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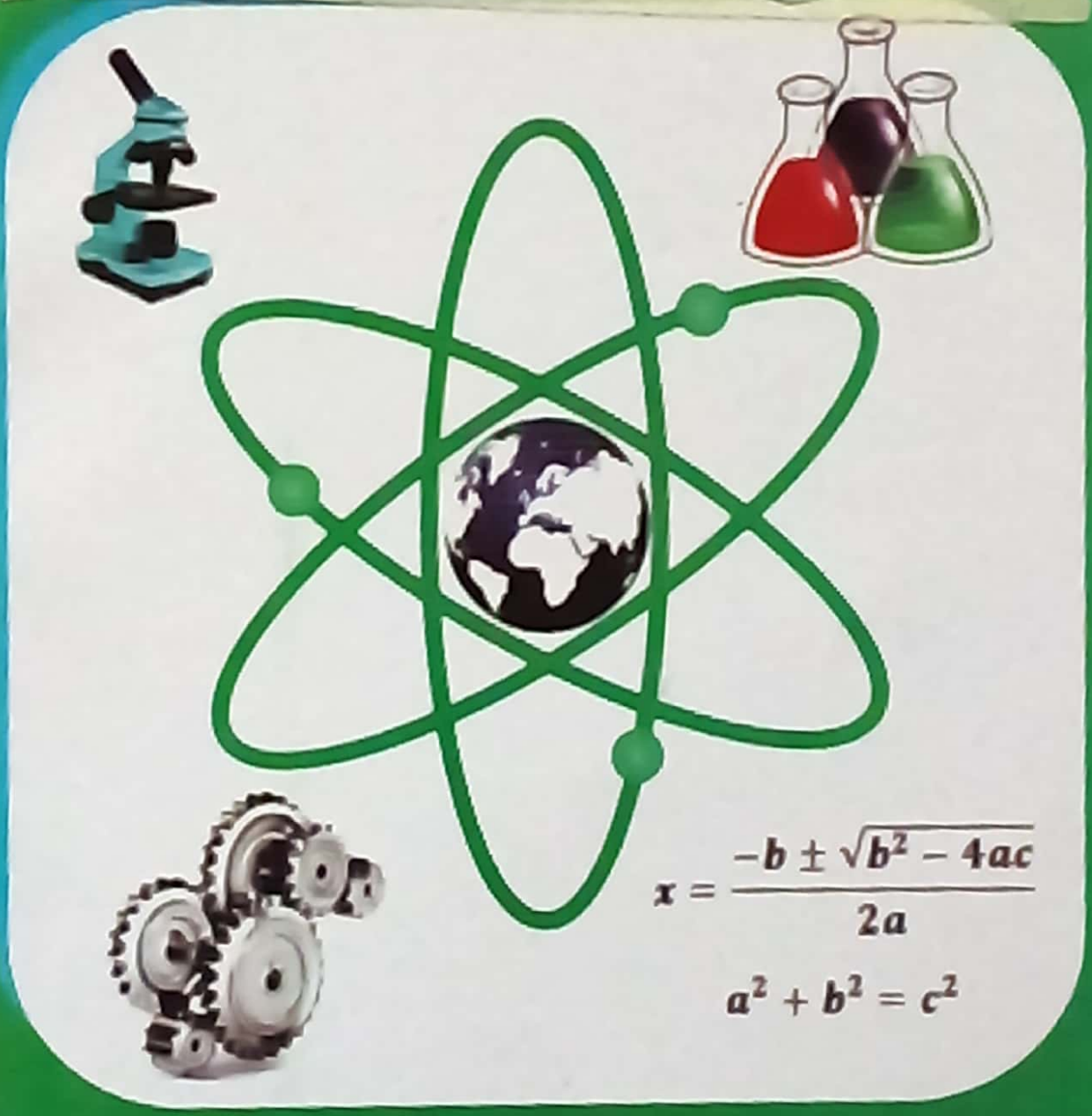

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TREPRENEURIAL SKILLS NEEDS OF MOTOR VEHICLE MECHANIC AFTSMEN IN AUTO-ELECTRICITY/ELECTRONIC: A PANACEA FOR UNEMPLOYMENT IN KANO STATE

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Abstract

pose of this study is to determine the entrepreneurial skills needed by auto-electronic craftsmen for self-employment in Kano State. The study was influenced by the of unemployment among the MVM (Motor Vehicle Mechanics). The study focused on needed by motor vehicle mechanic craftsmen in auto-electricity for self-employment in Kano population of 105 stakeholders consisting of 74 MVM craftsmen and 31 industry personnel for the study. Two research questions guided the study. A structured questionnaire titled on skills needed by MVM craftsmen in auto-electricity/electronic, consisting of 30 structured based on the two research questions. The instrument was validated by three and reliability coefficient of 0.83 was obtained using Pearson product moment correlation. were analysed using mean and standard deviation to answer the research questions. showed that all the 30 skills were needed by the MVM craftsmen, indicating need for and re-training of MVM craftsmen in auto-electricity/electronic work skills for effective self The study recommends continuous training and re-training of MVM craftsmen in auto-electronic skills through training and collaboration with automotive company, organising and seminars to update their skills and modern scanning facility and vehicles should be

Skill, Motor vehicle Mechanics, Auto-electricity/electronic, Craftsmen, entrepreneur.

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cal college is regarded as one of the principal technical and vocational education in Nigeria. National Board for Technical Education (NBTE, 2001) revealed that nical colleges prepare students for the National Technical Certificate (NTC) and National Technical Certificate (ANTC) examination leading to the production of and master craftsmen respectively. The Federal Republic of Nigeria (FRN, 2013) that the trainees on completion of programmes will have three available Get a job either after completion of the course duration or after completion of modules of enough training on skills that could get employed. Become an and even employ other people; Proceed to advance his education in advance programmes as well as in Higher Institution of Technical Training just like Mono-technics, University, Colleges of Education, as well as College of

nical Colleges, Auto-Electricity/Electronic as module of Motor Vehicle Mechanic involves the acquisition of basic scientific knowledge and practical skills in the selection of materials, construction, operation and maintenance of electricity and aspect of motor vehicle. The aim of the Auto-Electricity/electronic programme in nical colleges according to NBTE (2011) is to equip trainees with the work skills and knowledge to be able to trace faults in the electrical/electronic system of motor and effect necessary repairs.

The term skill could be defined as the level of efficiency achieved or attained through repetitive performance of an operation. Lawal (2013) refers skill as a well-established habit of doing something in the most economical way involving the acquisition of performance capabilities. According to Abdullahi (2010), skill is the capability of accomplishing a job with precision, cleverness and expertise. It is therefore necessary for MVM craftsmen to acquire some skills that would enable them to be entrepreneur and even employed others.

Entrepreneur can be defined as one who brings resources, labour, material among other into combinations that make their value greater than in the past, as well as been able to introduce changes, innovation and new ideas for the growth of a business. Similarly, Kitner (2007) in Maigida, Saha and Namkere (2013) seen an entrepreneur as an extraordinary kind of work that requires the gathering of all components of production specifically capital, land and skills, and tries to guarantee ideal usage of them to ensure most extreme benefit.

The Skills need of MVM craftsmen in relation to this study arises as a result of today's modern vehicles that are more of electrical and electronics trouble shooting unlike the manual vehicle as it was in past, most of the MVM craftsmen were not trained with this modern tools and equipment in the motor vehicle mechanic course (Dawha and Medugu2016). As a result, this engenders the need for skilled hand (craftsmen) that is up-to-date in knowledge and work-skills needed, who are expected to possess skills that will enable them practice their trade, secure job, employ others or further their education upon graduation. Also the MVM craftsmen are expected to cope with the new trends in automotive which emphasis in the automobile workplace has been shifted from pure manual method to mechatronics characterized by the use of diagnostic scan tools, equipment and machines to carry maintenance and repair job, unfortunately most MVM graduates lack some of the skills required. It appears as if there is poor teaching, poor learning and lack of adequate skill acquisition among MVM students in Kano State Technical Colleges. The NABTEB (2014) report revealed a consistent failure of over 60% for the past five years (2010 to 2014). The report stated that the candidates' weaknesses in MVM were manifested in form of poor knowledge and particle performance in Auto-Electricity/Electronic aspect of MVM and poor exposure to practical work. Moreover, most of the automobile teachers lack the required competencies needed in the use of On-board diagnostic (OBD) facilities such as scan tools and other diagnostic machines (Peter and Danlami 2013). It is in line with this trend that the study is out to determine skills needed by MVM craftsmen in reading and interpreting On-board diagnostic (OBD) information in automobiles and in the use of scan tools for diagnosing faults in automobile.

Research Questions

The following research questions guided the study:

1. What are the skills needed by MVM craftsmen in reading and interpreting On-board diagnostic (OBD) information in automobiles?

2. What are the skills needed by MVM craftsmen in the use of scan tools for diagnosing faults in automobile?

Methodology

Descriptive survey research design was used in carrying out this study. Questionnaire was used to seek the opinions of the MVM craftsmen and senior automobile industry personnel on the skills needs of Motor Vehicle Mechanics (MVM) craftsmen in Auto-electricity/electronic for effective entrepreneurial skills training in technical colleges of Kano State. The study covered all the NTC III students of technical colleges offering MVM in Kano State. The target population of 105 stakeholders consisting 74 MVM craftsmen and 31 senior automobile industry personnel from selected accredited automobile repairs/service centres recognised by National Automotive Design and Development Council (NADDC) in Kano state were used for the study.

The instrument used for data collection was a structured questionnaire, titled Questionnaire on skills Need of Motor Vehicle Mechanics Craftsmen (QSNMVMC) contained 30 items divided into two sections was used to collect data from the respondents. The questionnaire was divided into three sections, section A was designed to obtain relevant background and personal data of the respondents while section B and C contained 15 items each, addressing the two research questions. The questionnaire items were structured using five point rating scale with responses options of highly needed (HN), needed (N), moderately needed (MN), not needed (NN) and Undecided (UN).

The questionnaire was validated by three experts in the department of Industrial and Technology Education, Federal University of Technology, Minna. A pilot study was conducted by administering questionnaire to 20 respondents consisting of 10 MVM craftsmen and 10 industry personnel from Kaduna State respectively which is outside the study area. The scores obtained from test retest were correlated and reliability coefficient of 0.83 was established using Pearson product Moment Correlation.

The questionnaires was administered to the respondents by the researcher and with the aid of five research assistants, this method adopted yielded a return rate of 90 percent. Data collected was analyzed using mean and standard deviation. Mean and standard deviation was used to analyze the research questions. All statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS version 20).

Results

Research Question 1

What are the Skills needed by MVM craftsmen in reading and interpreting on board diagnostic (OBD) information?

Table 1

Mean ratings of the Responses on the Skills needed by MVM craftsmen in reading and interpreting on-board diagnostic (OBD) information.

SN	*ITEM*	$\bar{x}$ N=105	*SD*	*REMARK*
	Ability to read and interpret:			
1	Check-engine light	4.67	0.54	Highly Needed
2	Battery system information	4.16	0.63	Needed
3	Air-condition system information	4.00	0.77	Needed
4	Warning light	4.25	0.99	Needed
5	Brake system warning	4.51	0.85	Highly Needed
6	Automatic transmission system information	4.29	0.78	Needed
7	Safety beat warning light	3.45	1.23	Needed
8	VIN information for component order	3.61	1.02	Needed
9	Temperature warning light	4.35	1.05	Highly Needed
10	Information on wheels and steering system	4.35	0.75	Needed
11	Fault tracing light	4.32	0.70	Needed
12	Rectification charging system light	3.83	0.82	Needed
13	Safety airbag warning	4.64	0.55	Needed
14	Fault in trafficator circuit	4.32	0.59	Needed
15	Windscreen wiper warning	3.19	0.70	Needed

KEY: $\bar{x}$ =Mean rating of the respondents, SD = Standard Deviation

Research Question 2

What are the skills needed by MVM craftsmen in the use of scan tools for diagnosing faults in automobiles?

Table 4.2

Mean ratings of the Respondents on the Skills needed by MVM craftsmen in the use of scan tools for diagnosing fault in automobiles.

S/N	ITEM	$\bar{x}$ Rating	SD	REMARK
	Ability to use scan tools tools for:			
1.	Diagnosing battery faults.	4.51	0.76	Highly Needed
2.	Fault tracing in lighting system	4.28	0.63	Needed
3.	Fault diagnosis in starting system	4.38	0.69	Highly Needed
4.	Scan tools for fault diagnosing	4.39	0.74	Highly Needed
5.	Faulty fuel injection system diagnosing	4.45	0.72	Highly Needed
6.	Transmission system fault diagnosing in cars	4.38	0.63	Highly Needed
7.	Sensing system diagnosing	4.37	0.80	Highly Needed
8.	Diagnosing air-conditioner system	4.06	0.89	Needed
9.	Diagnosing ignition system problem	4.58	0.72	Highly Needed
10.	Emission control fault rectification	4.19	0.70	Needed
11.	Fuel economy diagnosing	4.54	0.77	Highly Needed
12.	Cooling system fault diagnosing	4.58	0.72	Highly Needed
13.	Diagnosing fault on wheel and steering system.	4.48	0.63	Highly Needed
14.	Diagnosing brake system fault.	4.58	0.78	Highly Needed
15.	Electronic control unit (ECU) fault.	4.41	0.85	Highly Needed

$\bar{x}$ = mean rating of the respondents, SD = Standard deviation

The data presented in Table 1 shows that all the 15 items had their mean rating above the criteria mean of 2.50. This implies that all the 15 skills in reading and interpreting on-board diagnostic (OBD) information are needed by MVM craftsmen to enable them practice their trade and secure job upon graduation in Kano State. The data presented in Table 2 shows that all the 15 items had their mean ratings above the criterion mean of 2.5. This implies that all the 15 skills in the use of scan tools and facilities for diagnostic automobile faults are needed by MVM Craftsmen to enable them practice their trade and secure job upon graduation in Kano State. The Table also revealed that the items had their standard deviation ranged from 0.63 to 0.89. This revealed that the responses of the respondents were not far from the mean ratings also shows that the respondents in opinion are not far from one another.

Discussion of the Findings

The findings on the skills needed by MVM craftsmen in reading and interpreting on board diagnostic (OBD) information revealed that MVM craftsmen need skills in reading and interpreting on-board diagnostic information. Specifically the findings revealed that MVM craftsmen need skills in ability to read and interpret battery system information, air-conditioner system information, automatic transmission system information, vehicle identification number information, temperature warning light among others. These findings are in line with Fisher (2006), Temperature warning light among others. These findings are in line with Jimoh and Malaga (2010) who maintain that most of the MVM craftsmen were not trained with the modern tools and equipment in the motor vehicle mechanic course curriculum. MVM craftsmen lack skills in reading and interpreting OBD information in automobile. Consequently, the MVM craftsmen from technical college cannot trace and diagnose fault effectively in auto-electronic/electronic aspect of MVM as they are lacking

the expected exposure to practical skills. Therefore, there is a need for training and retraining of MVM craftsmen to update their knowledge and skills in modern vehicles maintenance, repairs and services.

The finding on the skills needed by MVM craftsmen in the use of scan tools on automobile showed that all the 15 items suggested as skills were necessary. This indicates that craftsmen lack the required skills in handling and using the scan tools for fault rectification in modern automobiles. This is in agreement with the work of Peter and Danlami (2013) who stated that most of the MVM craftsmen lack the required skills needed in the use of On-board diagnostic (OBD) facilities such as scan tools and other diagnostic machines as their teachers lack the skills to pass it on to them. Odigiri and Ede (2010) stressed the need for a sound technical knowledge on the use of scan tools by automobile maintenance personnel in the automobile workplace. This is therefore paramount since without it, efficient diagnosis, maintenance and repairs cannot be carried out on modern vehicles. This calls for retraining of MVM craftsmen so as to keep them abreast with the trend of the events in the automobile world. These findings are in line with Hackett (1979) who pointed out that the purpose of retraining is a mean of improving the present job performance. There should be a constant retraining of MVM craftsmen to make them up-to-date for effective discharge of their duties in the automobile workshop.

Conclusion

It is obvious that to achieve the aims and objectives of NBTE in auto-electricity/electronic is through effective exposure to practical on modern automobiles; reading, interpreting and use of modern facilities for scanning modern automotive for faults diagnose and effect repairs. It can be concluded that MVM craftsmen need skill in reading and interpreting on-board-diagnostic information and in the use of scan tools for diagnosing faults in automobiles. A fully Skilled MVM craftsman is one who can cope successfully with all electrical and electronic problems on modern vehicles. The study identified the skills areas needed in auto-electricity/electrical to bridge the gap that exist in practical skills on modern vehicles of MVM craftsmen to enable craftsmen to be self-employ and even employed others in Kano state.

Recommendations

Based on the findings of this study, the following recommendations were proffered.

1. A training workshop should be organised for MVM craftsmen in order to acquire the knowledge and skills in reading and interpreting on-board diagnostic information.
2. Technical colleges should be provided with modern car scanning facilities and the MVM craftsmen should be trained and re-trained for the manipulation and usage of car scan tools.
3. MVM craftsmen should undergo training on the skills of maintaining electronic and electrical aspect of modern vehicle. School authority should collaborate with automotive industries.
4. MVM craftsmen school workshop should be provided with modern automotive vehicle to serve as a replica to the one outside.

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