

The Use of Podcast Instructional Techniques in General Woodwork: Interest and Ability Levels Reflections

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Abstract

The study sought to determine the effects of the basic podcast and vodcast methods on students' interest and ability in general woodwork in Technical Colleges. Two research questions were raised and answered as well as two hypotheses were formulated and tested at 0.05 level of significance. The study adopted a pretest-posttest non-equivalent control group design of quasi-experimental and factorial design for the study. The study was conducted in Federal Capital Territory (FCT) Abuja, Nigeria. A simple random sampling technique was used to select two technical colleges with 126 students out of a population of 156 years two NTC II general woodwork students in the three technical colleges in FCT. Abuja. The instrument used for data collection was General Woodwork Achievement Tests (GWWAT) and General Woodwork Interest Inventory (GWWIIT). The selected schools are Federal Science and Technical College, Orozo 72, and Government Science and Technical College, Garki 54. The instrument was subjected to face and content validation by three experts. The reliability coefficient of the instrument was determined as 0.78 using Kuder-Richardson 20 (K-R 20). Cronbach Alfa formula was used to determine the internal consistency of GWWIIT the reliability coefficient of 0.85 was obtained. The data for the study was collected by the researcher with the help of two research assistants through the physical administration of the instrument. The study employed the use of descriptive statistics using mean and inferential statistics using Analysis of Covariance (ANCOVA) to analyze the data and test the hypotheses. The study found that basic podcast and vodcast teaching techniques had a positive effect on the interest and ability of students taught General Woodwork. The study recommended among others that General Woodwork teachers should adopt the use of basic podcast and vodcast teaching techniques to enhance students' interest and ability.

Key words: Technical colleges, general woodwork, podcast, interest and ability.

1. Introduction

Technical colleges are institutions designed to set up the individual (student) with logical information and abilities promoting beneficial work. The Nigeria Technical Colleges are instructive organizations laid out determined to

prepare students to obtain proper professional abilities, information, mentalities, propensities for contemplations and characteristics in character that will empower them to foster their educated person, social, physical, profound and financial capacities to becomes confident and add

to National monetary development and improvement (Okolie, et al., 2019).

To guarantee that the point and targets of laying out specialized universities and professional instructional hubs are completely accomplished, the Federal Government of Nigeria (FGN) in 1977 set up National Board for Technical Education (NBTE) to facilitate the exercises of both specialized and professional instructional hubs by setting guidelines for the schools concerning offices, showing labour supply and certification of courses and to ensure that both technical and vocational schools fit in with the State Policy on the putdown necessities and principles. The courses presented at these specialized schools and professional instructional hubs incorporate general subjects, for example, Arithmetic, English language, Social Investigations, Civic Education, Essential Science and Religion Review. While trade areas include motor vehicle mechanics, block laying and concreting, computer craft studies and woodwork trades (NBTE, 2020).

General woodwork is one of the exchange subjects presented in technical and vocational schools. It readies the student with information and abilities in the craftsmanship and art of carpentry and further furnishes the person with the fundamental abilities for self-enterprising and as talented skilled workers in wood-base ventures. General woodwork is the movement or ability to make things from wood and incorporates bureau making, woodturning, carpentry, joinery and woodcarving. Okwori et al, (2013) thought that the expertise areas of the General woodwork educational plan incorporate carpentry and joinery, upholstery, wood machining and furniture making. As per FGN, (2014) general woodwork students that total the program will have the potential chance to get work toward the finish of the entire course or set

up their venture and become independently employed and have the option to utilize others.

The readiness of general woodwork students for fruitful and useful interest in the realm of work is progressively earning respect as a significant obligation of technical and vocational schools, general woodwork students should be helped and arranged agreeable for beginning and preceded with business. Be that as it may, the steady unfortunate scholastic accomplishments as well as the specialized subjects' General woodwork comprehensive have been ascribed to the utilization of improper teaching strategies embraced by instructors (Ogbuanya and Owodunni, 2013). Thusly, the utilization of suitable educational strategies for teaching like information and communication technology (ICT) that will build students' inclusion, responsibility, interest, and ability in learning ought to be taken on. Hence, among a few ongoing advances that can help teachers in the conveyance of educational substance to students are basic podcasts and vodcasts.

A podcast is an advanced media document or administration of a document that is appropriated over the web and utilizing a partnership that takes care of playback on compact media players and PCs. Many explorers have shown that instructive utilization of podcasts presents inventive and imaginative educating points of view. Consequently, uplifting students and instructors to tune in and watch, use, and produce podcasts empower them to utilize sound and video seeing and webcast creation as an asset to help cooperative learning and the improvement of shared information. Kay (2012) distinguish three sorts of digital broadcast to incorporate. They are basic podcast, upgraded web recording and vodcast. A fundamental basic podcast contains just sound substance and is the least demanding to make and pay attention to, an

improved digital broadcast has both sound and video slides.

The improved digital recording is like a conventional webcast. It contains media data, for example, slides, pictures, photos brief video and section that assist clients with expanding their discernment of the points, it is a slide on the learning satisfaction with sound and the third one is the vodcast (or video webcast) which contains both video and sound records. The decision of digital recording by the instructor is impacted by the system utilized and the learning content to be provided to the students. In any case, this study is restricted to two kinds of a podcast which are basic podcasts and vodcasts. Kay (2012) believed that students advance by examining, teaming up, investigating, and at last, creating scholastic-based video webcasts assuming they are engaged with arranging and making their video digital recordings. Accordingly, upgrading students' interest and ability in learning might be utilized.

Interest is a significant component of learning. As per Ogbuanya and Owodunni (2013), it is seen as the inclination an individual has when the person needs to discover or find out about something. This implies that the students will undoubtedly focus on that specific illustration. Eze (2012) kept up that interest comes therefore or enthusiasm of interest to learn not forcibly. Interest is a significant variable in learning since, in such a case that a student has a positive interest towards a specific subject the person in question will not just appreciate concentrating on the matter but would likewise get fulfilment from the information regarding the matter. Interest is basic in any singular decision task. It comprises sentiments and propensities towards the substantial matter. A trademark element of interest is a sign of an alternate inclination toward activities, occasions or plans.

An understudy's advantage in scholastic accomplishment will actuate him to act and act with a specific goal in mind towards his examinations (Ogbuanya and Owodunni 2013). This can be connected with students' interest, responses, impressions and sentiments the student has over general woodwork and its connected undertakings most particularly in points like machine devices, wood finishes and finishing, lumber planning, wood fittings and among others which students perform underneath assumption in their tests and, surprisingly, their last assessments. Hence, interest can improve students' ability in learning.

Ability empowers students to comprehend and move to understand starting with one circumstance and then onto the next. Ability level is the trademark method of working that a student shows in scholarly exercises in a profoundly reliable and enticing manner (Charles, et al, 2017). Ability level impacts the rate, amount and nature of learning. It likewise influences how students move and hold what they have realized in homerooms (Ezeugwu, et al., 2016). The educating and learning of woodwork trades at the specialized school ought to deal with both the low, medium and high-ability students.

Iji and Herbor-Peters (2015) expressed that informative practices in the homeroom in Nigerian schools appear to lean toward just the students with high ability. Abakpa and Iji (2011) affirmed that with the customary strategy for educating, the hole between the accomplishments of high and low-ability students keeps on augmenting. Consequently, there is a need to investigate approaches that will further develop students' abilities at all levels, these structure the bases to check how the basic podcast and vodcast instructional techniques can upgrade students' interest and ability in everyday woodwork.

2. Statement of the Problem

General woodwork students upon graduation are supposed to have abilities among others in machines, carpentry and joinery, furniture making and upholstery, as well as being able to work with woodwork machines, keep up with and fix household furniture among others (Oviawe, 2021). It is trusted that these abilities will support their possibilities at big business and independence. Tragically, this is not true of the greater part of the general woodwork graduate as they are not getting the pre-imperative abilities required from the specialized colleges, which makes them experience extraordinary hardships in lying out and overseeing independent company endeavours. Subsequently, making their becoming financial freedom troublesome. Umar (2014) saw that general woodwork students of technical colleges need important information and abilities expected for business.

As a woodwork educator, perceptions and collaborations with students in technical colleges in FCT Abuja have shown that most students do not have the necessary abilities to fire up an undertaking or to be utilized as expertise skilled workers in the business because they failed to stamp and build basic woodwork joints, these grabbed the eye of the analyst. The ramifications of this are that students might not have been given the essential abilities because of unseemly techniques for guidance, informative materials and the failure of the educator to carry out the educational program. Igwe and Ikalule (2011) credited the unfortunate scholarly execution of students' general woodwork to a lack of teaching strategies utilized by the instructor due to the nonuse of inventive techniques that are critical thinking focused. For example; directed

disclosure, decisive reasoning, and critical thinking among others.

Nonetheless, the utilization of essential basic podcast and vodcast instructional strategies is suspected to have the capability of improving students learning in science (Bimpe, et al, 2016). It is trusted that the utilization of basic podcasts and vodcasts may likewise build the interest and ability levels of students in the learning of general woodwork, Therefore, the issue of the review is placed being referred to frame: Could the utilization of basic podcasts and vodcast instructional techniques altogether affect student's interest and ability in general woodwork in technical colleges in FCT Abuja.

3. Aim and Objective of the Study

The aim of this study is to determine the effect of basic podcast and vodcast instructional methods on General woodwork students' interest and ability in technical colleges in FCT Abuja. Specifically, the study sought to determine;

- i. The effect of the basic podcast and vodcast instructional methods on students' interest in general woodwork in technical colleges in FCT Abuja.
- ii. The effect of high, medium and low ability level students' achievement in general woodwork when taught using basic podcast and vodcast methods.

4.0 Research Questions

Based on the objectives of the study the following research questions were formulated to guide the study

- i. What is the effect of the basic podcast and vodcast instructional methods on students' interest in General woodwork in technical colleges in FCT Abuja?

ii. What is the effect of the basic podcast and vodcast instructional methods on high, medium and low ability level student's achievement in General woodwork?

4.1 Research Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance to guide the study

HO1: There is no significant difference between the mean scores on students' interest when taught general woodwork using basic podcast and vodcast instructional methods.

HO2: There is no significant difference in the mean achievement scores of high, medium and low ability level students in general woodwork when taught using basic podcast and vodcast instructional methods.

5. Methodology

The study adopted a quasi-experimental design of a pretest-posttest non-equivalent control group. The design is most suitable for the study since pre-selection and randomization of groups are often difficult in a school setting, intact classes were used to avoid disruption of normal classes. The study was conducted in Federal Capital Territory, Abuja, Nigeria. FCT is located at the north confluence of River Niger and River Benue. The population of the study was to the entire 126 Year Two (NTC II) students of General woodwork for the 2019/2021 academic session in the three technical colleges in FCT. Abuja and offer General woodwork. A simple random sampling technique was used to sample two technical colleges out the three technical colleges in FCT Abuja. These include Federal Science and Technical College, Orozo 72 and Government Science and Technical College, Garki 54.

Moreover, a simple random sampling technique was used in assigning the two technical colleges into experiment group (A) and experiment group (B). The experimental group A Federal Science and Technical College, Orozo Abuja received (Basic podcast) instructions while the experimental group (B) Government Science and Technical College, Garki, Abuja received (vodcast) instructions. The population was stratified into different ability levels based on their performance in their previous terminal General woodwork examination. The instrument used to collect data for this study was the general woodwork Achievement Tests (GWWAT) and General Woodwork Interest Inventory (GWWIIT). The GWWAT and GWWIIT were subjected to face and content validation by three experts. The reliability co-efficient of GWWAT was determined at 0.78 using Kuder-Richards on 20 (K-R 20) while Cronbach Alfa formula was used to determine the internal consistency of General woodwork interest inventory test (GWWIIT) and yielded 0.85.

Nevertheless, item analysis was carried out on the 40 items developed in the GWWAT to ensure that, each item in the test is standardized. The study was conducted in 8 weeks period during which, 5 topics in general woodwork were covered. The study involved three stages which include the administration of pre-test, treatment and post-test. The pre-test was administered to all the students involved in the study in the first week of the research exercise before both groups are subjected to treatment. After the administration of the pre-test, the students in experimental group A were taught using the basic podcast instructional method and the students in experimental group B were taught using the vodcast method. The treatment lasted for five weeks after which posttests were administered to both groups.

The collection of data for the study was achieved with the assistance of two research assistants through physical administration of the GWWAT and GWWIT to all NTC II general woodwork students to determine their interest and ability level in general woodwork. The study employed the use of descriptive and inferential statistics to analyze the data. Mean and standard deviation were used to answer all the research questions and inferential statistics using Analysis of Covariance (ANCOVA) to test all the hypotheses at .05 level of significance. The ability level of the students was classified and coded into three using the following criteria as agreed by the teachers during the training session based on their previous terminal examination conducted; high 70% and above, medium 40 to 69% and low

Groups	N	Pretest		Posttest		Mean Gain
		Mean	SD	Mean	SD	
A (Basic Podcast)	72	27.65	10.96	41.59	60.60	13.94
B (Vodcast)	54	26.38	97.60	59.42	67.90	17.16

Table 1 revealed the interest inventory score of students on general woodwork using basic podcast and vodcast instructional method. The pretest mean score of students taught GWW using basic podcast method was 27.65 with a standard deviation of 10.96 and the mean score for the post-test was 41.59 with a standard deviation of 60.60 while the pretest, post-test mean-gain was 13.94. The pretest mean score of GWW students taught using the vodcast method was 26.38 with a standard deviation of 97.60 and the mean score for the post-test was 43.54 with a standard deviation of 67.90 while the pretest, post-test mean gain was 17.16. The results revealed that each instructional method has a significant increase in students' academic interest. However, the mean gain of students taught GWW using the vodcast method had higher mean gain compared with students taught

below 40%. The data collected was analysed using Statistical Package for Social Science (SPSS) version 23.

6. Results

Research Question 1

What is the effect of basic podcast and vodcast instructional methods on students interest in General woodwork in technical colleges?

The data for answering research question one were presented in Table 1.

Table 1

Mean of Pretest-Posttest Mean Interest Scores of Experimental Groups Taught General Woodwork Using Basic Podcast and Vodcast Instructional Methods

GWW using the basic podcast instructional method.

Research Question 2

What is the effect of the basic podcast and vodcast instructional methods on high, medium and low ability level students' achievement in General Woodwork?

The data analysis for research question two is shown in Table 2.

Mean of Pretest-Posttest Mean Achievement Scores of High, Medium and Low Ability Level Students Taught General Woodwork Using Basic Podcast and Vodcast Instructional Methods

Table 2

Ability Level	Basic Podcast					Vodcast						
	Pretest		Posttest			Pretest		Posttest				
	N	Mean	SD	Mean	SD	Mean	N	Mean	SD	Mean	SD	Mean Gain
High	30	28.80	3.50	76.17	4.09	47.37	3	27.00	2.00	81.33	3.22	54.33
Medium	57	25.33	2.53	61.46	5.50	36.13	6	26.17	1.72	65.17	2.64	39.00
Low	26	21.04	7.98	60.15	3.92	39.11	4	23.25	2.75	62.25	2.87	38.25

Table 2 shows that the high, medium and low ability students taught general woodwork with basic podcast method had pre-test mean achievement scores as follows high has 28.80 with a standard deviation of 3.50 and a post-test score of 76.17 with a standard deviation of 4.09, and mean gain of 47.37, the medium has pre-test mean score 25.33 with standard deviation of 2.53 and posttest score of 61.45 with standard deviation of 7.50 and mean gain of 36.13 and low has pre-test mean achievement scores of 21.04 with standard deviation of 7.98 and posttest score of 60.15 with standard deviation 3.92 and mean gain of 39.11.

The high, medium and low ability students taught general woodwork with vodcast method had pre-test mean achievement score of high 27.00 with standard deviation of 2.00 and posttest score of 81.33 with standard deviation of 3.22, and mean gain of 54.33, the medium has pre-test mean score of 26.17 with standard deviation of 1.72 and posttest score of 65.17 with standard deviation 2.64 and mean gain of 39.00 and low had pre-test mean achievement of 23.25 with standard deviation of 2.75 and posttest score of 62.25 with standard deviation of 2.87 and mean gain of 38.25. This indicated that students taught general woodwork using vodcast instructional method had higher mean achievement scores than

students taught using basic podcast instructional method.

Hypothesis 1

H02: There is no significant difference between the mean interest scores of high, medium and low ability level General Woodwork students taught using basic podcast and vodcast instructional methods.

The data analysis for Hypothesis one is shown in table 3.

Table 3

Summary of Analysis of Covariance (ANCOVA) for Test of Significant Difference between the Mean Interest Scores of Students Taught General Woodwork Using the Basic Podcast and Vodcast Instructional Method

Source	Type III Squares	Sum of df	Mean Square	F	Sig.
Corrected Model	1123.764 ^a	2	561.882	35.449	.000
Intercept	20130.106	1	20130.106	1270.000	.000
Pre-Interest	1081.920	1	1081.920	68.258	.000
Groups	58.440	1	58.440	3.687	.057
Error	1949.609	123	15.850		
Total	252941.000	126			
Corrected Total	3073.373	125			

a. R Squared = .366 (Adjusted R Squared = .355)

Table 3 shows the F-calculated value for testing the significant difference between the high, medium and low achievement scores of students taught general woodwork using basic podcast and vodcast teaching methods. The calculated F-value was 3.687 and the value of 0.057 is greater than 0.05. Therefore, the null hypothesis of no significant difference is accepted. This indicates that there is no significant difference in the mean interest scores of general woodwork students taught with the basic podcast instructional method and those taught using the vodcast instructional method.

Hypotheses 2

H₀₂: There will be no significant difference between the mean scores on students' ability level interest in general woodwork when taught using basic podcast and vodcast instructional methods.

The data analysis for Hypothesis two is shown in Table 4.

Table 4

Summary of Analysis of Covariance (ANCOVA) for Test of Significant Difference between the Mean Interest Scores of High, Medium and Low Ability Students Taught General Woodwork Using Basic Podcast and Vodcast Instructional Methods

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	5733.383 ^a	3	1911.128	83.574	.000
Intercept	15082.351	1	15082.351	659.557	.000
Pretest	14.893	1	14.893	.651	.421
Ability	4502.369	2	2251.184	98.445	.000
Error	2789.824	122	22.867		
Total	546870.000	126			
Corrected Total	8523.206	125			

a. R Squared = .673 (Adjusted R Squared = .665)

Table 4 shows the F-calculated values for testing the significant difference between the high, medium and low achievement scores of students taught general woodwork using Basic podcast and vodcast teaching methods. The F-calculated value of 98.445 p-value of 0.000 is less than 0.05. the null hypothesis is rejected. Hence, there is a significant difference between the mean achievement scores of high, medium and low-ability students taught general woodwork using

Basic podcast and vodcast teaching methods. To determine the group responsible for the significant difference, a posthoc test was carried out as shown in Table 5.

Table 5: Post hoc Test for the Significance Difference between the Cognitive Achievement Scores of High, Medium and Low Ability Level Students Taught General Woodwork Using Basic Podcast and Vodcast Teaching Method

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
High	Low	16.20*	1.205	.000	13.35	19.06
	Medium	14.83*	1.026	.000	12.39	17.26
Low	High	-16.20*	1.205	.000	-19.06	-13.35
	Medium	-1.38	1.059	.398	-3.89	1.14
Medium	High	-14.83*	1.026	.000	-17.26	-12.39
	Low	1.38	1.059	.398	-1.14	3.89

Table 5 reveals $p = 0.00$ for high level when compared with medium and low levels. This indicated that high ability level is responsible for the significant difference between the cognitive achievement scores of students taught General woodwork using basic podcast and vodcast teaching techniques.

7. Discussion of the Findings

The result of the findings on the student's interest is based on the use of basic podcast and vodcast instructional methods in teaching general woodwork as contained in the data presented in Table 3 on research question one shows a significant increase in their interest in learning GWW with vodcast group having the highest interest score. This is because, the F-

calculated value (5.779) and p-value of (0.057), which is greater than 0.05. Therefore, the null hypotheses that stated there is no significant difference between the mean interest scores of high, medium and low ability level General Woodwork students taught using basic podcast and vodcast instructional methods are accepted. This implies that the two teaching techniques are effective in enhancing students' interest in studying general woodwork.

The findings agree with the findings of Nwaodo (2016) who stated that interest is the attraction, which forces or compels a child to respond to a particular stimulus. A child develops interest if a particular stimulus (e.g. teaching method or school subject) is attractive and arousing or stimulating. This implies that the influence of vodcast instructional methods has stimulated the interest of the students hence making them have a better understanding and seek to improve their ability in the subject area. The study also agrees with the view of Sauer (2012), whose study revealed that students performed better in tasks that piqued their interests. This means that for general woodwork students' high achievement, vodcast teaching method has increased their interest in the subject.

The study is also in line with Paul (2014) who observed that interest can help us think more clearly, understand more deeply, and remember more accurately. Interest has the power to transform struggling performers, and lift high achievers to a new plane. Since the vodcast method aroused the interest in general woodwork, this helps the students to understand more deeply and more accurately and improve their academic performance. Also, Kpolovie et al., (2014) argued that the improvement of students' interest in learning and attitude to school could contribute to enhancing their performance academically. This has clearly shown that the vodcast instructional method is capable of improving students' interest in general

woodwork and other trade subjects offered in technical and vocational colleges.

The results presented the effect of the ability level of high, medium and low students' achievement when taught using basic podcast and vodcast teaching methods as contained in the data presented in Table 4.

Research question two revealed that there were significant differences among the performances of the high, medium, and low-ability students taught with basic podcast and vodcast teaching methods. Both high, medium and low-ability students performed significantly better when exposed to basic podcast and vodcast teaching methods after their pre-test and post-test were compared. It is an indication that basic podcast and vodcast instructional methods are effective in improving the academic achievement of high, medium and low-ability students of general woodwork in technical colleges.

The findings of this study agree with the findings of Abakpa and Iji (2011) who opined that there is a positive correlation between a good teaching approach and students' achievement at all levels of ability in mathematics. Similarly, this study is in agreement with the study of Adeyemo (2010) whose findings showed that students' abilities have a significant influence on the problem-solving task. In this study, basic podcast and vodcast methods are suitable for teaching GWW in technical colleges to improve the academic achievement of high, medium and low-ability level students' but vodcast is more effective.

8. Conclusion

Based on the findings of the study on the effects of basic podcast and vodcast methods on students' interest and ability in General woodwork. The result of the study revealed that basic podcast and vodcast are both suitable teaching methods that can be used to enhance students' interests and abilities. The study further revealed that the vodcast teaching method is

more effective in enhancing students' interest and ability in general woodwork than the basic podcast method. It is concluded that basic podcast and vodcast methods can improve students' involvement in teaching and learning activities inside and outside the classroom. Also, the study has provided general woodwork teachers with a teaching lesson plan that can be used or adapted to teach general woodwork modules using basic podcast and vodcast instructional methods, as one of the contributions to knowledge.

9. Recommendations

The following are recommended based on the study:

- Woodwork teachers should adopt a vodcast instructional method to teach students at technical colleges to enhance students' academic interest and ability in general woodwork.
- Regular workshops and seminars should be organized for general woodwork teachers by Federal and State Ministries of Education on the need for woodwork teachers to use vodcast for instruction.
- Federal Ministry of Education and curriculum developers should incorporate the vodcast instructional method in their future curriculum design for enhanced students' academic interest and ability level in general woodwork.

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