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Competency Improvement Needs Of Woodwork Technology Lecturers In Utilizing Various Methods For Effective Teaching Of Woodwork Machinery Skills In Colleges Of Education (Technical)

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Abstract: ***This study investigated the Competency improvement needs of woodwork technology lecturers in Utilizing Various Teaching Methods for effective Teaching of woodwork machinery skills in Colleges of Education (Tech). One research question and null hypothesis guided the study. Instrumental Research design was adopted for the study. The sample population comprised 70 experienced lecturers and 72 less experienced lecturers making a total of 142 respondents. The instrument (the observation check list) was subjected to face validation by experts in woodwork technology department and one from measurement and evaluation in the faculty of education. The instrument was also tested for reliability which yielded a reliability coefficient of 0.80. Mean and Standard Deviation was used to answer the research question while the hypothesis was tested using t-test at 0.05 level of significance. Competency improvement needs of utilizing various teaching methods for effective teaching of woodwork machinery skills were identified as required and relevant for successful teaching. It is recommended that a woodwork technology lecturer should attend seminars, conferences and workshops towards equipping their competencies.***

Keywords: woodwork, competency, lecturer, improvement, needs, teaching.

I. INTRODUCTION

Education as a process through which the learner acquires, knowledge, skills, habits, sentiments and valves to be useful in the society, should be well organized, managed and evaluated to ensure quality. Learners must therefore, be exposed positively to the required knowledge and skills to develop their potentials for the desired standard. This will enable them transfer what is learnt to other environment or situations. Consequently, the Federal republic of Nigeria (NPE 2004) stipulates that efforts shall be made to relate education to overall community needs. Woodwork Technology is a Subject aimed at equipping the learners with useful skills and knowledge in desired areas of woodwork. Competency skills involve the totality of one's personality traits. Achilike and Okwuanaso (2001) noted that the totality of personality skills on a job would involve a complex, psychomotor skills and attitude towards a job. Furthermore, individual competency skills encompass well-established habits of doing something involving acquisition of capabilities in the most economical way. Competencies or skills are those abilities relating to power and authority of knowledge, attitudes and facts necessary for accomplishing tasks.

OBJECTIVES OF THE STUDY

The aim of the study was to determine the competencies needed of woodwork technology lecturers in utilizing various teaching methods for effective teaching of woodwork machinery skills. The specific objectives were to: ascertain the competencies improvement needs of woodwork technology lecturers in utilizing various teaching methods for effective teaching of woodwork machinery skills in colleges of education technical.

HYPOTHESIS

One null hypothesis was formulated and tested in the study: There was no statistical significant difference in the mean scores utilizing various teaching methods of the respondents regarding the improvement needs of woodwork technology lecturers for effective utilization of various teaching methods of woodwork machinery skills.

II. METHODOLOGY

A descriptive survey design was adopted in accomplishing the purpose and objective. Data were collected from respondents and analyzed using standard deviation statistical tools.

A. SAMPLE POPULATION

The study population was one hundred and forty- two (142) respondents, comprising 70 experience lecturers and 72 less experience lecturers of woodwork technology from colleges of education (Tech) in north-central zone of Nigeria.

B. INSTRUMENT

Observation check list was the instrument used. It was patterned on four point weighted format Viz:-Very High extent (VHE) 4, High Extent (HE) 3, Low extent (LH) 2, and Very Low Extent (VLE) 1 respectively. Observation Check list were generated from the literature, assessed for content and face Validity by two experts in woodwork technology department and one from measurement and evaluation unit from Federal University technology (FUT) Minna. Instrument revisions were made based on feed backs obtained. Kendel – W of concordance statistic was used to established the instrument reliability, which gave the reliability coefficient (rs) 0.80, attesting to the reliability of the instrument. Fifty – three items instrument sought information on utilizing various teaching methods for effective teaching of woodwork machinery skills.

C. DATA COLLECTION TECHNIQUE

The distribution and collection of completed data was accomplished by the researcher assisted of five technologist from the colleges of education technical was recovered and analyzed.

D. TECHNIQUE OF DATA ANALYSIS

Data analysis was accomplished using computer software package (SPSS): Mean and standard deviation for the research question, whereas t-test statistic was used in testing hypothesis and Kendel –W of concordance measure the internal consistency. The mean response was based on four point weighted scale Viz:-Very High extent (VHE) 4, High Extent (HE) 3, Low Extent (LE) 2, and Very Low Extent (VLE) 1. Accepted response of 2.50 Mean of Means score that is, criterion / Decision mean Valve was adopted based on Tuckman (1992) and Awotunde and Ugodulunwa (2004) concept of scales terms. Statistical tests were conducted at 0.05 level of significance (P).

III. RESULTS

A. RESEARCH QUESTION 1

What are the competency improvement needs by wood work technology lecturers in utilizing various teaching Methods for effective of wood work machinery skills?

S/N	Items	N	$\bar{X}$	SD	Decision
1.	Inductive teaching technique in teaching sharpening Circular Saw.	142	3.14	0.63	HE
2.	Demonstration Teaching method in sharpening Circular Saw blade.		3.98	0.85	HE
3.	Project teaching method in sharpening Circular Saw blade.		3.07	0.99	HE
4	Activity teaching technique in teaching sharpening Circular Saw blade.		3.20	0.76	HE
5.	Inductive technique in teaching cross -cutting of wood.		3.07	1.01	HE
6.	Demonstration Teaching method in teaching cross cutting of wood.		3.09	1.06	HE
7	Deductive technique in teaching cross- cutting of wood.		3.21	0.75	HE
8	Field trips technique in teaching cross -cutting of wood.		3.11	0.89	HE
9.	Discussion method in teaching cross -cutting of wood.		3.46	0.79	HE
10	Lecture method in teaching Cut ‘V’ grooving, dados using router machine. AS		3.56	0.81	VHE
11	Demonstration method in teaching Cut ‘V’ grooves, dados using router machine.		3.58	0.76	VHE
12.	Project method in teaching Cutting dovetail using dovetail template.		3.47	0.66	HE

13.	Assignment technique in teaching Cutting mitre joints.	3.44	0.61	HE
14.	Class method of teaching in teaching Cutting mitre JO jilts	3.08	0.69	HE
15.	Activity technique in teaching Cutting mitre joints.	3.01	0.63	HE
16.	Demonstration method in teaching Curve shapes	2.28	0.64	HE
17.	Project method in teaching ellipse Cutting.	2.97	0.63	HE
18.	Lecture method in teaching beveling of wood.	3.24	0.63	HE
19.	Field trips technique in teaching beveling of wood.	2.82	0.96	HE
20.	Inductive technique in teaching beveling of wood.	3.11	0.87	HE
21	Assignment technique in teaching beveling of wood.	2.72	1.05	HE
22.	Activity technique in teaching straight cutting of wood using band saw.	2.50	0.95	HE
23.	Individualized technique in teaching of straight cutting of wood using band saw	3.07	0.63	HE
24.	Discussion method in teaching of straight cutting of wood using hand saw	2.98	0.66	HE
25.	Project method in teaching straight cutting of wood using hand saw	3.01	1.03	HE
26.	Field trips technique in teaching of straight cutting of wood using hand saw	3.43	0.94	HE
27.	Demonstration method in teaching of Cutting half-lap joints	3.32	1.01	HE
28.	Assignment technique in teaching Cutting of bridle joints	3.35	0.76	HE
29.	Demonstration method in teaching turning a straight cylinder to specified diameter	3.15	1.01	HE
30.	Project method in teaching turning a straight cylinder to specified diameter	2.98	0.90	HE
31.	Role play method in teaching molding spindle	3.07	1.02	HE
32.	Activity technique in teaching molding spindle	2.99	0.92	HE
33.	Class method in teaching Molding spindle.	2.55	1.16	HE
34	Demonstration method in teaching molding spindle	2.72	0.90	HE
35	Class method in teaching Mortising piece of wood.	2.69	0.81	HE
36	Role play method in teaching curve shapes of wood parts in the desired dimensions	142	2.29	1.00	HE
37.	Individualized technique in teaching curve shapes of wood parts in the desired dimensions		2.63	1.10	HE
38.	Assignment technique in teaching curve shapes of wood parts in the desired dimensions		2.85	1.05	HE
39.	Activity technique in teaching curve shapes of wood parts in the desired dimensions.		3.08	0.88	HE
40.	Deductive technique in teaching curve shapes of wood parts in the desired dimensions		3.37	0.84	HE
41.	Discussion method in teaching curve shapes of wood parts in the desired dimensions		3.45	0.71	HE
42.	Individualized technique in teaching curve shapes of wood parts in the desired dimensions.		3.35	0.67	HE
43.	Field trips technique in teaching Sharpening the router bits.		3.08	0.95	HE
44.	Deductive technique in teaching of cutting tenon with square shoulder using tenon machine		3.01	1.02	HE
45.	Assignment technique in teaching of cutting tenon with sqare shoulder using tenon machine.		3.31	0.73	HE
46.	Discussion method in teaching of Rebeting the edge of a board.		2.94	1.08	HE
47.	Deductive method in teaching of Mortising the slot) and the tenon with router.		3.13	1.03	HE
48.	Individualized technique in teaching cutting lap-joints or half-lap with the router.		3.09	0.90	HE
49.	Activity technique in teaching Cutting of chamfers with the router.		3.11	0.86	HE
50.	Project method in teaching trench piece of wood using circular saw		2.90	1.02	HE
51.	Project method in teaching of relief carving using the router.		3.00	0.98	HE
52.	Activity technique in trench piece of wood using circular saw		3.44	0.74	HE
53.	Lecture method in teaching of Cutting dovetail joints.		3.13	0.87	HE
	Grand Mean		**3.04**	**0.88**	

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Table 1: Mean and Standard Deviation on Utilizing Various Teaching Methods for Effective Teaching of Woodwork Machinery Skills

H_{01}: There is no significant difference in the mean rating of wood work technology lecturers on the competency improvement needs in utilizing various teaching methods for effective teaching of wood work machinery skills based on experience

S/N	Items	N	$\overline{X}$	SD	DF	t-cal	t-ait	Decision
1	Experienced	70	3.20	0.79	140	1.51	1.96	
	Less Experienced	72	2.94	1.19				Uphold
2.	Experienced	70	3.40	0.71	140	3.54	1.96	
	Less Experienced	72	2.79	1.26				Reject
3	Experienced	70	3.36	0.62	140	2.32	1.96	
	Less Experienced	72	3.07	0.85				Reject
4	Experienced	70	3.21	0.76	140	1.34	1.96	
	Less Experienced	72	3.01	1.00				Uphold
5	Experienced	70	3.47	0.78	140	0.01	1.96	
	Less Experienced	72	3.46	0.82				Uphold
6.	Experienced	70	3.59	0.79	140	0.42	1.96	
	Less Experienced	72	3.53	0.84				Uphold
7	Experienced	70	3.66	0.70	140	1.12	1.96	
	Less Experienced	72	3.51	0.82				Uphold
8.	Experienced	70	3.50	0.58	140	0.50	1.96	
	Less Experienced	72	3.44	0.73				Uphold
9	Experienced	70	3.51	0.56	140	1.36	1.96	
	Less Experienced	72	3.38	0.66				Uphold
10	Experienced	70	3.06	0.72	140	0.36	1.96	
	Less Experienced	72	3.09	0.68				Uphold
11	Experienced	70	3.07	0.55	140	1.07	1.96	
	Less Experienced	72	2.96	0.71				Uphold
12.	Experienced	70	2.81	0.64	140	0.18	1.96	
	Less Experienced	72	2.83	0.65				Uphold
13	Experienced	70	2.99	0.60	140	0.26	1.96	
	Less Experienced	72	2.96	0.66				Uphold
14	Experienced	70	3.30	0.59	140	1.13	1.96	
	Less Experienced	72	3.18	0.66				Uphold
15	Experienced	70	2.99	0.75	140	2.00	1.96	
	Less Experienced	72	2.67	1.11				Reject
16	Experienced	70	3.17	0.83	140	0.79	1.96	Uphold
	Less Experienced	72	3.06	0.90				
17	Experienced	70	2.93	0.80	140	2.38	1.96	Reject
	Less Experienced	72	2.51	1.22				
18	Experienced	70	2.56	0.79	140	0.70	1.96	Uphold
	Less Experienced	72	2.44	1.09				
19.	Experienced	70	3.04	0.55	140	0.52	1.96	Uphold
	Less Experienced	72	3.09	0.69				
20	Experienced	70	3.13	0.51	140	2.74	1.96	Reject
	Less Experienced	72	2.83	0.75				
21.	Experienced	70	3.29	0.64	140	3.17	1.96	Reject
	Less Experienced	72	2.75	1.26				
22	Experienced	70	3.61	0.62	140	2.34	1.96	Reject
	Less Experienced	72	3.25	1.15				
23.	Experienced	70	3.60	0.49	140	3.40	1.96	Reject
	Less Experienced	72	3.04	1.28				
24.	Experienced	70	3.51	0.65	140	2.66	1.96	Reject
	Less Experienced	72	3.18	0.89				
25	Experienced	70	3.51	0.50	140	4.47	1.96	Reject
	Less Experienced	72	2.81	1.23				
26.	Experienced	70	3.23	0.64	140	3.37	1.96	Reject
	Less Experienced	72	2.74	1.05				
27.	Experienced	70	3.43	0.60	140	4.41	1.96	Reject
	Less Experienced	72	2.72	1.20				
28.	Experienced	70	3.13	0.95	140	1.75	1.96	Uphold
	Less Experienced	72	2.86	0.88				
29.	Experienced	70	2.69	1.08	140	1.39	1.96	Uphold
	Less Experienced	72	2.42	1.22				
30.	Experienced	70	2.83	0.78	140	1.40	1.96	Uphold
	Less Experienced	72	2.61	1.00				
31.	Experienced	70	2.64	0.80	140	0.79	1.96	Uphold
	Less Experienced	72	2.75	0.82				
32.	Experienced	70	2.54	0.86	140	2.98	1.96	Reject
	Less Experienced	72	2.06	1.07				
33	Experienced	70	2.74	1.15	140	1.17	1.96	Uphold
	Less Experienced	72	2.53	1.05				
34.	Experienced	70	2.86	1.03	140	0.06	1.96	Uphold
	Less Experienced	72	2.85	1.08				
35.	Experienced	70	3.06	0.88	140	0.27	1.96	Uphold
	Less Experienced	72	3.09	0.88				
36.	Experienced	70	3.39	0.84	140	0.27	1.96	Uphold
	Less Experienced	72	3.35	0.84				
37.	Experienced	70	3.49	0.65	140	0.58	1.96	Uphold
	Less Experienced	72	3.42	0.77				
38.	Experienced	70	3.40	0.65	140	0.84	1.96	Uphold
	Less Experienced	72	3.31	0.69				
39.	Experienced	70	3.23	0.73	140	1.80	1.96	Uphold
	Less Experienced	72	2.94	1.11				
40.	Experienced	70	3.21	0.70	140	2.35	1.96	Uphold
	Less Experienced	72	2.82	1.22				
41.	Experienced	70	3.33	0.72	140	0.30	1.96	Uphold
	Less Experienced	72	3.29	0.74				
42.	Experienced	70	3.21	0.72	140	3.04	1.96	Reject
	Less Experienced	72	2.68	1.28				
43.	Experienced	70	3.29	0.82	140	1.83	1.96	Uphold
	Less Experienced	72	2.97	1.19				
44.	Experienced	70	3.27	0.76	140	2.99	1.96	Reject
	Less Experienced	72	2.93	0.99				
45.	Experienced	70	2.92	0.87	140	2.45	1.96	Reject
	Less Experienced	72	3.28	0.83				
46.	Experienced	70	3.17	0.74	140	3.21	1.96	Reject
	Less Experienced	72	2.61	1.18				
47.	Experienced	70	3.27	0.61	140	3.36	1.96	Reject
	Less Experienced	72	2.74	1.18				
48	Experienced	70	3.56	0.69	140	1.94	1.96	Uphold
	Less Experienced	72	3.32	0.77				
49.	Experienced	70	3.29	0.64	140	2.19	1.96	Reject
	Less Experienced	72	2.97	1.02				
50	Experienced	70	3.63	0.69	140	1.04	1.96	Uphold
	Less Experienced	72	3.50	0.79				
51.	Experienced	70	3.54	0.67	140	4.36	1.96	Reject
	Less Experienced	72	2.85	1.16				
52.	Experienced	70	3.26	0.61	140	4.74	1.96	Reject
	Less Experienced	72	2.54	1.11				
53.	Experienced	70	3.86	0.43	140	6.00	1.96	Reject
	Less Experienced	72	2.83	1.36				

Table 2: Mean Rating of Woodwork Technology Lecturers on the Competency Improvement Needs in Utilizing Various

Teaching Methods for Effective Teaching of Woodwork Machinery Based on Experience

The result of the t-test analysis presented on table 2 revealed that there was no significant difference in the mean rating of experienced and less experienced wood work technology lecturers on the competency improvement need in utilizing various teaching methods for effective teaching of wood work machinery skills in 32 items out of 53 items.. This is because in these items, the t-calculated values obtained are less than the t-critical values of 1.96. Based this, the researcher concludes that there was no significant differences in the mean rating of wood work technology lecturers on the competency improvement need, and uploaded the will hypotheses in those items. While 21 items revealed that there was a significant difference in the mean rating of experienced and less experienced lecturers' wood work technology lecturers. This is because the t- calculated values obtained from these items are greater than t-critical values. Based on this, the reject the null hypotheses on those items.

IV. SUMMARY OF THE STUDY

This study focused on the competency improvement need by wood work technology lecturers for utilization of various teaching methods for effective teaching of wood work machinery skills in colleges of education (technical). The study adopted a descriptive survey design. The population of the study comprised of all the one hundred and forty-two (142) wood work technology lecturers which comprised of (70) experienced and seventy-two (72) less experienced wood work technology lecturers. Because of the small nature of population, all the lecturers were used for the study. Observation check list instrument was used for the study. The observation check list instrument was face validated by three (3) specialists, two (2) from wood work technology technologist and one (1) specialist from measurement and evaluation. The reliability of the instrument was determined using Kendel (W) of concordance method in order to ascertain the internal consistency. The reliability index of the Kendel (W) yielded an index of 0.80.

Results of the data analysis are summarized as follows:

Based on the Finding of the study, it revealed that wood work technology lecturers need to improve their competencies in utilizing various teaching method for effective teaching of wood work machinery skills; Based on the findings of the study, it revealed that there was no significant difference in the mean rating of experienced in- experienced wood work technology lecturers on the competency improvement need for effective teaching of wood work machinery skills in colleges in 32 items out of 53 items while the wood work technology lecturers revealed that there was significant difference in 21 items out of 53.

V. CONCLUSION

The study was carried out in colleges of education (technical) in the North central zone of Nigeria. In the course of the study; It was revealed that wood work technology lecturers highly needed to improve their competencies in utilization of various teaching methods for effective teaching of woodwork machinery skills in colleges of education (technical). Finally the study also revealed that there was no significant difference in the mean rating of experienced and less-experienced wood work technology lecturer on the competency improvement needs in utilizing various teaching methods in teaching wood work machinery skills in colleges of education (technical).

VI. RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made. Wood work technology lecturers should be retrain on the areas they needed to be improve their competencies to enable them teach wood work machinery skills. Wood work technology lecturers should adopt measures that will improve their competencies such as attending conferences, workshops and seminar.

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