



BEHAVIORAL OBJECTIVES REQUIRED FOR GENERATING WOODWORK TECHNOLOGY INSTRUCTIONAL GUIDE APPROPRIATE FOR NCE (TECHNICAL) PROGRAM IN NORTH WEST, NIGERIA

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Article history:	Abstract:
<p>Received 20th July 2022 Accepted: 20th August 2022 Published: 30th September 2022</p>	<p>In the Technology Teacher Education Programme, behavioural objectives are crucial to effective implementation and evaluation. These objectives specify how programme goals will be achieved and should include a method for evaluating results. The paper identified the teaching objectives required for generating woodwork technology instructional guides appropriate for NCE (Technical) Awarding Institutions in Northeast Nigeria. Relevant related literature to the behavioural objectives of the woodwork technology curriculum was reviewed. An objective with corresponding research questions and a null hypothesis was tested at a 0.05 level of significance and guided the study. The research adopted a descriptive survey design. The findings outlined that the results on behavioural objectives for teaching woodworking technology were highly required. It was concluded that the objectives in the structure of the instructional guide are detailed and standard. The behavioural objectives of the existing minimum standard, currently in use for training NCE (Tech.) students in Woodwork Technology, are devoid of some important areas that need to be reviewed to make it standard. Woodwork teachers should give training following the behavioural objectives as stipulated in the instructional guide for quick understanding and achievement of skills</p>

Keywords:

INTRODUCTION

A behavioural objective is a statement of what students ought to be able to do as a consequence of instruction. According to Good (2017) in an article on how to devise educational objectives, the qualities of behavioural objectives are: relevant, unequivocal, feasible, logical, observable, and measurable. Similarly, behavioural objectives are specific results that a person or system aims to achieve within a time frame and with available resources. In general, objectives are more specific and easier to measure than goals. Behavioral objectives are characterised and described by Westberg and Jason (1993) as consistent with the overall goals of the school, doable, appropriate for learners' stage of development, worthwhile, complex and not treated as if they were etched in stone and not regarded as the only valuable outcomes.

The purpose and function of behavioural objectives are: guide for the teacher to the design of instruction; guide for the teacher for evaluation and test design; guide for the learner relative to learning focus; guide for the learner relative to self assessment; statement of behavioural objectives tells others what is valued by the teacher; it causes careful thinking about what is to be accomplished through instruction; it helps to create focused independent learning material and makes teaching more directed and organized.

The philosophy of this program, NCE (Technical), is to provide technical teachers with the intellectual and professional background adequate for teaching technical subjects and to make them adaptable to any changing situation in technological development not only in the country but also in the world at large. Okwori, Adamu, and Odo (2013) stated that training students in the wood trade should be geared towards achieving the aims and objectives of the programme, which include: 1. To secure employment at the end of the programme as craftsmen. 2. Establish their own businesses, becoming self-employed and able to hire others. 3. Continue your education by enrolling in advanced craft technical programmes or tertiary technical institutions.

However, the curriculum of the NCET woodwork technology is devoid of an instructional manual that clearly defines the parameters. Hence, this is the problem of the study.

OBJECTIVE OF THE STUDY

Find out the objectives of Woodwork Technology Instructional Manual suitable for NCE (Technical) awarding institutions in Northeast Nigeria.

RESEARCH QUESTIONS

What are the objectives of Woodwork Technology Instructional Manual suitable for NCE (Technical) awarding institutions in Northeast Nigeria?

RESEARCH HYPOTHESES

HO₁: There is no significant difference in the mean responses of lecturers and technologists of woodwork technology on the objective for the study of the practical skills components in woodwork trade of the NCE (Tech.) programme.

METHODOLOGY

Research and Development Design was used for the study. This design has been adopted for this study because it is the process used to obtain new knowledge that it might be used to create new technology, products, services, or systems that it will be used. The research adopted a descriptive survey design. Shona (2019) Descriptive research aims to accurately and systematically describe a population, situation, or phenomenon. It can answer *what, where, when, and how* questions, but not *why* questions. The study was carried out at the NCE Technical Awarding Institution in North Western Nigeria, which is one of the geopolitical zones of the country that consists of seven states. The population of the study consists of 58 lecturers and 32 technologists, which totaled 90. The instrument for data collection is a structured questionnaire. The entire population was used; hence, there was no sampling. The questionnaire items were generated and adapted after a broad review of available literature on the instructional content of woodwork technology. The Cronbach Alpha coefficient method will be used to determine the internal consistency of the instrument. According to Brown (2002), Cronbach's alpha provides an estimate of the internal consistency of the instrument. The data collected was analysed using Minitab version (20). A five (5) point rating scale was also used to analyse each of the questionnaire items.

RESULTS

Research Question 1: What are the Objectives of Woodwork Technology in NCE (Tech.) in North West, Nigeria?

Table 1: Mean and Standard Deviation Responses of Lectures and Technologists on Objectives of Woodwork Technology in NCE (Tech.) in North West, Nigeria

Construct	\bar{X}_1	\bar{X}_2	SD ₁	SD ₂	\bar{X}_G	Remark
1 Educate students who will be positively oriented towards the teaching profession	4.56	4.60	0.73	0.70	4.58	Very Highly Required
2 Produce effective classroom teachers who are highly motivated and conscious of the important role they are expected to play in the development of this country	4.69	4.70	0.70	0.67	4.69	Very Highly Required
3 Produce teachers who possess sufficient knowledge and skills in the practice of Woodwork Technology Education.	4.44	4.60	0.51	0.52	4.50	Very Highly Required
4 Equip the students with sufficient level of knowledge in classroom and school management	4.19	4.30	0.40	0.48	4.23	Highly Required
5 Raise teachers who will be psychologically, emotionally and academically sound to impart the necessary knowledge skills to students	4.63	4.50	0.50	0.53	4.58	Very Highly Required
6 Extend students learning beyond the walls of the classroom	4.25	4.40	0.45	0.52	4.31	Highly Required
7 Prepare students to be safe, responsible, innovative and enterprising	4.31	4.50	0.70	0.71	4.38	Highly Required
8 Engage students in real-world problems by collaborating with others in the classroom and across	4.38	4.50	0.50	0.53	4.42	Highly Required

	the world						
9	Enable students to take responsibility for their own learning	3.50	3.70	0.73	0.82	3.58	Moderately Required
10	Provide students with the necessary tools to be successful in their future endeavors	4.50	4.40	0.63	0.70	4.46	Highly Required
11	Provide equal access to woodwork skills and tools to all students in order to provide them with equal opportunities.	4.19	4.30	0.54	0.67	4.23	Highly Required
12	Understand and apply proper safety practices as relate to wood workshop.	4.81	4.80	0.40	0.42	4.80	Very Highly Required
13	Care for and safely use of non-powered woodworking tools.	4.19	4.30	0.40	0.48	4.23	Highly Required
14	Care for and safely use of portable and stationary power tools.	4.25	4.40	0.68	0.70	4.31	Highly Required
15	Be able to estimate material requirements.	4.38	4.40	0.50	0.52	4.39	Highly Required
16	Given simple plans, accurately measure, mark, cut and assemble various projects using hand and power tools.	4.44	4.50	0.51	0.53	4.46	Highly Required
17	Provide vocational skills for furniture making, carpentry and joinery work.	4.56	4.50	0.81	0.85	4.54	Very Highly Required
18	Give an introduction to professional studies in engineering and other technology education area.	3.81	4.00	0.83	0.82	3.88	Moderately Required
19	Give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant	3.81	4.00	0.83	0.82	3.88	Moderately Required
20	Secure employment at the end of the programme as woodwork technology teacher or technologist.	4.44	4.30	0.81	0.82	4.39	Highly Required
21	Set up their own businesses and become self-employed and employer of labour..	4.56	4.40	0.63	0.70	4.50	Very Highly Required
22	Pursue further Technical Teacher Education in the polytechnics, colleges of education and universities.	4.19	4.20	0.54	0.63	4.19	Highly Required
23	Prepare learners for education that is relevant to everyday life	4.31	4.40	0.48	0.52	4.34	Highly Required
24	Equip the schools with a package of knowledge that make learning easy and interesting to the learners	4.31	4.40	0.48	0.52	4.34	Highly Required
	Grand Mean	4.36	4.19	0.59	0.63	4.34	Highly Required

Note: Lecturers = 58, Technologist =32

The result in research question 1 displayed that 7 out of the 24 objectives of Woodwork Technology obtained a mean of 4.50 to 5.00, which shows Very Highly Required. 14 items out of 24 with mean scores of 4.00 to 4.49 were consequently considered Highly Required. While 3 constructs out of 24 were regarded as moderately required with mean scores between 3.00 and 3.99, The total grand mean resulted in a 4.34 and this indicated that lecturers and technologists accepted the items as highly required in the instructional manual for teaching Woodwork Technology in NCE awarding institutions in northeast Nigeria.

RESEARCH HYPOTHESIS: There is no significant difference in the mean responses of lecturers, technologist and technicians of Woodwork Technology on the objective for the study of the practical skills components in woodwork trade of the NCE (Tech.) program.

Table 2: Independent t-test for Lecturers and Technologists’ on the objectives of Woodwork Technology in NCE (Tech) in Northeast, Nigeria?

	N	Mean	Std. Deviation	T	P-values	DECISION
Lecturers	58	4.2613	.32578	-.986	-.558	Null hypothesis Upheld
Technologist	32	4.3790	.23914			

Based on the independent t-test, there is no significant difference between the mean response of Lecturers and Technologists’ on the objectives of Woodwork Technology in NCE (Tech.). Therefore, the null hypothesis is upheld.

FINDINGS

The finding of this study demonstrated that 7 out of the 24 items on the objectives of Woodwork Technology obtained a mean of between 4.50 and 5.00, which shows Very Highly Required. 14 items out of 24 with mean scores of 4.00 to 4.49 were consequently considered Highly Required. 3 out of 24 were regarded as moderately required, with mean scores between 3.00 and 3.99. This indicated that lecturers and technologists accepted the items as highly required in the instructional manual for teaching Woodwork Technology in NCE awarding institutions.

The findings on woodwork technology related to the skills addressed in the instructional guide are directly connected with the stated objectives of woodwork technology for NCE programs. Based on the mean and standard deviation for lecturers and technologists on the objectives of woodwork technology, the ranges between 0.40 to 0.83 and 0.42 to 0.85, with the overall Cronbach’s Alpha reliability coefficient of 66.64% and 72.75%, respectively. This means that the value of Cronbach's alpha is acceptable.

DISCUSSIONS OF THE FINDINGS

The findings on woodwork technology related to the skills addressed in the instructional guide are directly connected with the stated objectives of woodwork technology for NCE programs. The establishment of a program’s purpose, goals, and objectives is critical to effective programme implementation and evaluation. Without a carefully considered purpose and goals, the programme will lack a clear direction and may eventually find its existence called into question.

Based on the independent t-test, there is no significant difference between the mean response of lecturers and technologists on the objectives of woodwork technology in NCE (Tech.). Therefore, the null hypothesis is upheld.

CONCLUSIONS

Based on the findings, the objectives in the structure of the instructional guide are detailed and standard. The contents of the existing minimum standard, currently in use for training NCE (Tech.) students in Woodwork Technology, are devoid of some important content areas which need to be reviewed to make it standard.

RECOMMENDATION

Woodwork teachers and technologists should base the training they give to the students on the objectives as stipulated in the minimum standard for quick understanding and achievement of skills. This is to guarantee that the teaching and learners achieve a high degree of proficiency in the necessary skill areas.

REFERENCES

1. Brown James Dean (2002) Statistics Corner: Questions and answers about language testing statistics: The Cronbach alpha reliability estimate The Cronbach alpha reliability estimate Shiken: JALT Testing & Evaluation SIG Newsletter. 6 (1) February 2002 (p. 17 - 18).
2. Encyclopedia Britannica, Inc. (2022) technical education.
3. <https://smallbusiness.chron.com/disciplined-work-19331.html>
4. <https://www.britannica.com/topic/technical-education>
5. National Commuission for Colledges of Education (NCCE) (2012) Nigeria Certificate in Education Minimum Standards for Vocational And Technical Education. National Commission for Colleges of Education Plot 829 Cadastral Zone AOI Ralph Shodeinde Street. P.M.B. 394, Garki Abuja. <http://www.fcezaria.edu.ng/ncce/prence.pdf>
6. OECD Indicators (2018) Education at a Glance. <https://www.oecd-ilibrary.org/docserver/eag-2018-> HYPERLINK "https://www.oecd-ilibrary.org/docserver/eag-2018-"

- HYPERLINK "https://www.oecd-ilibrary.org/docserver/eag-2018-36en.pdf?expires=1666762425&id=id&accname=guest&checksum=23AEE1635D53DE4A530D6B770998D1D1"
7. Okwori, R.O., Adamu, M. M. and Odo I. M. (2013) Evaluation of Practical Skills Possessed by Woodwork Graduates of Technical Colleges in Niger State, Nigeria. https://www.researchgate.net/publication/315408990_Evaluation_of_Practical_Skills_Possessed_by_Woodwork_Graduates_of_Technical_Colleges_in_Niger_State_Nigeria
 8. Shona McCombes (2019) Descriptive Research | Definition, Types, Methods & Examples. <https://www.scribbr.com/methodology/descriptiveresearch/>
HYPERLINK "https://www.scribbr.com/methodology/descriptiveresearch/" HYPERLINK
"https://www.scribbr.com/methodology/descriptiveresearch/" HYPERLINK
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"https://www.scribbr.com/methodology/descriptiveresearch/"research/#:~:text=Descriptive%20research%20aims%20to%20accurately,investigate%20one%20or%20more%20variables
 9. Wroblewski M.T. (2019) Definition of Business Objectives & Goals.