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ASSESSMENT OF FUNCTIONALITY AND UTILIZATION OF FACILITIES FOR TEACHING AND LEARNING MOTOR VEHICLE MECHANICS WORK TRADE IN TECHNICAL COLLEGES OF GOMBE STATE, NIGERIA

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Abstract

The study assessed the functionality and utilization of facilities for teaching and learning motor vehicle mechanics work trade in technical colleges of Gombe state, Nigeria. It was guided by two objectives with two research questions and null hypotheses. Related literature was reviewed under different subheadings. The study employed a descriptive survey research design with a population of 35 MVMW students, 25 MVMW teachers, and 11 MVMW workshop attendants. There was no sampling because the population was manageable. The instrument was trial tested and the reliability coefficient of 0.87 was obtained using Cronbach alpha statistics. The research questions were analysed using mean and standard deviation while analysis of variance was used for testing the two (2) null hypotheses at 0.05 level of precision. The findings among others revealed that; The MVMW instructional facilities are moderately functional in Government Science and Technical Colleges in Gombe state with a grand mean of 2.64; The MVMW instructional facilities are to a larger extent not utilized in Government Science and Technical Colleges of Gombe state with a grand mean of 2.48, there was no significant difference among the mean responses of MVMW teachers' workshop attendants and MVMW students on the level of utilization on MVMW instructional facilities in Government Science and Technical Colleges in Gombe State a probability value of 0.84. Based on the findings, the study recommended that; Government should ensure the functionality of all the instructional facilities necessary for teaching and learning of MVMW trade in Government Science and technical colleges of Gombe state; Government should ensure all the instructional facilities for teaching and learning of MVMW trade are fully utilized in Government Science and technical colleges of Gombe state. Based on the finding the study concluded that MVMW facilities are not functional and utilized in GSTCs of Gombe state.

Keywords: Assessment, Functionality, Utilization and MVMW Facilities

Introduction

Technical Colleges are the post junior secondary school level which produces craftsmen and master craftsmen. The courses lead to the award of National Business Certificate (NBC) and National Technical Certificate (NTC). Both at Craft level, Advance National Business Certificate (ANBC) level, Advance National Technical Certificate (ANTC) level and at Master Craft level. Technical colleges according to Federal Ministration Education (2013) are sometime called trade centre. Technical colleges train craftsmen in auto mechanics, plumbing carpentry, and joinery, cabinet making, painting and decorating, fabrication and welding, electrical installation, radio and TV repair, brick/blocklaying and concreting among others. On completion of the course of training students obtained work in industries or establish business on their own (NBTE, 2011).

It is hope that if the NBTE curriculum on Motor Vehicle Mechanics Work MVMW trade is well implemented, it will produce a well trained technical manpower at all levels (operatives, craftsmen and master craftsmen) and in various technical field in technical colleges (Garba, 2012). Federal Republic of Nigeria (2013) stated the objective of technical colleges as follows:

i. To acquire basic skills and knowledge in preparation for further studies.
ii. To acquire knowledge and practical's skill necessary for self-reliance and gainful employment.
iii. To acquire basic understanding for functional living in the society.
iv. To inculcate safe working habit.

Motor Vehicle Mechanics Work (MVMW) is one of the technical subjects offered in most technical colleges in Nigeria. To ensure the realization of the MVMW trade objectives, the curriculum is made of the following components namely; general education subjects, trade theory related studies and workshop practices and Technical Drawing. Motor vehicle mechanics work (MVMW) is one of the units that constituted the field of vocational technical education. At the technical college level, it is offered as craft trades. It includes module such as workshop safety, equipment and machine maintenance, engine repairs, automobile engineering practice, mechanics engineering craft practice, engine repairs and instrument mechanics work (NBTE, 2014).

Motor Vehicle Mechanics trade is one of the Technical Education programmes which involves the acquisition of scientific knowledge in design, selection of materials, construction, operation and maintenance of motor vehicles. According to National Board for Technical Education (NBTE, 2011) Motor vehicle mechanics trade students are expected to, upon completion of this training, be able to: test, diagnose, service and repair any fault on conventional motor vehicle assemble main units and systems to the manufacturers' specifications. Abdulkadir (2011) explained that the objectives of the practical aspect of Motor Vehicle Mechanics at the technical college include the ability of motor vehicle craft trainees to be able to: test, rebuild and replace injector nozzles, dismantle and reassemble carburetor following appropriate procedure, replace major emission control components, diagnose all problems relating to steering, braking and suspension systems, among others. However, the attainment of these goals is largely dependent on the utilization of available tools in the teaching and learning of motor vehicle mechanics trade.

Teaching has been defined by Uwameiye (2016), as engagement with learners to enable their understanding and application of knowledge, concepts and processes to be effective. It includes teaching material design, content selection, delivery, assessment and reflection. Similarly, Mele (2018) also defined teaching as an act of assisting or supporting the learner to make sense of what is being learnt. To teach is to engage students in learning; thus teaching consists of getting students involved in the active construction of knowledge. A teacher requires not only the knowledge of subject matter, but knowledge of how students learn and how to transform them into active learning (National Academy of Sciences, 2018).

Screswell (2012) sees learning as the activity or process of gaining knowledge or skill by studying, practicing, being taught, or experienced (Merriam-Webster dictionary 1989). Learning is about what students do, not about that teachers do. Learning is a process by which an organisms behaviour is modified or changed as a result of contact with experiences in the environment (Mele, 2018). When learners are exposed to learning task they experience change in character, understanding, or knowledge.

Facilities can be defined as the entire school plant which school administrators, teachers and students harness, allocate and utilize for the smooth and efficient management of any educational institution, for the main objective of

bringing about effective and purposeful teaching and learning experiences (Asiyai, 2012), Tadesse (2014) defined Instructional facilities as classrooms, seminar rooms, instructional laboratories, computer laboratories, libraries and other spaces used principally for the purpose of delivering formal instruction to students through teaching to be assessed

Dawasa (2015), define assessment as the act of judging the amount of learning that took place as a result of learning and teaching. According to Poripo (2012) assessment is the systematic determination of merit, worth and significance of a programme. This means that, assessment provides objective means of monitoring the progress of an individual in a programme (Poripo, 2012). Therefore for this research assessment is a process of ascertaining the state of facilities whether it is available for use or in good condition for effective teaching and learning of motor vehicle Mechanics work. Available resources that are required for the enhancement of the teaching-learning process could be termed educational or teaching-learning resources. In this study, the specific teaching-learning resources for technical skills acquisition include: Lecture rooms, workshops, workshops personnel, instructional materials, ICT gargets, electricity/gas, consumables and instructional materials. Meaningful training cannot be possible without the availability of these basic teaching-learning resources to stimulate the curriculum contents and assist students realize the objectives of such programmes. Learning resources consist of all resources used to meet educational need or facilitates teaching-learning process. Nwadiani and Ugolo (2012) assert a positive significant of availability of equipment in teaching and learning. Many Technical colleges now face the problem of inadequate and obsolete training equipment especially for science and technology programmes. They also lack current standard levels of precision and operate far below current industrial and training standard. Technical colleges can only operate satisfactorily with adequate infrastructure such as electricity, water, gas, communication, transportation and others.

Amadi, Chiorlu and Obed (2016) stated that facilities include; tools, equipment and machines which aids, stimulate and motivate learning as well as simplify the process of classroom teaching. Amadi, Chiorlu and Obed further classified facilities\resources into two, human and material resources. Human resources according to Dawasa (2015) are those personnel that aids or assist in imparting knowledge and skills to the learner, while material resources are those things that help the teachers to take the world into the classroom, thus making remote an abstract idea concrete and immediate to the learners, (Nwakaego, 2015). Therefore, teaching facilities are some of the most effective devices, which both teachers and students can use to enhance the quality of teaching. This equipment includes all form of information carriers that can be used for teaching and learning activities. They include: building, workshop, tools and equipment (Adamu, 2018).

Statement of the Problem

There was a concern by the researchers, parents and the general public over the low performance of Technical College Graduates, most especially those of MVMW who cannot cope with the world of work. The performance of students in NABTEB (2017) is not encouraging, see Appendix VI. The goal of MVMW in technical colleges in Nigeria according to Momo (2012), is to produce skilled craftsmen with good knowledge of working principles of automobile and the techniques and safety practices involved in automobile work maintenance. The overall successes of technical college students may depend largely on effective implementation of the curriculum and appropriateness of instructional facilities, which are determinant of curriculum implementation. NABTEB chief examiner 2017 observed that the inability of the graduates of MVMW students at the Technical colleges to perform the skills in their trade, to be self-employed and the organizations' interested in their services to retain them may be lack of utilization of teaching facilities by teachers or not interested in

practical activities. This situation is not different in Gombe state in term of student's performance particularly motor vehicle mechanics work students.

Motor vehicle mechanics work students' poor performance could be associated to a number of factors, among which may be attributed to inadequate functional and utilization of teaching learning facilities, inability of the student to identify tool for specific work. This is in line with the National Technical and Business Examination Board (NABTEB, 2017). According to chief examiners report of May/June 2014-2018 NABTEB Examination observed that the poor academic performance of motor vehicle mechanics work students is not encouraging. This may be attributed to poor grammatical expression, poor drawing and sketching skills, inability to relate question to practical skills, most disturbing is the none availability and lack of use of appropriate facilities for teaching and learning processes employed by teachers. However, this may call for extensive use of modern teaching method and appropriate facilities that would expose students to effective reading habits, drawing skills, and practical exercise in the workshop to enhance their ability to comprehend, retain and apply basic concepts in solving problem (Segun, 2019).

This unsatisfactory situation could disrupt the economy, industrial, technological and educational growth of a nation in achieving the main goal of technical education, which is to be self-reliance is not in view. The foregoing therefore underscores the need to assess the availability, adequacy and utilization levels of facilities for teaching and learning of motor vehicle mechanics work, (Manabete and Makinde, 2016; Ingold, 2011; Olaitan, 2014; and Adamu, 2015).

Purpose of the study

The main purpose of the study is to assess the functionality and utilization of facilities for teaching and learning of MVMW in technical colleges of Gombe State. Specifically, the study:

1. Determined the level of functionality of the instructional facilities for teaching and learning of MVMW in Government and Science technical college of Gombe state.
2. Determined the level of utilization of instructional facilities for teaching and learning of MVMW in technical colleges of Gombe State.

Research Questions

The following research questions guided the study.

1. What is the level of functionality of the instructional facilities for teaching and learning of MVMW in technical college of Gombe state?
2. What is the level of utilization of the instructional facilities for teaching and learning of MVMW in technical colleges of Gombe State?

Hypotheses

The following null hypotheses guided the study.

Ho_1: There is no significant difference among the mean responses teachers, workshop attendants and students on the utilization of facilities for teaching and learning of MVMW in technical college of Gombe state.

Ho_2: There is no significant difference among the mean responses of teachers, workshop attendants and students on the functionality of facilities for teaching and learning of MVMW in technical college of Gombe State.

Methodology

Descriptive survey research design was adopted for this study. This research design is considered appropriate because no variable was manipulated in this study. This design is therefore considered appropriate for this study because, it elicits responses and information on the condition of facilities for Teaching and Learning of Motor Vehicle Mechanics Work (MVMW) Trade in Government Science Technical College of Gombe State.

The area of study is Gombe state which has eleven (11) local Government areas. It is sharing border with Adamawa and Taraba by the south, Bauchi by the west, Borno and Yobe state by the east. The global location of Gombe state is between longitude 12^0 and $14^{"}$ East of the Greenwich meridian and between latitude 8^0 and $12^{"}$ north of the equator Gombe state Nigerian Metrological Agency (NMA).

The total population of the study was 71 respondents comprising of 11 MVMW workshop Attendants, 25 MVMW Teachers and 35 MVMW Students of Government Science Technical College from the eight (8) Government Science Technical colleges in the eleven (11) Local Government Areas of Gombe State. There was no sample and sampling techniques because the population was manageable.

The instrument for the data collection was based on structured questionnaire developed by the researcher. The research question 1 was based on five point rating scale such as; Very Highly Functional- VHF=5, Highly Functional-F=4, Moderately Functional-MF=3, Slightly Functional-SF=2 and Very Slightly Functional-VSF=1, while question 2 was also based on five point rating scale on Very Highly Utilized- VHU=5, Highly Utilized-HU=4, Moderately Utilized-MU=3, Slightly Utilized- SU=2 and Very Slightly Utilized-VSU=1.

The instrument was validated by two experts from the Department of Technology Education, Modibbo Adama University, Yola. The observations and correction were effected before production of the final copy of the instrument.

The reliability of the instrument was determined through trial testing the it on MVMW teachers, workshop Attendants and students of Government Science and Technical Colleges in Adamawa State. Cronbach Alpha reliability statistics was used and the reliability coefficient of 0.87 was obtained for the instrument with the help of statistical package of social science (SPSS) version 23.

The researcher administered the questionnaire directly with the help of two Research Assistants to the respondents. One week was given to the respondents within which they filled questionnaire and it was retrieved back the same way it was given out.

The data collected for research question 1 & 2 were analysed using mean and standard deviation while Analysis of Variance (ANOVA) was used to test the hypotheses at 0.05 level of significance with the help of Statistical Package for Social Science (SPSS) software version 23. In testing the null hypothesis, if the calculated p-value is less than or equal to the level of significant, the null hypothesis was rejected and if otherwise the null hypothesis was accepted.

Results

Research Question 1: What is the level of functionality of the instructional facilities for teaching and learning of MVMW in technical college of Gombe state?

Table 1: Mean and Standard Deviation of MVMW Teachers, Workshop Attendants and MVMW Students on the Level of Functionality of Instructional Facilities for Teaching and Learning of MVMW in Government Science Technical Colleges in Gombe State

S/N	Items	$\bar{x}_1$ n = 25,	$\bar{x}_2$ n =11,	$\bar{x}_3$ n = 35,	$\bar{x}_{GT}$ n=71	SD_{GT}	Remark
1	Toolboxes	1.92	3.45	1.66	2.03	1.37	SF
2	Ball pin hammer	2.04	3.64	2.11	2.32	1.50	SF
3	Hacksaws with extra blades	1.72	2.36	2.06	1.99	1.26	SF
4	300mm engineer rule socket spanners sets, with extension	2.96	3.09	2.63	2.82	1.52	MF
5	(6-32) open and flat spanners	2.40	3.09	2.54	2.58	1.54	MF
6	Ring spanners (6-32mm)	2.36	2.64	2.34	2.39	1.48	SF
7	Energy stone/block cloth	2.80	3.27	2.49	2.72	1.62	MF
8	Plug spanners	2.28	3.00	2.43	2.46	1.38	SF
9	Magnet spanners	2.48	2.73	2.46	2.51	1.46	MF
10	Allen keys	2.64	3.64	2.54	2.75	1.52	MF
11	Feeler gauges	2.24	3.45	2.37	2.49	1.52	SF
12	Oil cans	2.40	3.09	2.60	2.61	1.54	MF
13	Grease guns	2.72	3.45	2.54	2.75	1.54	MF
14	Spark plug files	2.76	3.27	2.77	2.85	1.53	MF
15	Combination pliers	2.40	3.45	2.60	2.66	1.36	MF
16	Long nose pliers	2.20	4.00	2.14	2.45	1.57	SF
17	Wire cutter	2.48	3.45	2.57	2.68	1.52	MF
18	Tire pressure gauges	2.08	3.91	1.89	2.27	1.40	SF
19	Electric Hand Drill	2.40	2.36	2.23	2.31	1.47	SF
20	Drill bits	2.32	2.27	2.54	2.42	1.57	SF
21	Set of stock and dies - UNC, UNF, and Metric	2.16	2.82	2.34	2.35	1.39	SF
22	Taps and wrenches - UNC, UNF, and Metric	2.68	2.91	2.74	2.75	1.65	MF
23	Thread file	2.80	2.82	2.66	2.73	1.50	MF
24	Roller type thread restorer	2.64	2.36	2.57	2.56	1.56	MF
25	Screw (stud) extractor set	2.52	3.09	2.83	2.76	1.59	MF
26	Vernier caliper	2.44	2.64	2.86	2.68	1.49	MF
27	Hand gloves/apron	1.76	2.55	2.37	2.18	1.50	SF
28	Surface plates	2.84	2.91	2.74	2.80	1.60	MF
29	Vee blocks	3.20	1.82	3.11	2.94	3.58	MF
30	Micrometer 0.25mm, 25-50mm, 50-75mm internal and external	2.08	2.45	2.54	2.37	1.52	SF
31	Dial gauge indicator with magnetic stand	2.68	1.91	2.66	2.55	1.65	MF
32	Grinding machines with assorted wheels	2.80	1.82	2.94	2.72	1.73	MF
33	A bench grinder with wheels	2.84	3.00	2.91	2.90	1.66	MF
34	Workshop surface gauges	2.68	2.82	2.74	2.73	1.62	MF
35	Valve grinding machine	2.32	2.73	2.31	2.38	1.46	SF
36	Blow lamps	2.08	2.27	2.46	2.30	1.31	SF
37	Soldering iron	2.00	2.36	2.17	2.14	1.27	SF
38	Compressor (3phase motor-driven type complete with a spray gun, grease, hose)	1.88	1.82	1.94	1.90	1.29	SF
39	Wheel balance (rim 13-15)	1.84	2.27	2.09	2.03	1.28	SF
40	Portable tire inflator	2.24	2.73	2.49	2.44	1.40	SF
41	Weld master Vulcanizer	2.48	2.00	2.57	2.45	1.42	SF
42	Airline gauge	2.32	2.55	2.54	2.46	1.49	SF

43	Steam cleaner (complete) oil-fired or electric	2.48	2.64	2.66	2.59	1.58	MF
44	High-pressure washer	2.52	3.00	2.49	2.58	1.50	MF
45	Tire changer complete with bead breaker	2.24	3.36	2.06	2.32	1.42	SF
46	Various sizes of wheel braces	1.84	2.82	1.80	1.97	1.11	SF
47	Tyre repair kit comprising rasp, scissors, tire knife, sticher, wire brush	2.20	2.18	2.14	2.17	1.29	SF
48	Service station set of tool kit plus special varnishes for removal of oil filter	2.24	1.91	2.14	2.14	1.26	SF
49	Pipe wrench, clamp or vice	1.88	2.09	1.94	1.94	1.29	SF
50	Wheel alignment gauge	3.00	1.64	2.77	2.68	1.65	MF
51	Flat spanners (long and short)	3.56	2.45	3.14	3.18	3.59	MF
52	Clutch alignment gauge	2.40	2.64	2.29	2.38	1.42	SF
53	Adjustable wrench	3.20	2.09	2.97	2.92	1.47	MF
54	Injector repair machine	2.60	2.36	2.71	2.62	1.52	MF
55	Injector needle service kit	3.04	2.91	2.77	2.89	2.12	MF
56	Pullers, different sizes	3.04	2.64	2.86	2.89	1.63	MF
57	Spark plug tester	2.96	1.91	2.71	2.68	1.50	MF
58	Workbench with vices	2.48	3.00	2.37	2.51	1.51	MF
59	Portable engine hoist	3.48	2.73	2.71	2.99	1.53	MF
60	Diesel engine phasing and calibration Machine	3.20	2.18	3.00	2.94	1.48	MF
61	Electrical test bench	2.60	3.45	2.60	2.73	1.51	MF
62	Cylinder boring machine with accessories and assorted tools	3.16	3.64	2.89	3.10	1.56	MF
63	Honing machine with accessories and assorted cutters	2.68	2.36	2.69	2.63	1.49	MF
64	Bottle jack (hydraulic) light and heavy	2.68	3.09	2.49	2.65	1.48	MF
65	Vehicle tire	3.08	3.09	2.74	2.92	1.52	MF
66	Trolley jacks	3.24	2.64	3.11	3.08	1.59	MF
67	Motor scope (engine analyzer)	3.60	3.27	3.26	3.38	1.53	MF
68	Auto Electrical system instructional Chassis	3.08	3.00	2.97	3.01	1.43	MF
69	Armature growler	3.12	2.73	3.00	3.00	1.65	MF
70	Hydraulic nipple forming tool	3.28	3.64	3.23	3.31	1.47	MF
71	Timing light	4.08	3.44	3.66	3.77	1.45	HF
72	Inspection pits	3.60	3.09	3.34	3.39	1.58	MF
73	Compression gauge	3.32	3.45	3.37	3.37	1.61	MF
74	Valve spring compression kit	2.76	3.27	2.57	2.75	1.50	MF
75	Coil spring compressor (for suspension)	3.48	3.45	3.29	3.38	1.52	MF
76	Torque wrench pre-set type	2.28	4.00	2.11	2.46	1.45	SF
77	Torque wrench dial type	2.12	3.45	2.06	2.30	1.30	SF
78	Carburetor service kit	1.92	3.91	2.26	2.39	1.53	SF
79	Piston ring compressor	2.16	2.91	2.43	2.41	1.41	SF
80	Axle stands	2.92	3.45	2.83	2.96	1.63	MF
81	Diagnostic testing machine (exhaust gas analyzer)	3.08	3.36	2.77	2.97	1.41	MF
82	Fire extinguisher	2.68	4.27	2.66	2.92	1.63	MF
83	Sand buckets	2.80	3.00	2.51	2.69	1.56	MF
84	Water buckets	3.00	3.73	2.54	2.89	1.35	MF
85	Hoist and box	2.60	2.73	2.69	2.66	1.45	MF
86	First aid box	2.68	4.00	2.40	2.75	1.55	MF

87	Workshop overalls	2.44	2.09	2.37	2.35	1.39	SF
88	Complete vehicle engine (petrol)	2.64	2.27	2.63	2.58	1.49	MF
89	Complete vehicle engine (diesel)	2.76	1.73	2.89	2.66	1.55	MF
90	Live vehicle	2.92	2.73	3.11	1.99	1.40	SF
91	Camshaft grinding machine	1.92	3.64	1.66	2.03	1.37	SF
	Grand Total	**2.61**	**2.88**	**2.58**	**2.64**	**1.54**	MF

Key: VHF=Very Highly Functional, HF= Highly Functional, MF = Moderately Functional, SF= Slightly Functional, VSF = Very Slightly Functional

The result in table 1 showed the Mean and Standard Deviation of MVMW Teachers, Workshop Attendants and MVMW Students on the Level of functionality of instructional resources in Government Science and Technical Colleges of Gombe State. Item 1 - 3, 6, 8, 11, 16.18 – 21, 27, 30, 35 - 42, 45 - 49, 53, 76 - 79, 89 and 91 with the mean rating between 1.50 and 2.49 are slightly functional in Government Science and Technical Colleges of Gombe State. However, Item 4 - 5, 7, 9 - 10, 12 - 15, 17, 22 – 26, 28 - 29, 31 - 34, 43, 50 - 51, 53 - 75, 80, 86, 88 and 91 with a mean rating between 2.50 and 3.49 are moderately functional in Government Science and Technical Colleges of Gombe State except 3.44 with a mean rating 3.77 which indicate the instructional facility in that item is highly functional. A grand mean of 2.64 is recorded indicating that the MVMW instructional facilities are moderately functional in Government Science and Technical Colleges of Gombe State.

Research Question 2: What is the level of utilization of the instructional facilities for teaching and learning of MVMW in technical colleges of Gombe State?

Table 2: Mean and Standard Deviation of MVMW Teachers, Workshop Attendants and MVMW Students on the Level of Utilization of Instructional Facilities in Teaching and Learning of MVMW in Government Science Technical Colleges in Gombe State

S/N	Items	$\bar{X}_1$ n =25,	$\bar{X}_2$ n=11,	$\bar{X}_3$ n =35,	$\bar{x}_{GT}$ n=71	SD_{GT}	Remark
92	Toolboxes	1.76	2.36	1.89	2.00	1.35	SU
93	Ball pin hammer	1.92	2.09	2.43	2.15	1.47	SU
94	Hacksaws with extra blades	1.96	1.91	2.43	2.10	1.34	SU
95	300mm engineer rule socket spanners sets, with extension	3.00	1.73	2.97	2.57	1.50	MU
96	(6-32) open and flat spanners	3.08	2.82	3.09	3.00	1.49	MU
97	Ring spanners (6-32mm)	2.60	2.64	2.89	2.71	1.55	MU
98	Energy stone/block cloth	3.12	2.64	3.09	2.95	1.51	MU
99	Plug spanners	2.44	2.36	2.77	2.52	1.56	MU
100	Magnet spanners	2.72	2.36	3.03	2.70	1.54	MU
101	Allen keys	2.68	2.27	2.54	2.50	1.45	MU
102	Feeler gauges	2.36	2.82	2.54	2.57	1.56	MU
103	Oil cans	2.36	2.91	2.43	2.57	1.52	MU
104	Grease guns	2.84	2.82	2.57	2.74	1.62	MU
105	Spark plug files	3.00	2.36	2.77	2.71	1.58	MU
106	Combination pliers	2.52	3.09	2.37	2.66	1.48	MU
107	Long nose pliers	2.64	2.64	2.43	2.57	1.59	MU
108	Wire cutter	2.60	2.55	2.49	2.55	1.50	MU
109	Tire pressure gauges	2.00	2.91	1.80	2.24	1.31	SU
110	Electric Hand Drill	2.84	1.82	2.54	2.40	1.54	SU
111	Drill bits	2.32	2.45	2.40	2.39	1.54	SU
112	Set of stock and dies - UNC, UNF, and Metric	2.24	1.91	2.23	2.13	1.37	SU

113	Taps and wrenches - UNC, UNF, and Metric	2.76	1.82	2.69	2.42	1.64	SU
114	Thread file	2.92	3.00	2.74	2.89	1.56	MU
115	Roller type thread restorer	2.68	2.82	2.54	2.68	1.50	MU
116	Screw (stud) extractor set	2.72	2.73	2.66	2.70	1.53	MU
117	Vernier caliper	2.60	2.27	2.63	2.50	1.48	MU
118	Hand gloves/apron	1.88	2.36	2.03	2.09	1.33	SU
119	Surface plates	2.48	1.82	2.40	2.23	1.44	SU
120	Vee blocks	2.36	2.27	2.94	2.52	1.46	MU
121	Micrometer 0.25mm, 25-50mm, 50-75mm internal and external	1.84	2.73	1.91	2.16	1.27	NU
122	Dial gauge indicator with magnetic stand	2.80	2.00	2.74	2.51	1.57	MU
123	Grinding machines with assorted wheels	3.04	2.55	2.69	2.76	1.61	MU
124	A bench grinder with wheels	2.60	2.64	2.57	2.60	1.62	MU
125	Workshop surface gauges	2.64	3.00	2.69	2.78	1.62	MU
126	Valve grinding machine	2.48	3.36	2.29	2.71	1.54	MU
127	Blow lamps	2.16	2.82	2.06	2.35	1.25	SU
128	Soldering iron	2.40	2.18	2.49	2.36	1.41	SU
129	Compressor (3phase motor-driven type complete with a spray gun, grease, hose)	1.96	1.91	2.20	2.02	1.36	SU
130	Wheel balance (rim 13-15)	2.08	2.09	2.29	2.15	1.39	SU
131	Portable tire inflator	2.44	1.64	2.43	2.17	1.36	SU
132	Weld master Vulcanizer	2.44	2.45	2.46	2.45	1.44	SU
133	Airline gauge	2.84	2.64	2.03	2.50	1.43	MU
134	Steam cleaner (complete) oil-fired or electric	2.20	2.09	2.26	2.18	1.34	SU
135	High-pressure washer	2.96	2.36	3.11	2.81	1.54	MU
136	Tire changer complete with bead breaker	2.64	2.91	2.69	2.75	1.44	MU
137	Various sizes of wheel braces	2.08	2.64	2.46	2.39	1.29	SU
138	Tyre repair kit comprising rasp, scissors, tire knife, sticher, wire brush	2.52	1.91	2.74	2.39	1.38	SU
139	Service station set of tool kit plus special varnishes for removal of oil filter	2.48	2.64	3.06	2.73	1.47	SU
140	Pipe wrench, clamp or vice	2.16	2.36	2.51	2.34	1.52	SU
141	Wheel alignment gauge	2.92	2.36	3.00	2.76	1.57	MU
142	Flat spanners (long and short)	3.80	2.27	3.63	3.23	3.53	SU
143	Clutch alignment gauge	2.44	2.82	2.89	2.72	1.60	MU
144	Adjustable wrench	3.24	2.91	3.31	3.15	1.53	MU
145	Injector repair machine	2.68	2.82	3.09	2.86	1.59	MU
146	Injector needle service kit	3.20	2.36	3.54	3.03	2.21	MU
147	Pullers, different sizes	2.88	3.09	2.46	2.81	1.75	MU
148	Spark plug tester	3.08	2.64	3.26	2.99	1.50	MU
149	Workbench with vices	2.76	2.55	2.91	2.74	1.52	MU
150	Portable engine hoist	3.20	2.91	3.20	3.10	1.57	MU
151	Diesel engine phasing and calibration Machine	3.36	1.82	3.37	2.85	1.55	MU
152	Electrical test bench	2.80	2.45	3.26	2.84	1.51	MU
153	Cylinder boring machine with accessories and assorted tools	3.16	1.91	3.46	2.84	1.56	MU
154	Honing machine with accessories and assorted cutters	2.56	1.82	2.69	2.36	1.33	SU
155	Bottle jack (hydraulic) light and heavy	3.32	3.00	3.46	3.26	1.56	MU
156	Vehicle tire	2.12	2.82	2.60	2.51	1.44	MU
157	Trolley jacks	1.80	2.73	1.83	2.12	1.20	SU

158	Motor scope (engine analyzer)	2.32	2.27	2.20	2.26	1.84	SU
159	Auto Electrical system instructional Chassis	1.92	2.36	1.74	2.01	1.04	SU
160	Armature growler	2.00	1.82	2.03	1.95	1.14	SU
161	Hydraulic nipple forming tool	1.80	2.27	2.06	2.04	1.08	SU
162	Timing light	1.96	2.73	2.06	2.25	1.13	SU
163	Inspection pits	1.80	2.00	2.11	1.97	1.16	SU
164	Compression gauge	2.08	2.55	2.14	2.26	1.31	SU
165	Valve spring compression kit	2.04	2.64	2.03	2.24	1.22	SU
166	Coil spring compressor (for suspension)	2.48	3.00	2.11	2.53	1.41	MU
167	Torgue wrench pre-set type	2.00	3.36	2.11	2.49	1.35	SU
168	Torque wrench dial type	1.92	2.82	2.11	2.28	1.36	SU
169	Carburetor service kit	2.00	2.18	2.09	2.09	1.21	SU
170	Piston ring compressor	1.64	1.91	2.06	1.87	1.21	SU
171	Axle stands	1.92	2.09	2.03	2.01	1.11	SU
172	Diagnostic testing machine (exhaust gas analyzer)	2.08	1.64	2.20	1.97	1.43	SU
173	Fire extinguisher	1.76	2.45	2.17	2.13	1.25	SU
174	Sand buckets	2.24	2.64	2.17	2.35	1.42	SU
175	Water buckets	2.48	2.09	2.63	2.40	1.43	SU
176	Hoist and box	3.28	2.36	2.74	2.79	2.03	MU
177	First aid box	1.84	2.91	1.83	2.19	1.29	SU
178	Workshop overalls	1.92	2.64	2.23	2.26	1.41	SU
179	Complete vehicle engine (petrol)	1.56	1.91	1.91	1.79	1.08	SU
180	Complete vehicle engine (diesel)	2.12	3.00	2.26	2.46	1.45	SU
181	Live vehicle	2.72	2.73	2.60	2.68	1.91	MU
182	Camshaft grinding machine	2.52	2.18	2.49	2.40	1.56	SU
	Grand Total	**2.46**	**2.45**	**2.53**	**2.48**	**1.49**	SU

VHU= Very Highly Utilized, HU= Highly Utilized, Modreately Utilized SU=Slightly, VSU=Very Slightly Utilized

The result in table 1 presented the mean and standard deviation of MVMW trade teachers, workshop attendants and MVMW students in Government Science and Technical Colleges in Gombe state. Item 92 – 93, 109 – 113, 118 – 119, 127- 132, 134, 137-140, 142, 154, 157-165, 167-175, 177-180 and 182 with the mean between 1.87 and 2.49 indicating the MVMW facilities are slightly utilized in Government Science and Technical Colleges in Gombe state. Moreover, item 95-108, 114, -117, 120, 122, -126, 133, 135-136, 141 -153, 155-156, 166, 176 and 181 are moderately utilized in Government Science and Technical Colleges in Gombe state. The grand mean total of 2.48 is recorded, indicating that the MVMW instructional facilities are slightly utilized in Government Science and Technical Colleges in Gombe state.

Hypothesis 1

Ho_1: There is no significant difference among the mean responses of MVMW teachers and workshop attendants MVMW students on the functionality of facilities for teaching and learning of MVMW in technical colleges of Gombe State.

Table 3: Analysis of Variance among the MVMW Teachers, Workshop Attendants and MVMW Students on the Level of Functionality of Instructional Facilities for Teaching and Learning in Government Science and Technical Colleges

	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Between Groups	7105.740	2	3552.870	3.078	0.053	Accept
Within Groups	78481.725	68	1154.143			
Total	85587.465	70				

The Analysis of Variance (ANOVA) presented in table 3 revealed that, F (2, 68) = 3.078, *P* = 0.053 tested at 0.05 level of significance. Since the computed probability value is equal to the level of significance, hence, the null hypothesis was accepted. This showed that there was no significant difference among the mean responses of MVMW teachers' workshop attendants and MVMW students on the level of functionality of MVMW instructional facilities in Government science and technical colleges of Gombe state.

Hypothesis 2

Ho_2: There is no significant difference among the mean responses of MVMW teachers, workshop attendants and MVMW students on the utilization of facilities for teaching and learning of MVMW in technical colleges of Gombe state.

Table 4: Analysis of Variance among the MVMW Teachers, Workshop Attendants and MVMW Students on the Level of Utilization of Instructional Facilities for Teaching and Learning in Government Science and Technical Colleges

	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Between Groups	714.826	2	357.413	0.173	0.841	Accept
Within Groups	140269.793	68	2062.791			
Total	140984.620	70				

The Analysis of Variance (ANOVA) presented in table 4 revealed that, F (2, 68) = 0.173,*P* = 0.841 tested at 0.05 level of significance. Since the computed probability value is greater than the level of significance, the null hypothesis was accepted. This showed that there was no significant difference among the mean responses of MVMW teachers' workshop attendants and MVMW students on the level of utilization on MVMW instructional facilities in Government Science and Technical Colleges of Gombe State.

Discussion of Findings

The finding from the study revealed that the MVMW instructional facilities are moderately functional in Government Science and Technical Colleges in Gombe state. Also, there was no significant difference among the mean responses of MVMW teachers' workshop attendants and MVMW students on the level of functionality of MVMW instructional facilities in Government science and technical colleges in Gombe state. These findings disagree with the finding of Bello and Babawuro (2013) found that most of the facilities (tools, equipment and machines) in the workshops of the colleges are not functional in GSTCs of Bauchi state. However, Agwubike and Ogbouma (2010) found that majority of the available equipment were either non-functional or obsolete in fitness centre's in Edo and Delta states.

The study revealed that the MVMW instructional facilities are moderately utilized in Government Science and Technical Colleges in Gombe state. In addition there was no significant difference among the mean responses of MVMW

teachers' works attendants and MVMW students on the level of utilization on MVMW instructional facilities in Government Science and Technical Colleges in Gombe State. This finding is in line with the finding of Manabete and Makinde (2016) who found that Student's level of utilization of instructional material during electrical electronic practical lesson in Technical colleges in the North-East geo-political zone of Nigeria was low in 12 out of 15 measuring instruments. There was no significance difference in the mean rating on the rate of Utilization of Tools and Equipment in the teaching and learning of garment making in senior secondary school in Edo state. Moreover, Manabete and Makinde (2016) found that there is no significance difference in the mean responses of teachers, workshop attendant and students on the level of utilization of consumable materials by students during practical lessons.

Recommendations

Based on the finding of this study, the following recommendation was made:

1. Teachers and Technical colleges Administrators should ensure the effective utilization of instructional facilities in teaching and learning of MVMW trade in Government Science and technical colleges in Gombe state.
2. Teachers and Technical colleges Administrators should ensure that all instructional facilities for teaching and learning of MVMW trade are functional in the Government Science and technical colleges in Gombe state.
3. Government should supply and ensure the availability of all the instructional facilities that are necessary in teaching and learning of MVMW trade in Government Science and technical colleges of Gombe state.
4. Government should ensure that all the instructional facilities for teaching and learning of MVMW trade are adequate in the Government Science and technical colleges in Gombe state.

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