

MEASURES FOR IMPROVING ACQUISITION OF PSYCHO PRODUCTIVE SKILLS IN WOODWORK TECHNOLOGY BY NCE (TECHNICAL) STUDENTS IN NORTH CENTRAL STATES OF NIGERIA

HASSAN, A. M. and MA'AJI, S. A. (Ph.D.)

ABSTRACT

Adequate Acquisition of psycho-productive skills in Technology Education courses is necessary for effective and efficient teaching, learning and for self-reliance. It was observed that woodwork technology students usually graduate from the NCE (Tech) programme without acquiring adequate psycho productive skills due to lack of provision of enough consumable materials for practice, failure to use the correct teaching methods during practical lessons, failure to render proper assistance for the acquisition of skills during attachments by students on industrial work experience scheme (SIWES) and insufficient time allotted to practical lessons. Hence, this study was designed to determine the measures that could be adopted for improved acquisition of psycho-productive skills in woodwork technology by NCE (Tech) students in North central states of Nigeria. To conduct the study. ANOVA statistic was employed to test the hypothesis at 0.05 level of significance. The finding of this revealed that a total of eleven (11) teaching technique, seven (7) utilization of educational facilities. Eight (8) SIWES operation and ten (10) institutional factors could be used for improving acquisition of psycho productive skills in woodwork technology. There was a significant difference in the mean responses of woodwork technology teachers in the nine tertiary institutions, on all the fifty-one (51) measures suggested. Based on the findings, it is recommended that the student-centered method of teaching (such as Demonstration technique, Assignment technique, System approach technique, Group instruction technique and others) should be used to improved acquisition of psych-productive skills by NCE (Technical) teachers in woodwork technology.

Introduction

Learning experiences which emphasizes learning by doing involves the acquisition of psycho-productive skills essential for making a beginning and advancing in occupations related to one's area of interest. Psycho-productive skills are defined by Olaitan and Ali (1984), Akinsola (2004), and Caudron (2000) stated the required abilities for performing tasks adequately with the muscles in response to sensor-stimuli.

Psycho-productive skills are necessary in all skill acquisition situations especially where students are exposed to the practice of skills and are expected to perform these skills in occupations in which they are employed. Nwankwo (2005), Linda (2000), Charles and Patricia (2009) and Fatunsin (1996) opined that viable and dynamic educational system should be based upon the development of mental and manipulative skills in such a combination that students can perform better in specific and broad occupation situations.

The development of psycho-productive skills can be achieved through planned practical oriented lessons. According to Broad field and Moredock (1987),

Bettina(2003) and Amuludun (2002) "practical work is seen as providing a way for developing a number of different important practical skills because it provides interest and enjoyment, produces, enthusiasm encourages, initiatives, imagination and cooperation and develop self reliance".

The aim of the NCE (Tech) programme is to provide technical teachers with the intellectual and professional background adequate for teaching technical subjects. It also aimed at making the technical teachers adaptable to changing situation in technological development not only in the country but also in the world at large (NCE 1996).

Based on the observations that consumable materials are not usually provided for students practice and students are not usually given the opportunity to carryout the practice by themselves, there is the need to explore ways of improving the acquisition of psycho-productive skills by students of woodwork technology programmes in north central states of Nigeria.

Hypothesis

The following hypotheses were tested at 0.05 level of significance:

1. There is no significant difference in the mean ratings of opinions of woodwork technology teachers on the teaching techniques that could be used to improve acquisition of psycho productive skills by NCE (Tech) students in woodwork technology.
2. There is no significant difference in the mean ratings of opinion of woodwork technology teachers on the utilization of educational facilities that could improve acquisition of psycho-productive skills by NCE (Tech) students in woodwork technology.
3. There is no significant difference in the mean ratings of opinion of woodwork technology teachers on the SIWES operations, which could bring about desired improvement in the acquisition of psycho-productive skills by NCE (Tech) students in woodwork technology.
4. There is no significant difference in the mean rating of opinion of woodwork technology teachers on the

institutional factors that could improve acquisition of psycho productive skill by NCE (Tech) students in woodwork technology.

Population of the Study

The target population for this study is thirty four (34) respondents. This study comprises Twenty three (23) lecturers and eleven (11) instructors currently teaching woodwork technology in the nine tertiary Institutions in North Central States of Nigeria.

Sample of the Study

The entire target population of the study was employed by the researchers because of the small size of the population that can be adequately covered and not too large to handle.

Reliability of the Instrument

Reliability of the instrument was determined using the Cronbach Alpha formula, a pilot testing of the questionnaire was carried out with eight respondents comprising five lecturers and three instructors randomly selected from four tertiary institution in North East of Nigeria. The mean score of their responses was used to

calculate the reliability coefficient of correlation. The calculation yielded a reliability coefficient of 0.84.

Method of Data Collection

The instrument was administered and collected with help of two research assistants. One research assistant was assigned to Kogi and Nasarawa, the second research assistant was assigned to Benue and Plateau, while the researchers served respondents in Niger and Kwara State respectively. An interval of three days was allowed for respondents to complete the instrument after which the

Result

Hypothesis 1: There is no significant differences in the mean rating of opinions of woodwork technology in North-Central States of Nigeria. Data needed to test this hypothesis are presented in table 1.

Table 1: Summary of ANOVA calculations for testing null hypothesis I

Source of variance	Sum of square	Degree of freedom	Mean sum of squares	Cal. F-value	T_critical F
Between groups	3159.48	8	394.94		
Within groups	2403.01	153	15.70	25.15	1.90
Total	5562.49	161			

Table 1 shows that the obtained or calculated F-ratio value 25.15 is greater than the critical F-ratio value 1.90 for 8 and 153 degrees of freedom at 0.05 level of significance. This finding leads to rejecting the null hypothesis as stated. However, the alternative hypothesis was

researchers and the two research assistant went round to retrieve the completed instruments. All the thirty-four (34) questionnaire administered were retrieved.

Instrument for Data Collection

A structured questionnaire was used in collecting the data for this study.

Method of Data Analysis

Data obtained from respondents was analyzed using mean and one-way analysis of variance (ANOVA).

accepted. Therefore, there is a significant difference in the mean rating of opinions of woodwork technology teachers on teaching techniques that could be used for improving acquisition of psycho productive skills by NCE (Tech) students in woodwork technology in North-Central State of Nigeria

Hypothesis 2: There is no significant difference in the mean rating of opinions of woodwork technology teachers on the utilization of educational facilities that could improve acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central States of Nigeria.

Data needed to test this hypothesis is presented in table 2.

Table 2: Summary of ANOVA, calculations for testing null hypothesis

Source of variance	Sum of square	Degree of freedom	Mean sum of squares	C_F-value	Table critical F
Between groups	1542.05	8	192.75		
Within groups	1185.93	90	13.17	14.63	1.90
Total	2727.98	98			

Table 2 shows that the obtained or calculated F-value of 14.63 is greater than the level critical f-value of 1.90 for 8 and 90 degrees of freedom at 0.05 level of significance. This finding leads to rejecting the null hypothesis as stated. However, the alternative hypothesis was accepted therefore, there is a

significant difference in the mean ratings of opinions of woodwork technology teachers on the utilization of educational facilities for improving acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central states of Nigeria.

Hypothesis 3: There is no significant: difference in the mean ratings of opinions of woodwork technology teachers in the nine tertiary institutions on SIWES operations that could be used to bring about improved acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central states of Nigeria,

Data needed to test hypothesis is presented in table 3.

Table 3: Summary of AN OVA calculations for testing null hypothesis 3

Source of variance	Sum of square	Degree of freedom	Mean sum of squares	Calculated F-value	Table critical F
Between groups	1890.26	8	236.28		
Within groups	243.39	63	3.86	6.21	2.10
Total	2133.65	71			

Table 3 shows that the obtained or calculated F-ratio value of 6.21 is greater than the table critical F-ratio value of 2.10 for 8 and 63 degrees of freedom at 0.05 level of significance. This finding leads to rejecting the null hypothesis as stated. Hence, the alternative hypothesis was accepted. Therefore, there is a significant difference in the

mean ratings of opinions of woodwork technology teachers in the nine tertiary institutions on SIWES operations that could be used to bring about desired improvement in the acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central states of Nigeria.

Hypothesis 4: There is no significant difference in the mean rating of opinions of woodwork technology teachers in the nine tertiary institutions on institutional factors for improving acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central states of Nigeria.

Data needed to test this hypothesis is presented in table 4.

Table 4: Summary of ANOVA calculations for testing null hypothesis 4.

Source of variance	Sum of square	Degree of freedom	Mean sum of squares	Calculated F-value	Table critical F
Between groups	3185.35	8	398.17		
Within groups	987.28	117	8.44	47.18	1.90
Total	4172.63	125			

Table 4 shows that the obtained or calculated F-ratio value of 47.18 is greater than the table critical F-ratio value of 1.90 for 8 and 117 degrees of freedom at

0.05 level of significance. This finding leads to rejecting the null hypothesis as stated hence, the alternative hypothesis was accepted

therefore, there is a significant difference in the mean rating of opinions of woodwork technology teachers in the nine tertiary institutions on SIWES operations that could improve acquisition of psycho productive skills in woodwork technology by NCE (Tech) students in North-Central of Nigeria.

Findings of the study

The findings of the study which are organized based on each facet of study are presented below:

On teaching techniques for improving acquisition of psycho productive skills in woodwork technology, it was found out that the following could be used by NCE (Tech) Teachers:

1. Demonstration Technique
2. Repetition technique
3. Assignment technique
4. Observation technique
5. Reward technique
6. System Approach technique
7. Illustration techniques
8. Manipulation technique
9. Individual Instruction technique
10. Group Instruction technique
11. Field Trip technique

It was also found out that the following teaching techniques

should not be used by NCE (Tech) teachers for improved acquisition of psycho productive skills in woodwork technology.

1. Discussion technique
2. Questioning technique
3. Clarification technique
4. Interview technique
5. Punishment technique
6. Aggressive technique
7. Oral instruction technique

On utilization of Educational facilities for improving acquisition of psycho productive skills in woodwork technology, it was found out that the following could be adopted by NCE (Tech) student and Lecturers:

1. Students should be encouraged to carry out repairs and service work by themselves.
2. Instructional manual should always be used by students when operating any equipment or machine.
3. Tools should be properly cleaned and returned to the store by students after use.
4. Tools and equipment should be kept clean and in good working condition at all times.
5. Students should be conversant with the safety rules of equipment before commencing work on them.

6. Overall should be worn during practical lessons.

Teaching techniques utilization of educational facilities SIWES operations and institutional factors for improved acquisition of psycho productive skills (Tech) Students.

Conclusion

This study has investigated the measures for improving acquisition of psycho productive skills in woodwork technology by NCE (Tech) student in North central states of Nigeria. The study came up with 36 measures out of 51 measures suggested to the respondents from teaching techniques, utilization of educational facilities, SIWES operations and institutional factors, which if adopted by the woodwork technology teachers, National Commission for Colleges of Education (NCCE), Industrial Training Fund (ITF), College Administrators, Federal and State Ministries of Education will help in enhancing the acquisition of skills in woodwork technology. Improved acquisition of skills will lead to increased efficiency and self-reliance. It is the wish of the researchers that the findings of the study should be adopted with out delay by those concerned for the technological advancement of Nigeria.

Recommendation

Based on the findings of the study and their implication, the following recommendations were made;

1. The student-centered method of teaching (such as Demonstration technique, Assignment technique, System approach technique, Group instruction technique and others) should be used to improved acquisition of psycho-productive skills by NCE (Technical) teachers in woodwork technology.
2. The findings of the study should be made available to the National Commission for Colleges of Education (NCCE), Federal and State Ministries of Education, Administration of Institution, offering woodwork technology at NCE level, Industrial Training fund and woodwork technology teachers.
3. The NCCE should provide a modified NCE (Tech) curriculum which will reflect the findings of this study.
4. The Federal and State Ministries of Education should ensures that more facilities are supplied, particularly the provision of a consumable materials in

- the workshops for students practices.
5. Administrators of the institutions offering woodwork technology at NCE level should ensure that six hours are allotted for woodwork practice per week.

From the analysis it can be observed that the views of woodwork technology teachers in the nine institutions differ in all the cases under investigation. This difference in view could be as a result of the difference in academic background of lecturers and instructors who constitute the bulk of woodwork technology teachers in the nine tertiary institutions.

References

- Akinsola, M. (2004): Effects of Enhanced Mastery Learning Strategies on Achievement and Self Concept in Mathematics. *Journal of Science Teachers Association of Nigeria*. 21 (2).
- Ametudun, K. A. (2002): *Technology Education and Environmental Issues in Nigeria*, Lagos.
- Bethina, L. B. (2003): *Teaching Style Vs Learning Style. Myths and Realities*. Retrieved from world wide web <http://www.azhtm.com> on 3rd February, 2010.
- Caudron, S. (2000): *Learner Speak out, What Actual Learners, Actually Think of Actual Training, Training and Development*. 54 (4): 52 - 57.
- Charles, S. C. and Patricia, H. M. (2009): *Learning Styles*. Retrieve from <http://www.ntif.com/html/lib/bib/88.dig.htm> on 28th July, 2010.
- Fatunsin, L. O. (1996): *Development and Standardization Performance based test for Assessing Student in Agriculture in Secondary Schools in Ondo State*. Unpublished Doctoral Thesis University of Niger, Nsukka.
- Linda, K. S. (2000): *Learning and Teaching Styles in Engineering Education*, <http://www/skills>

retrieved on 28th July, 2010.

NCCE (1996): *Minimum standards for NCE teachers: Vocational and Technical*. Kaduna: Atman Ltd.

Nwakwo, C. A. (2005): *Psychological Perspective of Effective Teaching and*

Learning. Journal of Counseling and communication. (192): 80 - 93.

Olaitan, S. O. & Ali, A. (1984): *The Making of a Curriculum. (Theory, Product and Evaluation)*. Onitsha: cape Publishers International Limited.