Mean Responses of Lecturers and Students on the Teaching Methods and instructional materials for Teaching Practical Skills Acquisition.

S/N	Statement	\bar{X}_1	\bar{X}_2	\bar{X}_0	SD	Remark
1.	Students are always taught with the use of audioinstructional Materials	2.8	2.4	2.6	0.53	Agreed
2.	Students are been taught practical skills acquisition with the aid of printed instructional material	2.9	3.0	2.95	0.50	Agreed
3.	The instructional material makes the learning of practical skill interesting	3.3	3.1	3.2	0.49	Agreed
4.	Instructional materials are only introduced in practical acquisition skills in a semester	2.6	2.4	2.5	0.53	Agreed
5.	Demonstration/lecture methods are always used during practical skills acquisition without any instructional materials	3.2	2.6	2.9	0.51	Agreed
6.	Overhead Projectors and Videos are used as instructional materials	2.6	2.8	2.7	0.53	Agreed
7.	Students are usually been grouped during practical	2.7	2.9	2.8	0.40	Agreed

Table 3 shows the means responses of lecturers and students on teaching methods and instructional material use in teaching woodwork practical skills acquisition. From the table, it was observed that the respondents agreed with all items. The mean response of 2.1 and 2.2 for items 1 and 6 respectively, indicate that the respondents agreed with these items. That is, students are always taught with the use of audios, overhead projectors and videos as instructional materials. Also, the average mean responses of items 2, 3, 4, 5 and 7 were agreed with by the respondents. In other words, the respondents agreed that all identified teaching method and instructional material used in teaching woodwork practical skills in technical education department at college of education, Minna.

Findings and discussion

Findings from research question one showed that the respondents agreed with the statement that the school workshops have sufficient tools for practical skills acquisition. It was also discovered that most times, students are provided with the necessary tools for practical skill acquisition if they are to perform any practical, although, these tools and equipment sometimes are not sufficient to go round especially when large classes are involved. Kareem & Ma'aji, (2011) similarly expressed that attempts at teaching practical skill often becomes a success if there are adequate tools and equipment in technical institutions. A similar research by Obasi (2003) also identified the adequacy of workshop laboratories, training tools and materials as factor that enhance the improvement of technical skills acquisition for a qualitative vocational and technical education.

Findings from research question two revealed that both the lecturers and the students are of the opinion that the time allotted during weekdays and weekends are not adequate. Both of them are also of the view that one-hour free period is not adequate for practical exercise. This finding justifies the call by Tsado (2008) that Technical Education

curriculum should be redesigned to allow more time for practical to enable students acquire relevant practical skills.

The findings from research question three disclosed that the teaching of practical skills acquisition is mostly carried out with instructional material. It is on this basis Okpala (2004) opined that teaching should be for the stimulation and direction of human learning and as such the verbal symbolism of chalk and talk method should give way for the use of media in order to make teaching interesting. This is to say that if skills acquisition must be boosted, there is the need to introduce adequate and modern teaching instructional materials.

Conclusion

Centered on the findings of this study, it was concluded that there are sufficient tools and equipment in woodwork practical workshops for students use during practical skills acquisitions. Although, there is still the need to purchase more tools and equipment for students' practical skills acquisition so that tools can sufficiently go round the students during practical skill acquisition. Although, sufficient time is not allotted for woodwork practical skills for NCE (Tech) students and hence should be improved. It is also of importance to note that the teaching method used in the teaching of practical skills acquisitions is the modern teaching method which involves the use of audio, overhead projector and visual instructional materials.

Recommendations

The following recommendations are deemed necessary:

1. The state government should make available fund to provide more tools, equipment and machines for practical skill acquisition programmes in colleges of education.
2. More hours of practical periods be created so that students can gain adequate practical experience before completion of their programme
3. The curriculum should be redesigned by the National Commission for Colleges of Education to give enough time for practical skills acquisition.

4. Government should provide adequate modern teaching instructional material for practical classes
5. Qualify technical instructors should be employed to teach woodwork practical.

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