

Global Scientific and Academic Research Journal of Education and Literature. ISSN: 2583-7966 (Online) Frequency: Monthly Published By GSAR Publishers Journal Homepage Link- https://gsarpublishers.com/gsarjel-home-page/



ASSESSMENT OF THE PROVISION AND UTILIZATION OF FACILITIES FOR TEACHING AND LEARNING MOTOR VEHICLE MECHANICS IN TECHNICAL COLLEGES IN ONDO STATE.

BY

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Abstract

This paper, titled "Assessment of the Provision and Utilization of Facilities for Teaching and Learning Motor Vehicle Mechanics in Technical Colleges in Ondo State," aims to evaluate the availability and utilization of facilities for motor vehicle mechanics education in these colleges.

The specific objectives include assessing the extent of facility availability, the extent of their utilization, identifying factors affecting their provision and utilization, and proposing strategies for effective management. The research employed a descriptive survey-type method, targeting motor vehicle mechanics trade teachers in technical colleges across Ondo State. A total of 50 motor vehicle mechanics trade teachers were sampled, with 5 teachers randomly selected from 10 technical colleges in Ondo State. Data were collected using structured questionnaires and analyzed using mean scores and t-tests to determine the significance of the findings.

Article History

Received: 11/08/2024 Accepted: 29/08/2024 Published: 31/08/2024

<u>Vol – 2 Issue – 8</u>

PP: - 30-36

Findings from the study revealed a high level of agreement on the availability of facilities, with a grand mean of 3.36, indicating that technical colleges are reasonably well-equipped. However, there is a notable disparity in the effective utilization of these facilities, with a grand mean of 2.30, suggesting significant room for improvement. Factors impacting provision and utilization, such as funding, administrative support, and timely procurement, received high levels of agreement (grand mean of 3.30). Strategies to address these challenges, including increased funding, regular maintenance, infrastructure upgrades, and curriculum alignment, were supported by respondents, with a grand mean of 3.10.

It is recommended that stable policies be implemented to ensure consistent facility provision, comprehensive data collection to support adequate facility execution, and increased government efforts in funding and timely completion of facility-related projects. These measures are essential for enhancing the quality of motor vehicle mechanics education and ultimately improving student outcomes.

Keywords: Motor Vehicle Mechanics, Teaching and Learning, Provision, Utilization and Facilities

Introduction

Education is a crucial component of human resource development, acting as a catalyst for economic, social, and political progress. To fulfill personal and national goals, individuals must develop essential skills. Vocational and Technical Education (VTE) equips individuals with specific skills and techniques for their chosen professions, enabling them to earn a living (Olaoye et al., 2019). The Federal Government of Nigeria (FGN, 2014) defines VTE as educational processes that, in addition to general education, encompass the study of technologies, related sciences, and the acquisition of pertinent skills, attitudes, understanding, and knowledge relevant to various economic and social sectors. Technical colleges, a subset of vocational education, aim to provide individuals with the necessary skills to be self-reliant and responsible members of society. These colleges offer training in fields such as automobile technology, building technology, electrical electronics technology, metalwork technology, and woodwork technology. The Motor Vehicle

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Mechanic (MVM) trade within Technical Vocational Education involves learning about the design, material selection, construction, operation, and maintenance of motor vehicles. According to the National Board for Technical Education (NBTE, 2011), MVM students are expected to test, diagnose, service, and repair faults in conventional motor vehicles and assemble main units and systems according to manufacturers' specifications. Abdulkadir et al. (2020) outlined practical objectives for MVM trainees, including the ability to test, rebuild, and replace injector nozzles, dismantle and reassemble carburetors, replace major emission control components, and diagnose issues related to steering, braking, and suspension systems. Achieving these objectives necessitates adequate teaching and learning facilities in technical colleges.

The significance of instructional facilities in teaching and learning MVM cannot be overstated. Udo and Ubana (2018) emphasized that learning is influenced by one's environment, which includes the availability of facilities that support student learning. Essential facilities for both students and teachers include libraries, drinking water, toilets, laboratories, workshops, and security. Modern educational practices prioritize learner-friendly environments with adequate and spacious classrooms, workshops/laboratories, computers, water supply, toilets, functional libraries, and communication systems (Eric & Ezeugo, 2019). Oloke et al. (2017) highlighted that facilities are crucial for organizational functioning, significantly affecting the efficiency and productivity of any system, including education. They stated that the availability, adequacy, and relevance of these facilities enhance the teaching process. Facilities like workshops, laboratories, studios, equipment, machines, and consumable materials are essential for vocational technology education, aiding effective teaching and learning. Adeniyi-Egbeola (2018) described instructional facilities as materials or services that facilitate teaching and learning. Specifically, for technology education programs, these facilities include basic hand tools, equipment, and machines in workshops and laboratories, which are vital for practical training. However, many technical institutions in Nigeria struggle due to inadequate, non-functional, and poorly managed tools and equipment, hampering effective training (Odoarefe & Osa, 2018). Jidda et al. (2018) noted the insufficiency of necessary facilities in Nigerian educational institutions, especially for technology education. Ndirmbita and Bwala (2019) found that the resources available for teaching technical vocational education are significantly lacking. Thus, there is a critical need for functional tools and equipment in technical and vocational institutions to ensure quality education and training, preparing students for successful careers in the labor market (Omar et al., 2020). Achieving this requires wellequipped workshops with relevant, available, and functional tools, equipment, and materials.

Statement of Problem

According to the Federal Republic of Nigeria (2014), one of the goals of technical education is to provide technical knowledge and suitable competence. According to Bwala (2020), who noted that certain schools lack enough facilities for teaching and learning, technical education has a lot to do with facilities. The researcher has observed that students who pursue Basic technology as a topic lack the necessary competencies. This problem can be attributed to the inadequate or nonexistent facilities for motor vehicle mechanics at technical colleges. Previous governments' attempts to advance technical education so that teachers could teach students the skills they needed with little difficulty have been severely hampered by the leadership's unwillingness to support their words with deeds. According to Ogbunaya and Udoudo (2015), one of the main points of contention among educators who teach technical vocational education and training is the status of workshop tools and equipment in motor vehicle mechanics facilities.

Purpose of the Study

The primary aim of this study is to evaluate the provision and utilization of facilities for teaching and learning motor vehicle mechanics in technical colleges in Ondo State. The study will specifically identify:

- 1. The extent of availability of facilities for teaching and learning motor vehicle mechanics in technical colleges in Ondo State.
- The extent to which facilities are utilized for teaching and learning motor vehicle mechanics in technical colleges in Ondo State.
- 3. Factors that impact the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics in technical colleges in Ondo State.
- 4. Various strategies for managing the factors affecting the effective provision and utilization of these facilities in technical colleges in Ondo State.

Research Question

The following questions guides the study:

- 1. What is the extent of availability of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State?
- 2. How effectively are the available facilities utilized for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State?
- 3. What factors impact the effective provision and utilization of facilities for teaching and learning motor vehicle trade mechanics in technical colleges in Ondo State?
- 4. What strategies can be implemented to manage the factors affecting the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State?

Research Hypothesis

H0₁: There is no significant difference on the opinion of teachers on the level of availability of facilities and the provision and utilization of facilities for teaching and learning

motor vehicle mechanics trade in technical colleges in Ondo state

Methodology

The study adopt the descriptive survey research design which was used to assess the provision and utilization of facilities for teaching and learning of motor vehicle mechanics in technical colleges in Ondo state. The study was carried out in all technical colleges in Ondo State. The population for the study consists of 50 respondents which comprises of 5 motor vehicle mechanics trade teachers selected each from 10 technical colleges in Ondo state. The instrument used was a structured questionnaire tagged "Assessment of the Provision and Utilization of Facilities for Teaching And Learning of Motor Vehicle Mechanics in Technical Colleges Questionnaire" (APUFTLMVMTCQ) developed by the researcher, which consists of items that answer the research questions and test the hypothesis. For every question on the

four-point Likert scale, the instrument has four continuum: Strongly Agree (4 points), Agree (3 points), Disagree (2 points), and Strongly Disagree (1 point). The face and the content validity of the instrument was ascertained by 5 experts in Vocational and Technical in Faculty of Education Department, Faculty of Education, Adekunle Ajasin University, Akungba-Akoko. With the assistance of five research assistants, the researcher physically delivered the questionnaire to the respondents. Back at the location, completed questionnaires were gathered. Descriptive statistics of frequency count percentage, mean and inferential statistics of t-test were used to analyze the recovered questionnaire and test the hypothesis at the 0.05 level of significance.

Results

Research Question 1: What is the extent of availability of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State?

Table 1: Summary on the statement regarding the availability of facilities for teaching and learning motor vehicle mechanics
trade in technical colleges

S/N	Items	Response	SA	Α	D	SD	Total	Mean
1	Fully equipped workshops	F	28	15	6	1	50	3.40
	for motor vehicle mechanics are available in my technical college.	%	56.0	30.0	12.0	2.0	100.0	
2	Diagnostic tools and	F	26	18	6	0	50	3.40
	equipment, such as OBD scanners and multimeters, are adequately available for teaching and learning in my technical college.	%	52.0	36.0	12.0	0.0	100.0	
3	Specialized tools like engine	F	23	21	6	0	50	3.34
	hoists and transmission jacks are readily available for students in my technical college's motor vehicle mechanics program	%	46.0	42.0	12.0	0.0	100.0	
4	Safety equipment and	F	25	17	7	1	50	3.32
	protective gear, such as gloves, goggles, and aprons, are sufficiently provided for motor vehicle mechanics training in my technical college.	%	50.0	34.0	14.0	2.0	100.0	
5	Teaching aids, such as	F	25	20	3	2	50	3.36
	instructional manuals and multimedia resources, are available for motor vehicle mechanics courses in my technical college.	%	50.0	40.0	6.0	4.0	100.0	
	Grand Mean			1				3.36

Table 1 shows the responses on the availability of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State. The majority of respondents agreed or strongly agreed that fully equipped workshops (Mean = 3.40, 86%), diagnostic tools and equipment (Mean = 3.40, 88%), specialized tools (Mean = 3.34, 88%), safety equipment (Mean = 3.32, 84%), and

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teaching aids (Mean = 3.36, 90%) were available. The grand mean of 3.36 indicates a generally high level of agreement on the availability of these facilities, suggesting that technical colleges in Ondo State are reasonably well-equipped for motor vehicle mechanics training.

Research Question 2: How effectively are the available facilities utilized for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State?

Table 2: Summary on the statement regarding the available facilities utilized for teaching and learning motor vehicle
mechanics trade in technical colleges

S/N	Items	Response	SA	Α	D	SD	Total	Mean
1	The workshops for motor vehicle mechanics are	F	1	22	24	3	50	2.42
	fully utilized for practical training sessions	%	2.0	44.0	48.0	6.0	100.0	
2	Computer-aided learning tools and software are	F	7	13	21	9	50	2.36
	effectively utilized in teaching motor vehicle mechanics.	%	14.0	26.0	42.0	18.0	100.0	
3	Teaching aids, such as instructional manuals and	F	1	22	16	11	50	2.26
	multimedia resources, are effectively incorporated into the curriculum	%	2.0	44.0	32.0	22.0	100.0	
4	Safety equipment and protective gear, such as	F	3	16	23	8	50	2.28
	gloves, goggles, and aprons, are consistently used during practical training	%	6.0	32.0	46.0	16.0	100.0	
5	Specialized tools like engine hoists and	F	9	10	13	18	50	2.20
	transmission jacks are frequently used by students for hands-on learning	%	18.0	20.0	26.0	36.0	100.0	
	Grand Mean							2.30

Table 2 revealed the responses on the effectiveness of the utilization of available facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State. The majority of respondents disagreed or strongly disagreed that workshops are fully utilized for practical training sessions (Mean = 2.42, 54%), computer-aided learning tools are effectively used (Mean = 2.36, 60%), instructional manuals and multimedia resources are incorporated effectively (Mean = 2.26, 54%), safety equipment is consistently used (Mean = 2.28, 62%), and

specialized tools are frequently used for hands-on learning (Mean = 2.20, 62%). The grand mean of 2.30 indicates a generally low level of agreement on the effective utilization of these facilities, suggesting that there is room for improvement in the use of available resources for motor vehicle mechanics training in technical colleges in Ondo State.

Research Question 3: What factors impact the effective provision and utilization of facilities for teaching and learning motor vehicle trade mechanics in technical colleges in Ondo State?

Table 7: Summary on the statement regarding the effective provision and utilization of facilities for teaching and learning
motor vehicle trade mechanics in technical colleges

S/N	Items	Response	SA	Α	D	SD	Total	Mean
1	The availability of funding significantly impacts	F	24	24	2	0	50	
	the provision of facilities for teaching and learning motor vehicle mechanics	%	48.0	48.0	4.0	0.0	100.0	3.44
2	Administrative support is crucial for the	F	23	22	4	1	50	3.34
	effective utilization of facilities in motor vehicle mechanics programs.	%	46.0	44.0	8.0	2.0	100.0	
3	Timely procurement of tools and equipment	F	21	14	13	2	50	3.34
	affects the provision and utilization of facilities for motor vehicle mechanics trade	%	42.0	28.0	26.0	4.0	100.0	
4	The level of student enrollment in motor vehicle	F	18	25	4	3	50	3.34
	mechanics programs affects the availability and utilization of facilities.	%	36.0	50.0	8.0	6.0	100.0	

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Global Scientific and Academic Research Journal of Education and literature ISSN: 2583-7966 (Online)

5	The quality of infrastructure, such as workshops	F	23	13	11	3	50	3.08
	and laboratories, impacts the effectiveness of teaching and learning motor vehicle mechanics.	%	46.0	26.0	22.0	6.0	100.0	
	Grand Mean							3.30

Table 3 shows the responses on the factors that impact the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State. Most respondents strongly agreed or agreed that funding availability significantly impacts the provision of facilities (Mean = 3.44, 96%), administrative support is crucial for effective utilization (Mean = 3.34, 90%), timely procurement of tools and equipment affects provision and utilization (Mean = 3.34, 70%), student enrollment levels impact facility availability and utilization (Mean = 3.34, 86%), and the quality of infrastructure influences the effectiveness of teaching and learning (Mean = 3.08, 72%). The grand mean of 3.30 indicates a high level of agreement on these factors, suggesting that addressing these areas is vital for improving the provision and utilization of facilities in motor vehicle mechanics programs in technical colleges in Ondo State.

Research Question 4: What strategies can be implemented to manage the factors affecting the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State

S/N	Items	Response	SA	Α	D	SD	Total	Mean
1	Increasing funding for technical colleges can	F	17	26	6	1	50	3.18
	improve the provision and utilization of facilities for motor vehicle mechanics training.	%	34.0	52.0	12.0	2.0	100.0	
2	Implementing regular maintenance schedules	F	16	11	18	5	50	2.76
	for equipment can ensure the effective utilization of facilities in motor vehicle mechanics trade	%	32.0	22.0	36.0	10.0	100.0	
3	Upgrading infrastructure, such as workshops	F	16	24	10	0	50	3.12
	and laboratories, is necessary for the effective provision of facilities for motor vehicle mechanics training.	%	32.0	48.0	20.0	0.0	100.0	-
4	Aligning the curriculum with current industry	F	16	24	7	3	50	3.06
	standards can improve the relevance and effectiveness of facilities used in motor vehicle mechanics training	%	32.0	48.0	14.0	6.0	100.0	
5	Managing student enrollment numbers can help	F	20	21	8	1	50	3.20
	ensure adequate facilities are available and effectively utilized for motor vehicle mechanics education.	%	40.0	42.0	16.0	2.0	100.0	
	Grand Mean							3.10

Table 8: Summary on the statement regarding the strategies that can be implemented to manage the factors affecting the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics trade.

Table 4 shows the responses on strategies that can be implemented to manage the factors affecting the effective provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State. The majority of respondents agreed or strongly agreed that increasing funding for technical colleges can improve facilities (Mean = 3.18, 86%), implementing regular maintenance schedules can ensure effective utilization (Mean = 2.76, 54%), upgrading infrastructure is necessary for effective provision (Mean = 3.12, 80%), aligning the curriculum with industry standards can enhance relevance and effectiveness (Mean = 3.06, 80%), and managing student enrollment can ensure adequate and effective use of facilities (Mean = 3.20, 82%). The grand mean of 3.10 indicates a generally high level of agreement on these strategies, suggesting that these approaches are considered effective for enhancing the provision and utilization of facilities in motor vehicle mechanics programs in technical colleges in Ondo State.

Hypothesis 1: There is no significant difference on the opinion of teachers on the level of availability of facilities and the provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo state.

Group	Ν	X	SD	DF	t- cal	t-tab	P-Value	Decision
availability of facilities	50	3.36	0.20		1.5	1.984	> 0.05	Accepted
provision and utilization of facilities	50	3.30		48				

 Table 5: Summary on the statement regarding the opinion of teachers on the level of availability of facilities and the provision and utilization of facilities for teaching and learning motor vehicle mechanics trade

The hypothesis tested whether there is a significant difference in teachers' opinions on the availability of facilities versus the provision and utilization of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State. With 50 teachers in each group, the mean opinion scores were 3.36 for the availability of facilities and 3.30 for the provision and utilization of facilities, with standard deviations of 0.20 for both groups. The calculated t-value was 1.5, which is less than the critical t-value of 1.984 at 48 degrees of freedom and a significance level greater than 0.05. Therefore, the null hypothesis is accepted, indicating that there is no significant difference in the teachers' opinions regarding the level of availability of facilities and the provision and utilization of facilities for teaching motor vehicle mechanics trade in these technical colleges.

Discussion of findings

The findings from research question 1 indicate a high level of agreement among respondents on the availability of facilities for teaching and learning motor vehicle mechanics trade in technical colleges in Ondo State, with a grand mean of 3.36. This suggests that these colleges are well-equipped, which is consistent with Ekpenyong and Nwadiani (2003), who emphasized the significance of adequate facilities in enhancing technical education. However, research question 2 shows there is a notable disparity in the effective utilization of these facilities, with a grand mean of 2.30 indicating room for improvement. This aligns with Ogbuanya and Jimoh (2009), who pointed out that the availability of resources does not necessarily equate to their optimal use, which is essential for achieving educational goals. Research question 3 revealed the factors impacting the provision and utilization of facilities, such as funding, administrative support, timely procurement, student enrollment levels, and infrastructure quality, received high levels of agreement (grand mean of 3.30). These findings highlight the multifaceted challenges in technical education, as identified by Okwelle and Deebom (2016), who stressed the importance of funding and administrative support. Research question 4 indicates the strategies to address these challenges, including increasing funding, regular maintenance, infrastructure upgrades, curriculum alignment, and managing student enrollment, were supported by respondents, with a grand mean of 3.10. This is in line with Okoye and Okwelle (2013), who recommended sustained funding, regular maintenance, and industry-aligned curricula to improve technical education outcomes.

Finally, the hypothesis testing revealed there is no significant difference in teachers' opinions on the availability of facilities

and the provision and utilization of facilities, suggesting a consistent view across these aspects. This finding underscores the importance of addressing both the provision and effective use of educational facilities, as noted by Adeyemi and Adu (2010).

Conclusion

In order for Nigerian education to achieve its objectives, access to quality school facilities continues to be crucial. This is due to its significant impact on the teaching and learning process, which extends beyond the provision of basic services like classrooms, infrastructure, ICT resources, and a physically supportive school atmosphere. They each have distinct responsibilities to play in advancing learning and teaching.

In its design, the national policy on education acknowledged the importance of these fundamental services to the smooth operation of schools. It is noteworthy that these facilities are feasible instruments for an effective teaching and learning process, even if it is unclear whether they are sufficiently provided for in the schools under investigation.

Recommendations

In view of the findings, it was recommended that:

- Facilities should have policies in place that are stable in the event of a change in government. 2. Adequate data should be provided to enable the correct and adequate execution of existing facilities.
- 2. The report suggested that the government step up efforts to enhance system financing and make sure it is completed on time, given that the provision of these amenities is a capital-intensive undertaking.

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