

Management Techniques Needed by Motor Vehicle Mechanic Trade Teachers for Effective Teaching of Practical in Technical Colleges of Niger State

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Abstract

The study was designed to determine the management techniques needed by Motor Vehicle Mechanic works teachers for effective teaching of practical in technical colleges of Niger State. Two research questions and two null hypotheses guided the study. A survey research design was employed for the study. The study was carried out in Niger State, Nigeria. The population for the study consisted of 36 respondents comprising of 30 MVM works teachers and six workshop instructors. A structured questionnaire was used as instrument for data collection. The overall reliability coefficient of the instrument was 0.85 using Cronbach's Alpha statistics technique. Mean was used for answering research questions while t-test statistics was used to analyze the null hypotheses. The study revealed among others that, identifying learning objectives, selection of appropriate instructional techniques, materials, tools, and equipment as planning techniques while arranging tools, equipment, and materials, grouping students, and maintaining classroom organization as organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State. The study recommended among others that, Niger State Science and Technical Schools Board should organize capacity building course to equip teachers with the management techniques needed for effective teaching of MVM works in technical colleges.

Key words: Technical College, Motor Vehicle Mechanic Works and Management Techniques

Technical colleges are secondary institutions where individuals are trained to acquire skills, knowledge and attitudes needed for either self or paid employment. In other words, they are regarded as the principal vocational institutions in Nigeria. These institutions give full vocational training intended to prepare students for entry into the various occupations (Abdulkadir, 2011). The aim of these institutions in Nigeria according to Federal Republic of Nigeria (FRN, 2014) is to impart the necessary skills leading to the production of craftsmen, technicians, and other skilled personnel who will be enterprising and

self-reliant in several trades. The trades offered in technical colleges in Nigeria includes: Painting and Decorating, Furniture Craft and Upholstery Design, Blocklaying, Bricklaying and Concreting, Electrical Installation and Maintenance Works, Welding and Fabrication, Mechanical Engineering Craft Practice, Automobile Air-Conditioning and Refrigeration, Auto-Electricity, and Motor Vehicle Mechanic Works.

Motor Vehicle Mechanics (MVM) works is one of the trade courses offered in technical college level designed to produce competent craftsmen for

Nigerian technological and industrial development. The MVM works is to equip students with the right knowledge, skills and attitude to: test; diagnose service; and repair any fault relating to conventional motor vehicle assembly main units and systems to the manufacturers' specifications (National Board for Technical Education NBTE, 2001). The performance of MVM works students and graduates revealed that, this goal is far from being achieved. Abdulkadir et al. (2019) confirmed that, the knowledge and skill gap among MVM works students and graduates cannot guarantee the achievement of the course goal. In attempt to address the ugly situation, Abdulkadir et al. (2020) recommended the need to improve the utilization of the available resources among MVM works teachers. MVM works teachers are individuals charged with the responsibilities of guiding, instructing and training MVM works students to acquire the needed theoretical and practical knowledge regarding all forms of automobile is motor vehicle mechanic teachers. According to Taylor (2009), the successful attainment of any educational goal depends on the quality of teachers including those teaching MVM works. This implied that, deficiency among teacher is the prime factor for the non-attainment of MVM works goal. Abaḥ (2018) stated that, the manifested poor performance among MVM works students and graduates have lot to do with teachers' inability to manage the available resource for effective teaching. Hence, for effective teaching to attain the goal of MVM works, teachers need to adopt techniques in management.

Management in the context of this

paper entails the strategies for managing human and material resources for the attainment of MVM works goal. Azubuike (2014) defined management as the act of getting people together to accomplish desire goals and objectives using available material resources (tools and equipment). In order to accomplish desire goals and objectives of MVM works, teachers required management techniques. Haruna (2012) noted that, the management techniques required by teachers for effective teaching of MVM works include planning and organizing. Planning is the process of determining in advance what should be done, the means of doing it and how it should be done. The planning techniques for effective teaching include but not limited to: identification of learning objectives, preparation of lesson note, plan the selection of appropriate instructional techniques, materials, tools, equipment, and specification of tasks to achieve the learning objectives (Obi, 2013). These techniques alone cannot guarantee the attainment of the educational goal of MVM works with appropriate organization.

Organization is the process of arranging people and resources available in the best possible way that will enable the attainment of certain stated goal. According to Azubuke (2011), the organizing techniques needed for effective teaching of practical oriented subjects as MVM works include arrangement of tools, equipment, and materials, grouping students, specification of practical areas, and maintain classroom organization among others. In order words, lack of planning

and organizing techniques among teachers is a threat to the attainment of any educational goal such as the goals of MVM works.

The goals MVM works is designed to equip students with the right knowledge, skills and attitude to: test; diagnose service; and repair any fault relating to conventional motor vehicle assembly main units and systems to the manufacturers' specifications. Unfortunately, MVM works students who are expected upon completion of their training programme to have acquired practical skills that will enable them to carryout practical are unable to do so because of the limited competencies possessed by them (Michika 2019). Haruna (2012) attributed this limited competence to inadequate management techniques in teaching among MVM works teachers. The persistence of the situation holds negative effects to the socio-economic status of the country by increasing unemployment rate and crime rates. Thus, this study sought to identify the management techniques needed by MVM works teachers for effective teaching of practical in technical colleges in Niger State, Nigeria.

Aim and Objectives of the Study

The aim of this study was to identify the management techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State; Specifically, the study will seek to achieve the following objectives:

1. Determine the planning techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State
2. Identify the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State

Research questions

1. What are the planning techniques needed by of MVM works teachers for effective teaching of practical in technical colleges of Niger State?
2. What are the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State?

Hypotheses

The following null hypotheses were formulated at .05 level of significant:

- HO₁: There is no significant difference between the responses of MVM teachers and workshop instructor on the planning techniques needed for effective teaching of practical in technical colleges of Niger State.
- HO₂: There is no significant difference between the responses of MVM teachers and workshop instructor on the organizing

techniques needed for effective teaching of practical in technical colleges of Niger State.

Methodology

A survey research design was employed for the study. The study was carried out in Niger State, Nigeria. The population for the study consisted of 36 respondents comprising of 30 MVM works teachers and six workshop instructors from the six technical colleges of Niger State that include: Government Technical College, Eyagi, Bida; Government Technical College, Minna; Government Technical College, New Bussa; Government Technical

College, Kontagora; Mamman Kontagora Technical College, Pandogari; and Suleiman Barau Technical College, Suleja. A structured questionnaire developed by the researchers on five points rating scale of: Very Highly Required, Highly Required, Averagely Required, Slightly Required and Not Required with numeric value of 5, 4, 3, 2, and 1 was used as instrument for data collection. The instrument was validated by three technology education experts. The overall reliability coefficient of the instrument was 0.85 using Cronbach's Apha statistics technique. Mean was used for answering

Table 1: Mean scores of respondents on the planning techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State

S/N	ITEMS	\bar{X}_1	\bar{X}_2	\bar{X}_A	Remark
1.	Identification of learning objectives	3.89	4.00	3.93	Required
2.	Prepare lesson note	4.00	4.00	4.00	Required
3.	Prepare of lesson plan	4.22	4.00	4.14	Required
4.	Identify the appropriate instructional techniques to be used to achieve learning objective	4.00	3.80	3.93	Required
5.	Identify the appropriate materials required to achieve learning objectives	3.78	4.20	3.93	Required
6.	Ascertain the appropriate tools required to achieve learning objectives	3.89	4.01	3.94	Required
7.	Identify the appropriate equipment required to achieve learning objectives	3.89	4.02	3.95	Required
8.	Identify the appropriate tasks required to achieve learning objectives	4.33	4.00	4.21	Required
9.	Plan for facilities for coping with fire hazards	3.88	3.80	3.85	Required
10.	Plan on the first aid facilities	3.78	4.20	3.93	Required
	Grand Mean	3.88	3.94	3.90	Required

Key: \bar{X}_1 = Mean of Teacher, \bar{X}_2 = Mean of Workshop Instructors, \bar{X}_A = Mean Average of

Teachers and Workshop Instructors

Table 1 revealed that, all the 10 items on planning techniques needed by teachers for effective teaching had mean average scores between 3.85 and 4.21. This implied that, the respondents agreed with the 10 items to be the planning techniques needed by MVM works teachers for effective teaching of

practical in technical colleges of Niger State.

Research Question 2

What are the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State?

Table 2: Mean scores of respondents on the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State

S/N	ITEMS	\bar{X}_1	\bar{X}_2	\bar{X}_A	Remark
1.	Arrange of tools required for instruction	3.93	3.82	3.88	Required
2.	Arrange of materials required for instruction	3.87	3.82	3.84	Required
3.	Arrange of equipment required for instruction	3.93	3.88	3.91	Required
4.	Group students in conformity with learning resources available	4.07	3.82	3.94	Required
5.	Specify working or practical areas	3.87	3.71	3.78	Required
6.	Maintain classroom organization	3.87	3.88	3.88	Required
7.	Arrange firefighting facilities in accessible position	3.20	3.24	3.22	Required
8.	Ensure adequate spacing for practical tasks	3.82	3.74	3.78	Required
	Grand Mean	3.82	3.74	3.78	Required

Table 2 revealed that, all the eight items on organizing techniques needed by teachers for effective teaching had mean average scores between 3.85 and 4.21. This implied that, the respondents agreed with the eight items to be the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State.

Hypothesis One

There is no significant difference between the responses of MVM teachers and workshop instructor on the planning techniques needed for effective teaching of practical in technical colleges of Niger State.

Table 3: t-test analysis for the test of significant difference between the mean responses of MVM teachers and workshop instructor on the planning techniques needed for effective teaching of practical in technical colleges of Niger State

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.084	.773	.428	34	.671	.07451	.17396	-.28076	.42978
Equal variances not assumed			.429	29.730	.671*	.07451	.17358	-.28012	.42913

Table 3 showed that, the significant (2-tailed) value of t-test for equality of means with variance not assumed was 0.671 which is greater than 0.05 which was the stated level of significance. This indicated that, there is no statistical significant difference between the mean responses of MVM teachers and workshop instructor on the planning techniques needed for effective teaching of practical in technical colleges of

Niger State. Therefore, the null hypothesis was not rejected.

Hypothesis Two

There is no significant difference between the responses of MVM teachers and workshop instructor on the organizing techniques needed for effective teaching of practical in technical colleges of Niger State.

	Levene's Test for Equality of Variances		Independent Samples Test t-test for Equality of Means						
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.165	.289	.601	34	.552	.06446	.10725	-.15458	.28350
Equal variances not assumed			.618	27.289	.542*	.06446	.10429	-.14943	.27835

Table 4 showed that, the significant (2-tailed) value of t-test for equality of means with variance not assumed was 0.542 which is greater than 0.05 which was the stated level of significance. This indicated that, there is no statistical significant difference between the mean responses of MVM teachers and workshop instructor on the organizing techniques needed for effective teaching of practical in technical colleges of

Niger State. Therefore, the null hypothesis was not rejected.

Findings

1. Identifying learning objectives, preparation of lesson note, and plan, selection of appropriate instructional techniques, materials, tools, equipment, and specification of tasks to achieve the learning objectives were found to be the planning techniques

needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State.

2. Arranging tools, equipment, and materials, grouping students, specifying practical areas, maintaining classroom organization, and ensuring adequate spacing for practical tasks were found to be the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State.
3. There is no significant difference between the responses of MVM teachers and workshop instructor on the planning techniques needed for effective teaching of practical in technical colleges of Niger State.
4. There is no significant difference between the responses of MVM teachers and workshop instructor on the organizing techniques needed for effective teaching of practical in technical colleges of Niger State.

Discussion of Findings

Findings on the planning techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State revealed identifying learning objectives, preparation of lesson note and plan, selection of appropriate instructional techniques, materials, tools, equipment, and specification of tasks to achieve the learning objectives. The finding concord with the findings of Obi (2013) that revealed, effective lesson planning, and selection of appropriate resources as techniques for the attainment of educational goal. This implied that, the identified planning techniques are capable of aiding teachers in the attainment of MVM works goals.

However, the test for significant difference between the responses of MVM teachers and workshop instructor, on the planning techniques needed for effective teaching of practical in

technical colleges of Niger State revealed not statistical significant. This indicated that, both MVM teachers and workshop instructor holds similar opinion on the planning techniques needed for effective teaching. This finding is similar with the findings of Abah (2018) that revealed no significant difference between the mean responses of administrators and teachers on the administrative skills for effective school management.

Findings on the organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State revealed arranging tools, equipment, and materials, grouping students, specifying practical areas, maintaining classroom organization, and ensuring adequate spacing for practical tasks. The finding shared similarities with the view of Azubuke (2011) that stated techniques in arranging people and resources available in the best possible way that will enable the attainment of certain stated goal. The implication of the finding is that, the identified organizing techniques are capable of aiding teachers in the attainment of MVM works goals. Furthermore, the test for significant difference between the responses of MVM teachers and workshop instructor on the organizing techniques needed for effective teaching of practical in technical colleges of Niger State revealed not statistical significant. This entailed that, there was no difference in the opinion of MVM teachers and workshop instructor on the organizing techniques needed for effective teaching. The findings is in harmony with the findings of Adamu (2015) that revealed, no significant difference between the mean responses of teachers and technicians on the equipment and tools needed for effective teaching of MVM works in technical colleges.

Conclusion

The study provided insights on the management techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State. Findings from the study

revealed the planning and organizing techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State. Though, the study was delimited to the perception of MVM works teachers and workshop instructors on planning and organizing techniques for effective teaching. This implied that, for effective teaching of MVM works in technical colleges of Niger State is achievable if teachers are equipped with planning and organizing techniques.

Recommendations

On the basis of the findings from the study, the following recommendations were proffered:

1. Niger State Science and Technical Schools Board should organize capacity building course to equip MVM works teachers with the management techniques needed for effective teaching of practical in technical colleges.
2. Technical college administrators should ensure the adoption of the identified management techniques needed by MVM works teachers for effective teaching of practical in technical colleges of Niger State.

References

Abah, A. (2018) Evaluation of the Competencies possessed by lecturers of Automobile technology in tertiary institution in North Western States of Nigeria. *Unpublished M.Ed. Thesis*, Department of Vocational Teacher Education, University of Nigeria Nsukka

Abdulkadir Mohammed, A. M. Idirs, A.S. Oladeji, Mustapha Aliyu and H. Y. Michicha (2019). Emerging technology competencies needed by motor vehicle mechanics in braking and suspension systems maintenance for establishing automobile enterprises. *Annals*

- of Technology Practitioners Association of Nigeria. (Formerly Journal of Nigerian Association of Teachers of Technology)*, 2(4) 86-93
- Abdulkadir, M; Mustapha, A; Hamidu, Y. M; Alawode, O. D & Nma, T. N (2020). Constraints of motor vehicle mechanic students in entrepreneurship development in technical colleges of Niger State. *Al-hikmah Journal of Education. Al-Ihkamah University Ilorin, Kwara State*, 7(1) 13-21.
- Adamu M. K. (2015). Capacity building needs of automobile technology lecturers in colleges of education (technical) in North-east Nigeria. *Unpublished S(M.Ed. industrial education) thesis*, Department of Vocational Teacher Education, University of Nigeria, Nsukka.
- Ayonmike, S.C. (2010). Skill training in Nigerian technical colleges: Benefits and challenges. *Journal of qualitative education*, 6(1), 75-86
- Azubuke, R. N. (2011). Non-human Resource Management in Vocational Education: problem and issues. *Nigerian Vocational Journal*, 6(2), 90-96.
- Federal Government of Nigeria (2014). *National Policy on Education*, Lagos: Nigerian research and development council press.
- Haruna, U.B. (2012). Competency Needs of Basic technology Teachers in Nigeria. A paper presented at conference organized by School of Education, Federal College of Education Gombe, 9th - 11th October.
- Obi E. (2013). *Educational Management Theory and Practice*. Enugu: JAMOE Enterprise.
- Odigiri, A. M. & Ogwo B. A. (2013). Integration of new technological innovation in automobile into curriculum for Nigerian technical college programme: *International Journal of Vocational and Technical*

Education, 2(5), 89-94

Taylor, G. (2009). Nigerian technological growth hinges on 6-3-3-4 education today. Yaba-lagos, NERDC press.

Tinch, C. R. & Crukitton, J. R. (2011). Curriculum development and technical education. Retrived on 24th may 2021 from <http://www.file://curriculumdevelopment.html>