

STRATEGIES FOR IMPROVING WOODWORK PRACTICAL PROJECTS IN TERTIARY INSTITUTIONS IN LAGOS STATE, NIGERIA

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Abstract

The study determined the strategies for improving woodwork practical projects in tertiary institutions in Lagos State, Nigeria. Three research questions guided the study. The study adopted a survey research design. The study was in four tertiary institutions offering woodwork technology education in Ojo and Yaba Local Government Areas of Lagos State. The population for the study was 112 respondents, made up of 12 woodwork facilitators, 7 technicians and 93 students from the study areas. No sampling was done, since the population is manageable. A 46-item self-structured instrument title: Strategies for Improving Woodwork Practical Projects Questionnaire (SIWPPQ) was used for the study. The SIWPPQ was face validated by three experts. A reliability co-efficient of 0.83 was obtained using Cronbach Alpha analysis to determine the internal constituency of the SIWPPQ items. The SIWPPQ was administered to all 112 respondents. Data collected were analyzed using Means and Standard Deviation. The findings revealed 13 items on how motivation of students, 16 items on how instructional facilities and 17 items on how appropriate teaching techniques can improve woodwork practical projects. It recommends that guest speakers/entrepreneurs should be invited to motivate students about the benefits practical projects experiences for employability and Computer Aided Instruction (CAI) technique should be employed to improve students' Computer Aided Design and Drafting (CADD) skills for self-employment on graduation from tertiary institutions.

Key Words: *Strategies, Improvement, Practical projects, Tertiary institution, Woodwork*

Introduction

Making products or articles from wood is one of the oldest occupations in the world. Woodwork is basically deals with the use of wood. Woodwork is the art of producing objects or articles basically deals with the use of wood in buildings or rooms such as doors, windows, roof, bed, cupboards, chairs, and tables. Scottish Further Education Unit (2005) asserted that all woodwork students learn the technical skills needed that enable them accomplish given practical projects in doors, windows, roof, bed, cupboards, chairs, and tables and other interior and exterior products as well as other related woodwork practical projects. In order words, employability prospects of students in woodwork technology education depend largely on the improved practical project skills training acquired for useful economic and productive lives from Nigeria tertiary institutions.

Tertiary institution is a higher education, a post-secondary section of the national education system of Nigeria. Musibau and Festus (2014) posited that tertiary institutions is widely accepted in Nigeria today as a form of investment in human capital development that yields economic benefits and contributes significantly to the nation's future wealth and development by increasing the productive and consumptive capacity of the citizens. Isuku and Emunemu (2009) argued that tertiary institutions exercise a direct influence on national productivity, which largely determines the country's standard of living. It also help in the area of acquisition of woodwork technology education objectives of the local and external environments of individuals and these could be achieved through teaching research; dissemination of existing and new information; service to the community; and help

in stimulating economic and productive skills as an engine of growth through woodwork practical projects.

A practical is a logical order of tasks, idea, or project being more concerned with practice than theory. A project is a set of interdependent tasks that have a common goal. It **is a temporary endeavor undertaken to create a unique product, service, or result**. Kissflow Inc (2021) described a project as any temporary endeavor **undertaken** or a sequence of tasks that need to be completed to attain a certain outcome. In this study, a project refers to any temporary or sequence of tasks with a definite beginning and that must be completed to attain economic and productive outcomes. Practical project is the level of proficiency on a specific task of manipulative skills that involve parts of the body. Omeje (2004) stated that practical projects make school work real, uses students' experiences, motivates natural interest, carries the students forward in clearly defined terms, minimized the chances of waste of time, and emphasizes creativeness. The author further emphasized that practical project offers students the opportunity to choose what problems to tackle and brings practical orientation, evokes or stimulate their creative potentials and thus improve the teaching-learning process. Practical projects allow students to acquire learning experience. Learning experiences are the problems to be solved by students and the work of the teacher is to guide and advice the students. Practical projects in woodwork can be taught to students to handle and use functional modern instructional facilities on how.

Aliyu (2014) reported that most woodwork technology education institutions in Lagos State, Nigeria do not have functional emergent instructional facilities. The author stated further that above 90% of facilitators in Nigeria are not capable to operate available machines and equipment, while this could contribute to poor performance of students in practical projects. Practical project in the opinion of Barnyard and Grayson (2000) always begins from a theory or another empirical study and look for a way of personalizing it. Okoro (2000) argued that construction of a practical project requires the students to apply the knowledge and skills he/she has learnt in the theory course.

The Federal Government of Nigeria (2014) stipulated the needs to prepare future citizens for useful economic and productive lives through the acquisition of appropriate practical project skills required to improve practical projects. This explains that, there is need to improve on woodwork practical project strategies for students self-employable on graduation. Yavala (2011) described improvement as an activity undertaken based on meeting target objectives and satisfaction from lower achievement. In this study, improvement is an activity undertaken based on meeting target woodwork practical project objectives and satisfaction *to fulfil stakeholder* economic and productive strategies.

Strategy is planned series of actions for achieving something. *Riley (2012) stated that strategy is the direction and scope of an organization over the long-term, which achieves advantage for the organization through its configuration of resources within a challenging environment, to meet the needs of markets and to fulfil stakeholder expectations.* Egbita (2006) noted that instructional strategies are decisions about organizing people, materials and ideas to provide learning. Hamza (2010) posited that teaching strategy requires comprehensive instruction that include attention to promote knowledge (what to do), procedural knowledge (how to do it) as conditional knowledge (when and why to do it) as a coherent and substantiated logic for making one set of choices rather than other. Mahan (2017) noted that a student is a person pursuing a particular subject and spending time learning about it, this means he or she is undergoing any subject of his or her interest. A student is a person studying at a tertiary institution. With reference to this study, a student is a person studying woodwork technology education and spending time learning about woodwork practical projects at tertiary institutions. Students come into wood workshop with various levels of motivation to work. There may be an infinite number of actions an instructor can take that will increase student motivation.

Motivation is a psychological construct to explain purposive or goal-directed behavior in human beings. According to Bhatia (2004), motivation is the stimulation or action towards a particular goal where previously there was little or no attraction towards that goal. Motivation plays a pivotal role in the process of learning. It is a force that modifies or directs behaviour; while learning is actually a modification of behaviour, which is permanent in nature and is caused by various psychological factors. A number of factors appeared to have been responsible to motivate students for practical projects development. These in the view of Yalcin and Kapu (2008) include arousal, energizing; motivating the internal state or mental and psychological state towards imitation; the need for students' independence; self-actualization; and sustenance of students' interest. In view of this study, motivation is the internal state or mental and psychological state towards imitation, arousal, energizing, and sustenance of interest of students in woodwork technology education activities towards practical projects development using functional instructional facilities.

Garrison and Archer (2000) noted instructional facilities enhances teaching and arouses the interest and achievement of students and consequently, the realization of the goals of technical education. According to Abimbola (2007), skills are not just acquired in vacuum; they are rather developed in a workshop or laboratory that is replete with the appropriate instructional facilities. Contributions of using instructional facilities during teaching and learning of upholstery and furniture-making practical projects, as highlighted by Shobowale (2015) include attracting student's attention; stimulating students' interest; improving students' level to participate in the teaching and learning activities; helping students to picture reality in what has been taught; and creating an interactive learning environment thereby facilitating effective teaching and learning. The author further concluded that instructional facilities assist the instructors, while training in the workshop; it makes the lesson demonstration easier; more realistic; and concrete. Iloma, Ogbowu, and Dimkpa (2018) argued that instructional facilities affect health behavior, engagement, learning, and growth in achievement of students; it helps the students to be more competitive in achieving their goals through higher level of education and thinking order, it gives students greater opportunities for learning. In this study, instructional facilities are source of knowledge, attitudes, skills and information used for teaching and learning woodwork practical projects from which students can expand and enrich their economic and productive experiences. For effective improvement of woodwork practical project activities appropriate teaching techniques are required to succeed.

Teaching involved the setting up of activities to enable individual learnt something, which can improve his knowledge, skills, and values. Obi (2003) stated that teacher education curricula consist of two main components, first content for the teaching specialty (what to teach) component, and second pedagogical courses (How to teach) component. The feature of a competent teacher according to Obi include his knowledge of the subject matter and pedagogy; has knowledge of his student; is friendly to student, but special friend to none; his students always do well in examination; and makes appropriate use of **teaching** techniques. Teaching techniques referred to the principles used by a facilitator in giving instruction to a group of students. Kirby (2002) noted that teaching techniques comprises the principles and methods used by teachers or facilitators to enable student learning. Teaching profession in the opinion of Shobowale is an occupation that requires extensive teaching techniques for imparting appropriate skills to students or trainees. Three distinct teaching techniques in technology education in the view of the author include group techniques, teacher-initiative techniques and dramatic techniques. In order words, teaching techniques used in improving woodwork practical projects performance of students should be directed to all requirement needed for self-employment. In this study, teaching techniques is the principles and methods used by facilitators for improving woodwork practical projects activities in tertiary institutions.

Indeed, the fundamental ingredient of woodwork practical project is a skill development orientation and subsequently, there is a need to improve upon it in Nigeria tertiary institutions. This implies that it is imperative to improve woodwork practical projects in tertiary institutions in Lagos State, to provide students with requisite skills, knowledge and attitudes for self-employment and to gainful employment in the world of work.

Statement of the Problem

Today's world of technology depends largely on high skilled work force for woodwork technology education economic, innovation and productivity. Woodwork technology education in Nigeria tertiary in situations have major role to play in the production of skilled graduates for employability in the woodworking industries. It does appear that many graduates of woodwork technology education, especially those from tertiary institutions are jobless. They are jobless not because they seem not skilled enough in practical project skills to set-up their own woodwork related enterprise as self-employed graduates. Unemployment rate of the graduates according to Abdullahi (2010) attributed to students' lack of practical project skills necessary to develop and run their career lives. This study therefore aimed to: identify the need for motivating students, determine how instructional facilities can improve woodwork practical projects and examine teaching techniques that can improve woodwork practical projects in tertiary institutions .to produce self-employment woodwork technology education graduates in Lagos States.

Purpose of the Study

The major purpose of the study was to determine the strategy for improving woodwork practical projects in tertiary institutions in Lagos State, Nigeria. Specifically, the study determined:

1. The need for motivating students for improving woodwork practical projects in tertiary institutions.
2. Instructional facilities for improving woodwork practical projects in tertiary institutions.
3. Teaching techniques for improving woodwork practical projects in tertiary institutions.

Research Questions

This study was guided by the following research questions:

1. How can motivation of students improve woodwork practical projects in tertiary institutions?
2. How can instructional facilities improve woodwork practical projects in tertiary institutions?
3. What are the teaching techniques for improving woodwork practical projects in tertiary institutions?

Methodology

The study employed survey research design by seeking the opinion of facilitators, technologists and students of woodwork technology education in Lagos State, Nigeria. The population for the study was 112, consisting of 12 woodwork facilitators, 7 technicians and 93 students from four tertiary institutions offering woodwork technology education in Lagos State, namely: Adeniran Ogunsanya College of Education, Oto Ijaninkin; Fedaeral College of education (Technical), Akoka, Yaba College of Technology, Yaba, and University of Lagos. The entire population of 112 respondents was used for the study. A 46-item self-structured instrument title: Strategies for Improving Woodwork Practical Projects Questionnaire (SIWPPQ) was used for this study on a Five-point Likert-type scale assigned to answer the three research questions. The instrument was face validated by three experts and has a reliability co-efficient of 0.83 was obtained using Cronbach Alpha analysis to determine the internal constituency of the questionnaire items. The Mean and Standard Deviation were employed to answer

the three research questions. Any item with Mean value of 3.50 and above was regarded as *Agreed*, while any item with mean less than 3.50 was regarded as *Disagreed*.

Results

Research Question 1: How can motivation of students improve woodwork practical projects in tertiary institutions?

Table 1: Mean and Standard Deviation of on how Motivation of students Can improve woodwork practical projects in tertiary institutions. N = 46

S/N	Motivation of students	\bar{x}	SD	Remarks
1.	Making practical project contents relevant to student values and goals.	3.86	0.90	Agreed
2.	Relating practical projects to students' everyday experiences.	3.70	0.94	Agreed
3.	Giving personal examples of practical project applications of principles being studied.	3.50	0.90	Agreed
4.	Relating the specific practical projects to students' interests.	3.76	0.87	Agreed
5.	Invite guest speaker/entrepreneurs to talk to the students about their practical project experiences.	4.18	1.72	Agreed
6.	Persuading students to produce personal practical projects.	3.88	0.95	Agreed
7.	Encouraging students to self-monitor their practical projects efforts correctly.	3.60	1.07	Agreed
8.	Establishing a positive relationship with students on their practical projects.	3.56	0.88	Agreed
9.	Rewarding students' practical project efforts achievement adequately.	3.84	1.02	Agreed
10.	Avoiding harsh criticism to students on practical projects in the workshop.	3.77	0.07	Agreed
11.	Organizing innovative industry field trips relating to students' practical projects.	3.76	0.87	Agreed
12.	Facilitating students' decisions toward taking right action in the workshop.	4.14	1.08	Agreed
13.	Making students to be more independence to execute practical projects.	3.79	1.04	Agreed

Data in Table 1 indicated that all the 13 items are agreed upon by the respondents with mean scores greater than 3.50, which indicated that the motivation of students can improve woodwork practical projects in tertiary institutions in Lagos State.

Research Question 2: How can instructional facilities improve woodwork practical projects in tertiary institutions?

Table 2: Mean and Standard Deviation on How Instructional Facilities Can improve Woodwork Practical Projects in Tertiary Institutions. N = 46

S/N	Instructional Facilities	\bar{x}	SD	Remarks
1.	Well planned instructional facilities logically can improve the day-to-day practical projects learning process.	3.77	0.07	Agreed
2.	Regular maintenance of instructional facilities can improve practical projects.	3.72	1.03	Agreed
3.	Creating clear and concise principles to achieve possible practical project's goals.	3.84	1.23	Agreed
4.	Integrating ICT facilities can develop student's computer aided design and drafting skills in practical projects performance.	3.47	0.83	Agreed
5.	Instructional facilities to provide relationship to the end result of practical woodwork.	3.76	0.86	Agreed
6.	Evaluate instructional facilities in woodwork to improve practical projects.	3.74	1.03	Agreed
7.	Advocating for quality of wood materials, fittings and iron mongery can improve woodwork practical projects.	3.79	1.04	Agreed
9.	Instructional facilities can stimulate students' interest during woodwork practical project.	3.74	1.03	Agreed
10.	Instructional facilities can help to focus on the content pedagogy of woodwork practical projects.	3.87	1.06	Agreed
11.	Utilize instructional facilities can develop students' veneering skills in cabinet finishing projects.	3.76	0.87	Agreed
12.	Instructional facilities can create interactive and effective teaching and learning practical projects environment.	3.74	1.03	Agreed
13.	Instructional facilities can enable students picture realities in what has been taught in the classroom.	3.60	0.04	Agreed
14.	Instructional facilities can stimulate students' psychomotor tendencies in practical project activities.	3.76	0.87	Agreed
15.	Instructional facilities can improve students' good health and mental behaviors in practical project activities.	3.62	0.59	Agreed
16.	Instructional facilities can assist facilitators to improve students' productive growth in achieving practical projects' goals.	3.70	0.79	Agreed

Data in Table 2 revealed that the respondents with mean scores greater than 3.50 agreed upon all the 16 item statements, which implies that well planned functional instructional facilities can improve woodwork practical projects in tertiary institutions.

Research Question 3: What are the teaching techniques for improving woodwork practical projects in tertiary institutions?

Table 3: Mean and Standard Deviation on the Teaching Techniques for Improving Woodwork Practical Projects in Tertiary Institutions. N = 46

S/N	Teaching Techniques	\bar{x}	SD	Remarks
1.	Lecture technique.	4.12	1.07	Agreed
2.	Demonstration.	3.95	0.95	Agreed
3.	Project technique.	4.07	1.01	Agreed
4.	Discussion technique	3.84	1.05	Agreed
5	Reciprocal peer technique.	4.00	0.82	Agreed
6.	Computer Aided Instruction (CAI) technique.	3.88	1.20	Agreed
7.	Problem solving technique.	4.93	0.97	Agreed
8.	Independent study technique.	4.09	1.11	Agreed
9.	Apprenticeship technique.	4.00	0.98	Agreed
10.	On-the-job-training technique.	4.12	0.93	Agreed
11.	Supervised study technique.	4.28	1.01	Agreed
12.	Field-strip technique	4.09	1.12	Agreed
13.	Excursion technique	4.00	0.98	Agreed
14.	Exhibition technique.	4.23	1.07	Agreed
15.	Workshop/laboratory technique.	4.30	0.99	Agreed
16.	Industrial attachment technique.	4.12	0.93	Agreed
17.	Guest speaker technique.	4.28	1.01	Agreed

Data in Table 3 showed that the respondents with mean greater than 3.50, which explains that adoption of appropriate teaching techniques can improve woodwork practical projects in tertiary institutions, agree upon all the 17 items.

Discussion of Findings

The data presented in table 1 revealed 13 items stated that motivation of students can improve woodwork practical projects in tertiary institutions. These motivation strategies include making practical project contents relevant to student values and goals; relating practical projects to students' everyday experiences and giving personal examples of practical project applications of principles being studied. It also include relating the specific practical projects to students' interests; inviting guest speaker/entrepreneurs to talk to the students about their practical project experiences; among others. These factors are in agreement with Yalcin and Kapu (2008) claim that a number of factors appeared to have been responsible to motivate students for practical projects development to include arousal, energizing; motivating the internal state or mental and psychological state towards imitation; the need for students' independence; self-actualization; and sustenance of students' interest. These findings also in line with the study of Bhatia (2004) who opined that motivation is the stimulation or action towards a particular goal that plays a pivotal role in the process of learning. The findings and the arguments of authors above helped to justify the findings of this study on the need for motivation of students for improving woodwork practical projects in tertiary institutions in Lagos State, Nigeria.

The results of this study presented in table 2 indicated 16 items on how instructional facilities can improve woodwork practical projects in tertiary institutions. These include well-planned instructional facilities logically can improve the day-to-day practical projects learning process; regular maintenance of instructional facilities can improve practical projects; creating clear and concise principles to achieve possible practical project's goals; instructional facilities can develop students' cognitive skills in practical projects performance; instructional facilities to provide relationship to the end result of practical woodwork; among others. These findings are in conformed with the work of Iloma, Ogbowu, and Dimkpa (2018) who argued that instructional facilities help the students to be more competitive in achieving their goals through higher level of education and thinking order. The result of this study is also in agreement with the findings Shobowale (2015) who stated that using facilities during teaching and learning upholstery and furniture-making stimulate students' interest; improved students' level to participate in the teaching and learning practical project activities; helped students to picture reality in what has been taught; and facilitating effective teaching and learning environment. The findings and the views of authors above gave credence to the findings of this study on instructional facilities for improving woodwork practical projects in tertiary institutions in Lagos State, Nigeria.

Data in Table 3 explained that all the 17 teaching techniques items had their mean scores cut off point above 3.50 can improve woodwork practical projects. These teaching techniques include lecture technique; demonstration; project technique; discussion technique; reciprocal peer technique; computer aided instruction (CAI) technique; among others. These findings are in line with the work of Kirby (2002) who noted that teaching techniques comprises the principles and methods used by teachers or facilitators to enable student learning. The findings of this study also supported the views of Obi (2003) who asserted that the feature of a competent teacher include the knowledge of the subject matter and pedagogy; has knowledge of his student; his students always do well in examination; and makes appropriate use of **teaching** techniques. The findings and the studies of authors above gave credence to the findings of this study on the teaching techniques that can improve woodwork practical projects in tertiary institutions in Lagos State, Nigeria.

Conclusion

Based on the findings of the study, it was established that woodwork practical project contents should be relevant to student values and goals; creating an interactive and effective teaching and learning practical projects environment; and employing appropriate CAI techniques that can improve woodwork practical projects in tertiary institutions in Lagos State, Nigeria.

Recommendations

The study recommended that:

1. Guest speakers/entrepreneurs should be invited to motivate students about the benefits of practical projects experiences for employability in the world of work on graduation.
2. Appropriate instructional facilities should be provided and utilized to stimulate students' interest in practical projects for requisite woodwork economic and productive enterprise.
3. Computer Aided Instruction (CAI) technique should be employed to improve students' Computer Aided Design and Drafting (CADD) skills for self-employment on graduation.

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