



Perceived Influence of Teaching Methods on Students' Workshop Technology Practice in Universities in Rivers State

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ABSTRACT

This study explores the perceived influence of teaching methods on students' workshop technology practice in universities in Rivers State, Nigeria. Technical and Vocational Education and Training (TVET) plays a crucial role in skill development, enhancing students' proficiency, and preparing them for industry-related tasks. The research specifically examines the effects of demonstration, project-based, and problem-solving teaching methods on students' engagement and learning outcomes. A descriptive survey research design was adopted, involving a sample of 200 respondents (students and lecturers) from Ignatius Ajuru University of Education and Rivers State University. Data were collected through structured questionnaires and analyzed using mean, standard deviation, and t-tests at a 0.05 significance level. Findings reveal that the demonstration method enhances student comprehension and practical skills, the project method fosters collaboration and innovation, and the problem-solving method improves critical thinking and cognitive development. The study highlights the need for a learner-centered approach in workshop practice, advocating for the integration of multiple teaching methods and improved instructional materials. Recommendations include organizing competitions to motivate students, providing study grants for tools and equipment, and encouraging collaborative learning to optimize workshop experiences.

Keywords: Perceived, Teaching Methods, Workshop, Technology Practice

INTRODUCTION

Technical Vocational Education and Training (TVET) is a veritable programme of the federal Republic of Nigeria that is aimed at promoting skills development and Technological innovations in educational institutions. This programme of studies career guidance and training is tailored towards the acquisition of employable skills among the students, so that they may be able to contribute their own quota towards economic development (Osuala, 2014, Oladele; 2016; Mba, 2016).

At the ordinary level of education, the students are exposed to some practical skills in their various career paths. They are being taught the requisite skills that are needed in the industries, using the basic tool, machines, construction materials and Technologies. These may not only enhance their academic performance but their level of proficiency maybe enhanced (Awotua-Efebo, 2016; Pilz, 2017; Maxwell, 2019). The teaching approached during workshop practice in educational institutions are aimed at creating an enabling environment, providing opportunities and exposing the learners to the world of work, using suitable instructional materials so as to enable the learners to maximize their potentials (Anastasi, 2020). The methods of instruction are carefully selected by the teacher, to suite the topics, the learners' needs and the needs of the society. While providing

workshop instruction, the teacher may proceed from the simple concepts to the difficult ones, to sustain the interest of the learners (Uzoeshi, 2016; Nwankwo, 2016).

Also, the adoption of one or more teaching methods during workshop activities may motivate the learners to handle some tools, machines and construction materials. These may help them to relate workshop experiences with those skills that are prevalent in the industries. By doing so, the learners may become proficient in their chosen career (Uzoeshi, 2016; Okon, 2018).

The teaching methods such as Demonstration method, Project method, problem solving method, discovery method, Simulation method and so on, may enable the students to understand the subject matter and they may overcome their learning difficulties (Oladele 2016; Uzoeshi, 2016; Nwankwo, 2016). By extension, the demonstration method allows the students to observe and practice what they have been taught, following the steps and procedures which were shown to them. This teaching approach emphasizes on learning-by-doing which promotes the acquisition of motor skills (Oladele, 2016; Benneth, 2020).

Also, projects methods of teaching allows the students to synergize, collaborate and participate actively during group projects and assignments in the workshop. It enables the students to contribute to the success of the project. During workshop practice, the students may be able to carry out some practical activities by themselves, with little or no supervision, thereby making them to discover new skills and approaches. Above all, these students may be able to master the concepts and techniques in their chosen professions (Nwankwo, 2016).

It is possible to adopt one or more teaching methods why delivering a topic, during workshop instructions. The teacher may decide to bring the lesson with the discussion method of teaching. Then, he may proceed to the demonstration method, which may involve the utilization of tools, machines, equipment and construction materials.

In other words, the adoption of more than one teaching method during workshop practice may enable the learners of diverse backgrounds and learning abilities to benefits from the lesson, optimally (Awotua-Efebo, 2016; Mba, 2016).

Teaching methods in the workshop may influence the way and manner, in which the learners learn. For instance, the Demonstration method of Teaching Maybe adopted to captivate the attention of the students. They may remain focused on the teacher and the lesson throughout the period, without being distracted (Mba 2016; Oladele, 2016; Maxwell, 2019). The discovery method of teaching may create an Ave. for the students to learn new things and find out the national rationale behind certain activities. Most workshop activities involve the utilization of safety materials to protect the students from harm and injuries. Any student who fails to put on the necessary personal protective equipment (PPE), correctly, may be injured during workshop practice (Lawrence, 2014; Okon, 2018). Once the students are conversant with the attendance occupational risks that are prevalent in certain vocations, they may be able to abide with the necessary safety protocols Venn, 2014; Oladele, 2016; Pilz, 2017).

In the universities, these students of engineering and technology are being taught, mostly, In the workshops, drawing studios and laboratories. These career paths or professions Are practically oriented and the methods of instruction May vary, from time to time, depending on the nature of the lesson and the ever changing needs of the learners. It is wise to say that education should be learner-centered (Mba, 2015). The students of technology are expected to be taught using suitable methods of instruction and the appropriate instructional materials should be utilized during workshop practice. These may not only enhance their academic performance but they may excel in their chosen profession (Oladele, 2016). The lecturers may collaborate with the workshop attendants, to organize practical lessons in mechanical technology, building technology, automobile technology, electrical/electronics technology, And so on. These practical lessons may involve the utilization of manual tools, power tools, machines, safety gadgets and measuring instruments. These may arouse the interest of the students and they may become proficient in their chosen career. (Thompson, 2015; Mba, 2016; Okon, 2018).

Suitable teaching methods may be selected by the lecturers, during workshop instructions to suit the topics and to target some specific objectives which must be attained by the learners. These are tailored towards the actualization of some broad national goals, as enshrined in the national policy on education. (2016, Revised). It is better to teach the students with efficient instructional materials, machines and equipment during workshop

practice, so as to enable them to become proficient in their chosen career (Uzoeshi, 2016;) Nwankwo, 2016: Benneth, 2018).

When the students of engineering and technology are properly taught, they may be able to contribute their own quota towards economic development and self-reliance. Above all, they may be able to assist this nation to actualize the Millennium Development Goals (MDGs) (Thompson, 2015).

Statement of the problem

University undergraduates are not adequately motivated to participate in workshop practice because of the quality of instruments that are not practically oriented. They may avoid classes and workshop activities if their lecturers are not very strict in enforcing rules of attendance and punctuality. Above all, the students may be absent from workshop practice if they do not have the appropriate safety gadgets that could protect them from bodily harm.

Also, students of technology universities may not be interested in workshop practice, If the lecturer does not adopt A better method of teaching. For instance, when discussion method of teaching is being adopted, instead of demonstration method, these students' Interest in the lesson may Decrease.

In addition, the absence of electrical power supply, during workshop activities may discourage the students from participating actively in the lessons. They may also be discouraged if the equipment and the facilities are obsolete, ricketly and won-out.

Finally, the large population of students of technology have made the available facilities to be overstretched. More so, there are some facilities an instructional materials that are grossly inadequate, for the large number of students who stopped sometimes, the class size may be too large for the lecturer to handle. These are some of the issues that need to be addressed.

Aim and Objectives of the Study

This study is based on perceived influence of teaching methods on students' Workshop technology practice in universities in Rivers State. In specific terms, the study intends to determine the:

- i. Perceived influence of demonstration methods of teaching on students' workshop technology practice, in Universities in Rivers State
- ii. Perceived influence of project method of teaching on students' workshop technology practice, in Universities in Rivers State.
- iii. Perceived influence of problem solving methods of teaching on students' workshop technology practice, in Universities in Rivers State.

Research Questions

The following research questions were formulated for this study:

- i. What is the perceived influence of demonstration method of teaching and students' workshop practice in technology in universities in River State?
- ii. What is the perceived influence of project method of teaching on students' workshop practice in technology the universities in Rivers State?
- iii. What is the perceived influence of problem solving method of teaching on students' workshop practice in technology in universities in Rivers State?

Hypotheses

The following null hypothesis we are formulated and would be tested at 05 level of significance.

HO₁: There is no significant difference between the mean responses of the students and lecturers on the perceived influence of demonstration method of teaching on students' workshop practice and technology in universities in River State.

HO₂: There is no significant difference between the main responses of the students and lecturers on the perceived influence of project method of teaching on students' workshop practice in technology in universities in Rivers State.

HO₃: There is no significant difference between the main responses of the students and lecturer on the perceived influence of problem solving method of teaching on students' workshop practice in technology in universities in Rivers State.

METHODOLOGY

The study adopted the descriptive survey research design, The research population consists of 2000 persons, who are students and lecturers from Two Universities, Such as: Ignatius Ajuru University of Education, Ndele and Rivers State University, Nkpolu-Oroworukwo, Mile 3, Port Harcourt. This are male and female students and lecturers who are in this universities where Technology-based courses are offered in the workshops. Out of these figures 200 are Lecturers and 1800 are students, The sample one for the study consists of 10% of research Population. Specifically, 200 respondents were randomly selected from the population, The instrument was validated by two (2) experts, one from each of the Universities, The mean and standard Deviation were used to analyze the research question whereas the hypothesis were analyzed using t-test. At .05 level of significant. It was decided that mean scores equal or greater than 2.5 be rejected, whereas mean scores equal or greater than 2.5 be accepted.

RESULTS

Research Question 1: *What is the perceived influence of demonstration method of teaching on students' workshop practice in technology in universities in Rivers State?*

Table 1: Perceived influence of demonstration method of teaching on students' workshop practice in technology in universities in Rivers State

S/N	Items	SA	A	D	SD
1	Demonstration method of teaching enables the students to understand the subject matter, clearly.	80.40%	78.39%	30.15%	63%
2	Demonstration method of teaching 100 gives room for the utilization of 50% workshop equipment and other instructional materials.	100.50%	82	63%	126%
3	It allows the students to practice what they were taught, using workshop equipment.	102.51%	102.51%	42%	21%
4	Demonstration method of teaching enables the students.	120.60%	62.31%	42%	14.7%
Total		340	370	56	34

Source: Survey Data, 2024.

N=200

The data obtained from table 1 above have shown that 80 respondents (40%) strongly agreed and 78 respondents (15%) and 6 respondents (3%) said otherwise. Also, it gives room for the utilization of workshop equipment. Those who strongly agreed were 100 respondents (50%). However, 6 respondents (3%) and 12 respondents (6%) disagreed and strongly disagreed, respectively. Demonstration method enables the students to practice what they were taught (45%) and it gives the sample said otherwise.

Research question two: *What is the perceived influence of project method of teaching on students' workshop practice in technology in universities in Rivers State?*

Table 2: Perceived influence of project method of teaching on students' workshop practice in technology in universities in Rivers State

S/N	Items	SA	A	D	SD
5	Project method enables the student to carry out practical projects on their own, in the workshop.	88.44%	100.50%	10.9%	21%
6	It allows the students to discover new skills and techniques, on their own.	110.55%	60.30	18.9%	126%
7	Project method gives room for collaborative efforts among the students.	90.45%	94.47%	10.5%	63%
8	It enables the students to become more innovative in their chosen career.	86.43%	92.46	84%	14.7%
Total		374	346	46	34

Source: Survey Data, 2024

N=200

The data from table 2 indicated that 88 respondents (44%) strongly agreed that project method enables the students to carry out practical projects on their own. It also allows the students to discover new skills (55%). Those who strongly disagreed were 6%. Also, project method gives room for collaborative efforts and synergy among the students (45%) but 6% strongly disagreed.

Also, project method enables the students to be more innovative in their chosen career. (43%). However, 14 respondents (7%) strongly disagreed.

Research Question Three: *What is the perceived influence of problem solving method of teaching on students' workshop practice in technology in universities in Rivers State?*

Table 3 Perceived influence of problem solving method of teaching on students' workshop practice in technology in universities in Rivers State

S/N	Items	SA	A	D	SD
9	Problem solving method enables the students to think critically about possible solutions to problems.	86.43%	82.41%	20.10%	12.6%
10	It allows the students to discover new approaches and techniques in solving a particular problem.	74.37%	112.56%	14.7%	0.0%
11	Problem solving method enhances the cognitive development of students.	80.40%	98.49%	10.5%	12.6%
12	It gives room for new ideas and knowledge, among the students.	100.50%	78.39%	12.6%	10.5%
	Total	340	370	56	34

Source: Survey Data, 2024,

N=200

The data obtained from table 3 above have indicated that 86 respondents (43%) strongly agreed; while, 12 respondents (6%) strongly disagreed that problem solving method enables the students to think critically about possible solutions to problems. Also, 74 respondents (37%) strongly agreed that problem solving method of teaching enables the students to discover new approaches and techniques. Only, 14 respondents (7%) disagreed. Those who posited that problem-solving method of teaching promotes cognitive development of students (80%); while; 100 respondents (50%) strongly agreed that problem-solving method may give room for new ideas, knowledge and innovations. However, 10 respondents (5%) strongly disagreed. The students may also learn on their own to solve problems, when they are properly taught by their lecturers.

Test of Hypotheses.

The null hypotheses which were formulated are being tested using the z -test at .05 level of significance, as shown below.

HO₁: There is no significant difference between the mean responses of the students and lecturers on the perceived influence of demonstration method of teaching on student's workshop practice in technology in universities in Rivers State.

Table 4.

Respondents	N	\bar{x}	SD	α	t crit	t calc.	Decision
Students	180	3.06	0.12	.05	1.96		
Lecturers	20	3.13	0.14				Reject HO ₁

Source: Survey Data, 2024

N=200

The data obtained from table 4. have shown that the mean of 3.06 for the students and 3.13 for the lecturers are equivalent and significant. The calculated z -test value of is greater than the critical z -test value of 1.96, therefore, the null hypothesis is rejected at .05 level of significance.

This implies that demonstration method of teaching may promote students participation in workshop practice and their academic achievements may be enhanced.

Respondents	N	\bar{x}	SD	α	t crit	t calc.	Decision
Students	180	3.11	0.18	.05	1.96		Reject HO ₂
Lecturers	20	3.14	0.16				

Source: Survey Data, 2024.

N=200

The table 5 has indicated that the z -test value of is greater than the critical value of 1.96, therefore, the null hypothesis is rejected at .05 level of significance. The mean values of 3.11 for the student and 3.14 for the lecturers are equivalent. This implies that project method of teaching may promote the acquisition of practical skills during workshop practice.

HO₃: there is no significant difference between the mean responses of the students and lecturers on the perceived influence of problem-solving method of teaching on students workshop practices in technology in universities in Rivers State.

Table 6:

Respondents	N	X	SD	α	t crit	t calc.	Decision
Students	180	3.20	0.18	.05	1.96		Reject HO ₃
Lecturers	20	3.17	0.15				

Source: Survey Data, 2024.

N=200

The data obtained from table 6 above have shown that the mean values of 3.20 for the students and 3.17 for the lecturers are equivalent and significant. The calculated z -test value of 1.96, therefore, the critical z -test value of 1.96, therefore, the null hypothesis is rejected at .05 level of significance. This implies that problem solving method of teaching may promote students academic performance, particularly, in workshop practice in technology.

Findings

The data that was obtained from table 4.5 indicated that there is no significant difference between the mean responses of the students (3.06) and lecturers 93.13). The null hypothesis was rejected at. 05 level of significance because the calculated z -test value is greater than the critical z -test value of 1.96. demonstration method, according to the study, may promote the acquisition of employable skills, during workshop practice in technology.

The second hypothesis was, also rejected at .05 level of significance because the calculated z -test value was greater than 1.96, being the critical z -test value. The mean values were 3.11 for the students and 3.14 for the lecturers wee equivalent and had no significant difference so, project method to teaching promotes group participation in projects. This enhances students involving in workshop practice in technology.

The third hypotheses were, also rejected at .05 level of significance. Hypothesis three was rejected became the z -test value is greater than 1.96, being the critical value. So, problem solving method promotes active participation of students and the enhancement of students' cognitive development.

DISCUSSION OF FINDINGS

This study has indicated that teaching methods may influence student's participation in workshop practice in technology in universities. The quality of instruction may influence the way in which the learner learns and these could be seen in their performance, during assessments.

Teaching methods may vary to a greater extent and new methods and approaches are evolving on a daily basis. The lecturers may combine one or two teaching methods so as to suit the needs of the learners and the ever-increasing needs of the society. The availability of some teaching resources and instructional materials may determine the quality of instructions.

Lecturers are therefore expected to improvise those instructional materials that are not, readily, available and they have to improvise some items and materials, so as to promote the academic development of the students in their chosen career. The type of teaching method must be suitable to the ever-changing classroom situations.

Teaching methods such as project method, problem solving method, demonstration method, role-playing method and so on may require some instructional materials, to enable the workshop facilities must be functional and adequate so that the students may learn effectively (Oladele, 2016).

This study has established a link between the methods of teaching and the acquisition of the requisite employable skills. When the lecturer is capable of utilizing the facilities in the workshop, during workshop practice, the students interest in their chosen career may be enhanced. They may also, learn how to solve some practical problems on their own. (Maxwell, 2019; Anastasi, 2020).

The study has indicated that the quality of instructions may be enhanced when the appropriate instructional materials are being utilized and the method of teaching is suitable, for the learners. For instance, the lecture method and discussion method of teaching is suitable for the adults and adolescents but not for the children in the kindergarten. (Olaitan 2014; Mba, 2016).

On the other hand, the lecturers should adopt better teaching methods when the class size is large ($n \geq 30$) so that all the learners may benefit, optimally, from the lesson. He may split the class into groups or clusters, to enable them to utilize the available resources in the workshop. This can be done when the facilities are grossly inadequate for the large population of learners. (Oladele, 2016).

CONCLUSION

Workshop practice offers the students the opportunity of relating the school environment with the world of work. They may be able to understand the subject matter and some difficult concepts when they are being taught with suitable instructional materials and methods, during workshop practice.

Students of technology may overcome their learning difficulties when appropriate teaching methods are being adopted in the workshops, laboratories, studios and in the classrooms. The demonstration method of teaching, for instance, enables the students to carry out construction activities in the workshop following laid down principles, steps and safety protocols.

It has become imperative to adopt more than one teaching approach during workshop activities to motivate the students to learn new skills and to arouse their interest in their chosen career. The project method, problem-solving method, role-playing method, discussion method and so on may be adopted to sustain the interest of the students in the lessons, during workshop practice and several other fora.

Conclusively, these teaching methods may not only enhance learning among the students, in technology but they may as pier to greater heights in their chosen profession. They may, also perform creditably during assessments, when they are being taught with the necessary instructional materials and workshop equipment. Above all, the methods of teaching, which are goal-oriented may promote the academic performance of the students particularly, those who always participate in workshop activities.

RECOMMENDATIONS

The following recommendations were made, in line with the findings of this study.

- i. Students in universities should be encouraged to participate in workshop activities by organizing exhibitions and competitions for them, in order to enhance their academic performance. Prizes should be given to the best students to sustain their interest and give rise to healthy competitions among them.
- ii. Students of technology should be given study grants, to enable them to buy their own manual tools, power tools and consumables. These incentives may promote skills development among the students and they may be able to carry out minor construction and maintenance, with minimum difficulty.
- iii. The lecturers should encourage participation in projects, to enable the students to synergize and collaborate during workshop activities this may give them the opportunity to utilize available workshop facilities and equipment.

REFERENCES

- Anastasi, E. O. (2020). Vocational Education. Mc Graw Hill Inc. pp. 76-79.
- Awaotua-Efebo, E.B. (2016). *Teaching Technologies*. University of Port Harcourt Press. Pp. 28-30
- Benneth, A. U. (2018). The world of work: Analogies and concepts. *John Wiley & Sons, Inc.* pp. 50-53.

- Maxwell, E.B. (2019) Vocational and Technical Education. *John Wiley & Sons, Inc.* pp. 80-84.
- Mba, T. N. (2016). *Teaching skills for trainee Teachers*. Harey Publishers Ltd. pp. 40-43.
- Nwankwo, O. C (2016). *Guidance and Counseling*. University of Port Harcourt Press. pp. 50-53.
- Okon, I.A. (2018). *Vocational Teacher Education*. Precious Press. pp. 40-42.
- Oladele, J. O. (2016). *Developmental Psychology*. Johns Lad Publishers pp. 60-63 .
- Osuala, E. C. (2014). *Foundations of Vocational Education*. Cheston Publishers. pp . 72-75.
- Pilz, M; (2017). *Vocational Education and Training in times of economic crisis: Lessons from around the world*. John Wiley & Sons Inc. pp. 45 – 48.
- Thompson, J. F. (2015). Foundations of Vocational Education. *John Wiley & Sons, Inc.* pp. 83-86.
- Uzoeshi, K. C. (2016). *Guidance and counseling Foundations and practice*. Paragraphics. pp. 60-64.