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PRACTICAL SKILL NEEDS OF TECHNICAL COLLEGE GRADUATES OF MVMW FOR EMPLOYMENT IN ANAMBRA AND ENUGU STATES

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ABSTRACT

The purpose of the study was to determine practical skills needs of technical college graduates of MVMW for employment in Anambra and Enugu States. Four research questions guided the study and four null hypotheses were tested. The study adopted descriptive survey research design. The population for the study consisted of 150 respondents (120 automobile industrial workers and 30 motor vehicle mechanic work teachers) in the two States. There was no sampling because of the manageable size of the population. The instrument for data collection was a structured questionnaire titled Practical skill Needs of Technical College graduates of Motor Vehicle Mechanics' Work Questionnaire (PSNTCGMVMWQ), validated by three experts; two in Department of Technology and Vocational Education and one from Measurement and Evaluation units of Department of Educational Foundation in the Faculty of Education, Nnamdi Azikiwe University Awka. Cronbach alpha reliability method was employed to determine the internal consistency of the instrument, which yielded coefficient values of 0.92, 0.87, 0.89 and 0.83 with an overall reliability coefficient of 0.88. Data were analyzed with mean and standard deviation to answer the research questions and determine the homogeneity of the respondents while T-test was used to test the hypotheses at 0.05 level of significance using the Statistical Package for Social Sciences (SPSS) version 9.2. The data analysis revealed that all the stipulated practical skills are very high needed by technical college graduates of MVMW for employment in Anambra and Enugu States. Based on the findings, it was concluded that the infusion of these skills into the curriculum is paramount, because it will enhance the preparation of the graduates for success in employment. It was recommended among others that curriculum designers for MVMW programme should periodically review the curriculum to reflect technological innovations.

Keywords: Practical Skills; Needs; Technical College; Graduates; Employment.

Introduction

Youth unemployment among graduates has become a critical issue and a threat to Nigerian economic development. It is no longer news that the nation's youth unemployment rate has been shooting up the sky. This can be attributed to lack of employability skills among graduates. It is widely acknowledged that, the economic growth of any nation can only be achieved through investment in high skilled workforce. This is why Nigerian government recently began to emphasize skill acquisition through technical and vocational education. Technical and vocational education has been an integral part of national development strategies in many societies because of its impact on productivity and economic development.

Technical and vocational education is an aspect of the educational process involving the acquisition of practical skills,

attitudes, understanding and knowledge relating to occupation in various sectors of the economic and social life. It is regarded as a means of preparing students for occupational fields and effective participation in the world of work and a veritable instrument of poverty eradication. One of the major objectives of technical and vocational education is to inculcate in the individual the values for acquiring competencies necessary for self reliance. In Nigeria, technical and vocational education programs are offered in technical colleges and partly in secondary schools (Federal Republic of Nigeria, FRN, 2014). According to Okoye and Arimonu (2016), technical and vocational education is designed to offer people the opportunity of improving themselves in their general proficiency, especially in relation to their future occupation. Particularly, one of the goals of technical and vocational education is to give training and impart necessary skills to individuals who shall set up their own businesses and employ others. This has been the stated desire of Nigeria's educational planners since the introduction of the National Policy on Education in 1977. This stated ambition has been on all the revisions and editions of the Policy document up to the current edition of 2013.

The Federal Republic of Nigeria (FRN, 2013) stated that the curricula activity for technical colleges is structured in foundation and trade modules, with the trade modules consisting of five components of general education; theory and related courses; workshop practice; industrial training/production work and small business management and entrepreneurial training; within which different practical skills are subsumed. Motor vehicle mechanics work graduates are expected to possess good practical skills at any stage to catch up with work-skill needs. Practical skills are the key skills for employment in any field of endeavour. The importance of practical skills can never be over emphasis because they differentiate fields of endeavour and no individual can become an expert in any field without them. MVMW students require practical skills to diagnose, service and completely repair any fault relating to the conventional automobile assembly main unit to the manufacturers specification.

Furthermore, nowadays, computers and electronic devices are used to control the operation of engines. As a result, new vehicles use less fuel, perform better, and run cleaner than those in the past. In this regard, Nwoye (2013) noted that computerized engine control systems regulate air and fuel delivery, ignition timing, emission systems operation and a host of other related operations. It therefore becomes necessary for technical colleges to equip MVMW students with practical skills in basic computer operations and applications for them to perform their functions effectively and efficiently in any organization by using computer to troubleshoot and detect vehicle faults..

Due to advancement in modern automobile technology, the occurrence of regular servicing of vehicle is coming down. KPMG in Udogu (2015) observed that older generation of vehicles required more frequent engine tuning, oil changes, faster replacement of maintenance parts than modern vehicles. Furthermore, due to the dynamic changes in the society and consequent development in the automobile world, the curriculum used in technical colleges for MVMW may have become obsolete as to equip the students with the relevant practical skills to fit in today's automobile industry. The instructors and teachers may also not be acquainted with the new practical skills in the modern automobile industry. It is obvious that if these lapses are not addressed, technical colleges in Anambra and Enugu State will continue to churn out MVMW graduates with irrelevant and outdated skills that will

rob them employment opportunities in modern automobile industries. It can be inferred that MVMW graduates of technical colleges in Nigeria, generally and the two South-East States in particular may have acquired little or no practical skills for the maintenance of modern vehicles and for sustainable employment. It is against this background that this study is undertaken to determine the practical skill needs of technical college graduates of MVMW for employment in Anambra and Enugu States.

Research Question

The following research question guided the study:

1. What are the practical skill needs of technical college graduates of motor vehicle mechanics work (MVMW) for employment in Anambra and Enugu States?

Hypotheses

The following null hypothesis was tested at 0.05 levels of significance:

1. There is no significant difference between the mean ratings of motor vehicle mechanics work (MVMW) teachers and automobile mechanic industry workers on practical skill needs of technical college graduates of MVMW for employment in Anambra and Enugu States.

Research Method

Descriptive survey research design was adopted for the study. The study was carried out in Enugu and Anambra States which are located in Eastern part of Nigeria. The population for this study consists of 150 respondents made up of 120 automobile mechanic industry workers of maintenance workshops from all the 18 automobile companies registered with the Ministry of Commerce and Industry and 30 MVMW teachers from ten NBTE accredited government technical colleges offering MVMW in Anambra and Enugu States. The entire population was studied.

A 58 item structured questionnaire titled "Work-skill Needs of Technical College graduates of Motor Vehicle Mechanics' Work Questionnaire" (WSNTCGMVMWQ) was used for data collection. The questionnaire was face validated by three experts: two in Department of Technology and Vocational Education and one from Measurement and Evaluation units of Department of Educational Foundation in the Faculty of Education, Nnamdi Azikiwe University Awka., Anambra State.

The internal consistency method was adopted to establish the reliability of the instrument. Copies of the instrument were administered on 20 motor vehicle mechanics' work teachers and Automobile industry workers of maintenance workshops in Taraba State (ten MVMW teachers and ten Automobile industry workers). The instrument obtained from the trial test was analyzed using Cronbach Alpha reliability Coefficient (α) with an overall reliability coefficient value of 0.88. the coefficient indicated high internal consistency which shows that the instrument was highly reliable for the study as recommended by George and Mallery (2009), that a cronbach alpha coefficient that goes beyond 0.7 is satisfactory but beyond 0.8 or 0.9 is better and excellent in that order**.** The data collected were analyzed using arithmetic mean and standard deviations were used to answer the research questions and determine the closeness of the respondents mean ratings. The decision was based on item and cluster mean scores in relation to the real limits of numbers. Very Highly Needed (VHN) 3.50-400, Highly Needed (HN), 2.50-3.49, Needed (N) 1.50-2.49, and Not Needed (NN) 1.00-1.49. The research hypothesis was tested using t-test at 0.05 level of significance.

Presentation of Results

Research Question: What are the practical skill needs of technical college graduates of motor vehicle mechanics work for employment in Anambra and Enugu States?

Table 1: Mean Ratings And Standard Deviation of Responses on Practical Skill Needs of Technical College Graduates of Motor Vehicle Mechanics Work for Employment in Anambra and Enugu States

S/N	**Practical skills on engine and its component**	**x̄**	SD	Remark
	Ability to			
1	Reassemble an engine	3.58	0.51	VHN
2	Properly disassemble a cylinder head	3.66		VHN
3	Reassemble cylinder head	3.95	0.29	VHN
4	Install a crankshaft	3.94	0.56	VHN
5	Remove a crankshaft	3.80	0.66	VHN
6	Service flywheel	3.71	0.35	VHN
7	Service engine pistons	3.86	0.56	VHN
8	Properly install piston rings	3.79	0.52	VHN
9	Install a timing belt	3.80	0.60	VHN
10	Grind valves in their correct valve face angle	3.83	0.49	VHN
11	Replace valves in their original guides	3.66	0.68	VHN
12	Install rocker arm	3.78	0.53	VHN
13	Position rocker arm shaft correctly	3.78	0.46	VHN
14	Adjust valve clearance	3.97	0.20	VHN
	Grand Mean	**3.79**		**VHN**
	Practical skills on lubrication system			
	Ability to			
15	Install oil pumps	4.00	0.00	VHN
16	Service oil filtration system	3.97	0.25	VHN
17	Change bypass filter	3.97	0.18	VHN
	Grand Mean	**3.98**		
	Practical skills on cooling system			
	Ability to			
18	Replace belt	3.95	0.36	VHN
19	Install thermometer	3.93	0.39	VHN
20	Repair radiator	3.88	0.43	VHN
21	Clean radiator	3.93	0.38	VHN
22	Detect water pump problems	3.93	0.38	VHN
23	Install water pump	3.91	0.33	VHN
24	Repair water pump	3.97	0.33	VHN
	Grand Mean	**3.93**	**0.38**	
	Practical skill on clutch and braking system service	**x̄**	**SD**	**Remark**
	Ability to			
25	Service different type of clutch	3.94	0.23	VHN
26	Adjust clutch linkages	3.97	0.18	VHN
27	Diagnose clutch problems	4.00	0.00	VHN
28	Replace clutch pilot bushing	3.96	0.19	VHN
29	Install clutch dick	3.98	0.14	VHN
30	Install pressure plate assembly	3.98	0.14	VHN
31	Diagnose common brake system problems	4.00	0.00	VHN
32	Repair brake system problems	4.00	0.00	VHN
33	Install brake shoes	3.99	0.08	VHN
34	Install master cylinder	3.99	0.08	VHN
35	Repair master cylinder	4.00	0.00	VHN
36	Bleed master cylinder before installation	4.00	0.00	VHN
37	Install wheel cylinder	3.20	0.40	HN
38	Adjust minor brake shoes	3.20	0.40	HN
39	Install brake drum	3.20	0.40	HN

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40	Install brake pads	3.20	0.40	HN
	Grand Mean	**3.79**		
	Practical skills on ignition system			
	Ability to			
41	Service Battery	3.19	0.39	HN
42	Service alternator	3.20	0.40	HN
43	Service regulator	3.19	0.39	HN
44	Install contact points	3.19	0.39	HN
45	Replace electronic distributor parts	3.19	0.39	HN
46	Replace a distributor assembly	3.19	0.39	HN
47	Adjust ignition timing	3.19	0.39	HN
48	Inspect spark plugs	3.03	0.16	HN
49	Assemble starter	3.03	0.16	HN
50	Replace regulator	3.03	0.16	HN
	Grand Mean	**3.14**		
	Practical skills on steering and suspension systems			
	Ability to			
51	Diagnose problems of steering system	3.02	0.19	VN
52	Diagnose problems of suspension system	3.01	0.12	VN
53	Install shock absorber	3.75	0.48	VHN
54	Adjust thrust bearing preload	3.74	0.50	VHN
55	Install coil spring	3.81	0.39	VHN
56	Install lorsion bar	3.81	0.39	VHN
57	Repair idler arm	3.80	0.40	VHN
58	Repair steering wheel	3.79	0.44	VHN
	Grand Mean	**3.59**		

Data in Table 1 show that all the 14 practical skills on engine and its components have a mean score ranging between 3.58 and 3.97with a cluster mean score of 3.79. This means that the respondents agreed that the practical skills on engine and its component are very highly needed by technical college graduates of motor vehicle mechanics' works for employment in Anambra and Enugu States. Standard deviation ranged from 0.20- 0.68 indicating that the respondents were not far from one another in their opinions.

Data in Table 1 also show that all the three practical skills on lubrication system item number 15 to 17 ranges between 3.97- 4.00 with the highest cluster mean score of 3.98 on practical skill needs skills by technical college graduates of motor vehicle mechanics' works for employment in Anambra and Enugu States. Standard deviation ranges from 0.00 - 0.25 indicating that the respondents were not far from one another in their opinions.

From Table 1, revealed that items number 18 to 24 on cooling system have mean score ranging between 3.91 – 4.00 with a cluster mean score of 3.96. This means that the respondents agreed to that the practical skills on cooling system are very highly needed by technical college graduates of motor vehicle mechanics' works for employment in Anambra and Enugu States. Standard deviation ranges from 0.00- 0.29 indicating that the respondents were not far from one another in their opinions.

Regarding practical skills on clutch and braking system service from item number 25 to 36 in Table 1, it shows that the respondents have mean scores ranging between 3.20 to 4.00 with a cluster mean score of 3.79. This means that the respondents agreed that the skills are very highly needed skills by technical college graduates of motor vehicle mechanics' works for employment in Anambra and Enugu States. Standard deviation ranges from 0.00- 0.40 indicating that the

respondents were not far from one another in their opinions.

Furthermore on Table 1, it can be seen that the respondents ratings on items number 41 to 50 have the mean scores ranging between 3.03 to 3.20 with a cluster mean score of 3.14. This result however shows that the respondents agreed that practical skills on ignition system are highly needed by technical college graduates of motor vehicle mechanics' works to be employed in Anambra and Enugu States. Standard deviation ranges from 0.16- 0.40 indicating that the respondents were not far from one another in their opinions. The grand mean of 3.14 was obtained showing that practical skills on ignition system are very highly needed by technical college graduates of MVMW for employment.

Conclusively, the mean scores ratings of respondents with regard to practical skills on steering and suspension systems from items number 53 to 58 ranges between 3.02 to 3.81 with a cluster mean of 3.59. This result shows that the respondents agreed that practical skills on steering and suspension systems are very highly needed by technical college graduates of motor vehicle mechanics' works to be employed in Anambra and Enugu States. Standard deviation ranges from 0.12- 0.50 indicating that the respondents were not far from one another in their opinions.

Hypothesis: There is no significant difference between the mean ratings of motor vehicle mechanics work teachers and those of automobile industry workers regarding practical skill needs of technical college graduates of motor vehicle mechanics work for employment in Anambra and Enugu States.

Table2: Summary of t-test Result of the Mean Ratings of motor vehicle mechanics work teachers and automobile industry workers on practical skill needs of MVMW graduates for employment

S/N	Group	N	$\bar{x}$	SD	d/f	Level of sig	Calculated t-value	Table t-value	Decision
1	Automobile industry workers	118	3.68	0.06	143	0.05	0.21	1.98	Not Sig
2	Technical Teachers	27	3.68	0.05					

Summary for t-test Analysis for hypothesis 1; N= 145, $\bar{x}$ = Mean of needed skill; SD = Standard Deviation

Data in Table 2 show that the calculated t-value of 0.21 is less than the table value of 1.98 at 0.05 level of significance. This means that MVMW teachers do not differ significantly from the automobile industry workers in their mean ratings on practical skill needs of technical college graduates of motor vehicle mechanics work for employment in Anambra and Enugu States. Therefore, the hypothesis was not rejected.

Discussion of Findings

The results in the study showed that practical skills in the area of engine and its components, lubrication system, cooling system, clutch and braking system and ignition system are very highly needed by technical college graduates of MVMW for

employment in Anambra and Enugu States. The findings synchronized with that of Abidiak, Nduononwi and Akpan (2017) which revealed that engine repair skills acquired by technical college graduates significantly satisfy their self-employment need. Abidiak et al, also noted that technical college graduates display low level of automobile technology skills in the practical skills components; which shows that they are deficient in automobile practical skills.

Furthermore, the findings agree with that of Okwelle and Ojotule (2018) that technical college students should be fully exposed to practical training in their fields of endeavours. They support the view of Olayinka and Oyenuga (2010) that acquisition of basic practical skills on test, diagnose, service and repair are required by technical colleges for the changes in automobile mechanic work in automobile industries. In other words, without practical skills graduates of MVMW trade will not be relevant in the automobile industries of the present day**.**

The finding also revealed that both technical college MVMW teachers and automobile mechanic industry maintenance workshop workers did not differ significantly in their mean rating on practical skill needs of technical college graduates of MVMW for employment in Anambra and Enugu States. This finding clearly shows how important these skills are for technical college graduates of MVMW to fit into employment in automobile industries and perform their functions effectively and efficiently.

Conclusion

This study set out to determine practical skill needs of technical college graduates of motor vehicle mechanics' work (MVMW) for employments in Anambra and Enugu States. Based on the findings, it shows that technical college graduates of MVMW need practical skills for employment into automobile mechanic workshop industries. It was concluded that the infusion of these skills into the curriculum is paramount, because it will enhance the preparation of the graduates for success in employment.

Recommendations

Recommendations of the study are as follows:

1. Technical teachers of MVMW should update and upgrade their knowledge and practical skills in order to effectively train their students.
2. Technical college teachers of MVMW should use suitable instructional strategies and resources to enhance the quality of their products for success in employment.
3. Governments and non-governmental organizations (NGOs) including philanthropists should collaborate to provide modern infrastructural facilities for MVMW programme in order to facilitate transmission of 21st century work-skills for employability in the graduates.
4. The Ministry of Education should ensure that MVMW curriculum is fully implemented through adequate monitoring and supervision.
5. To adequately provide students work-skills required for employment, the three months period of Students Industrial Works Experience Scheme (SIWES) should be extended to six months and another six months after graduations, making it a one year SIWES. The coordinator of the scheme should also ensure that students carryout their training in places related to their fields and they should be properly supervised by school-based and industry-based supervisors.

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