

EXTENT OF UTILIZATION OF NEW TECHNOLOGICAL SKILLS BY AUTO-MECHANICS TEACHERS FOR TEACHING OF AUTO-MECHANICS TRADE IN TECHNICAL COLLEGES IN SOUTH EAST STATES, NIGERIA

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Abstract

This study determined extent of utilization of new technological skills by auto-mechanics teachers in teaching auto-mechanics trade in technical colleges in Southeast, Nigeria. Two research questions guided the study and two null hypotheses was tested at 0.05 level of significance. Descriptive survey research design was adopted in this study. The population comprises 130 respondents from auto-mechanics trade teachers in Southeast, Nigeria. The instrument used for data collection was a structured questionnaire, validated by three experts; two experts from Industrial Technology Education, and one expert from the Measurement and Evaluation unit, Faculty of Education. The reliability was established using pilot study and data analyzed using Cronbach Alpha with an index of 0.71. and 0.85. it had an overall reliability of 0.87 showing highly reliable. Collected data was analyzed using mean and standard deviation, whereas, null hypotheses were tested using t-test analysis. It was found that electronic ignition system and electronic power steering system skills are moderately utilized by auto-mechanics teachers in teaching auto-mechanics trade in technical colleges in Southeast Nigeria. Additionally, hypotheses testing revealed that there was no statistically significant difference in mean ratings of experienced and less experienced auto-mechanic teachers on extent to which electronic ignition system and electronic power steering system skills were utilized in teaching auto-mechanics trade in technical colleges in Southeast. It was concluded in the study that effective application of new technological skills will undoubtedly enhance teaching, productivity, economic development, employment and reduces involvement in social vices of technical college students in Southeast. Based on that, the researchers recommend that technical college teachers should understand the working principles of electronic ignition system and electronic power steering system in order to effectively teach students in auto-mechanics in technical colleges.

Keywords: Technology, New Technological Skills, Auto-mechanics Teacher.

Introduction

Technology is the application of scientific information, facts and practical skills in production of digital products for man's use. When technology is being adopted in the activities of man, it simplifies such activity in effective, efficient and timely manner. Udogu (2015) stated technology as the application of scientific knowledge in providing solutions to practical problems that plague and puzzle mankind. Meanwhile, for effective application and utilization of new technologies in any human activities, skills are necessary.

Skill on the other hand is the display of practical mastery of knowledge in timely performance and delivery of task. It involves individual's ability to practically carry-out a function effectively. Mbah and Elobuikwe (2016) stated that skill as the ability to make purposeful movements that are necessary to complete or master a particular task. Thus, skill acquisition is pivotal in the utilization of new technological innovation, because lack of corresponding skills in any discipline can create a gap which could hampers the utilization of the new technologies. Skills, when newly acquired, especially in the trending technologies are regarded as new technological skills.

Meanwhile, new technological skills could simply be seen as an advancing set of capacities acquired, formed or required to put into effective use of the trending technologies. These set of skills are new and requires acquisition of skills by individuals for excellence use of these new technologies in specific purposes. Mosweu and Chaterera-Zambuko (2021) opined that new technology are technologies whose development, practical applications, or both are still largely in use, such that they are

figuratively new into prominence from a background of nonexistence or obscurity. Thus, these new technological skills could either be acquired through education especially in technical colleges.

Technical colleges are core-skill enriched schools designed to empower recipients with necessary abilities for productivity. Technical colleges are the integral part of general education system that contributes significantly to the development of the society through developing physical, social, civic, cultural and economic competencies of students (nwalo and Eze, 2021). According to Ibuom, Deebom and Puyate (2024), technical colleges are designed to equip students with the skills necessary for various occupations, thereby preparing them for the demands of the workplace. Additionally, the general technical education programmes offered in Nigeria technical colleges (National Board for Technical Education NBTE, 2012) provide skills on window and door installation, roofing, radio, television and electronics work, auto-wiring, wiring and equipment installation, coil and armature winding and repair, auto-mechanic, wheel alignment and tyre balancing, auto-body repair, auto-shop and service station management, auto-air conditioning, engine cleaning and lubrication, brick laying and concreting, building construction, block moulding and bricks making, painting, air conditioning and refrigeration servicing and repair, among others. Thus, equipping recipients with skills for life-long competencies or career to either engage in self-employment or paid employment.

Consequently, auto-mechanics trade is one of the trades in technical colleges that involves the application of scientific knowledge in design, selection of materials, construction, operation and maintenance of automobiles (Eze, Onwusa, Oluyinka and Nwaosa, 2022). Similarly, Udogu (2015) affirmed that the emerging technologies in automobile trade include: Anti-lock Braking System (ABS), Electronic Fuel Injection (EFI), Electronic Ignition System, Electronic Transmission system, Variable Valve Timing Intelligence (VTVT), On- Board Detection and Diagnostic system (OBD), All Wheel Drive (AWD) system, All Wheel Steering (AWS), Active Suspension System and Emission Control System among others. it is clear from observation that these areas demand corresponding skills for individuals to effectively maintain automobiles. It is important for individuals who will engage in auto- Mechanics to acquire the necessary skills, knowledge and competencies needed to effectively maintain automobile system. Hence, it is imperative to effectively determine the extent to which teachers utilize electronic ignition and electric power steering system as new technologies in teaching auto-mechanics trade in technical colleges in Southeast. This will empower students and teachers for optimum performance in their chosen trade.

On the other hand, electronic suspension is a computer - controlled system that offers stability for Automobile in a motion. Hammond (2016) stated that electronic suspensions are the most advanced electronically controlled suspension systems that uses adjustable shocks or struts to adopt or change the ride control characteristics to deliver a better ride and handle experience over various driving conditions. In addition, Hinton (2022) stated that electronic suspension systems control each of the four shock absorbers and thus, controls the vehicle's ride characteristics, thereby, making it capable of changing within milliseconds. The author further stressed that electronic suspension system is meant to control the inputs which includes speed, pitch, steering angle and body-to-wheel displacement. Also, the ESC module evaluates these inputs which in turn provides an enhanced ride and comfort level over an expansive range of operating conditions.

Furthermore, electronic braking system (EBS) is an innovative braking system that is increasingly used in automobile. It refers to a computer-controlled system that uses sensors to detect the vehicle's speed and force applied to the brake pedal and then applies the brakes accordingly. Altius (2023) affirmed that electronic braking system (EBS) is a modern braking technology that incorporates electronic control systems to assist and enhance the efficiency of vehicle braking operations. This system controls other systems such as ABS (Anti-lock Braking System), ASR (Acceleration Slip Regulation), ESP (Electronic Stability Program) or retarder. Therefore, the brake system converts the momentum of the vehicle into heat by slowing and stopping the vehicle wheels, thus, causing friction at the wheels. The hydraulic system controls the friction units and its application led to braking system

(Erjavec, 2016). Thus, acquisition of these skills and the utilization of the skills on new technologies in auto-mechanics demands effective teaching by auto-mechanics teachers.

Nevertheless, an auto-mechanic teacher is any individual that is well-equipped with the necessary pedagogical competencies in automobile and its related trade. Eze, Onwusa, Oluyinka and Nwaosa (2020) viewed auto-mechanic teacher like other technical teachers who have acquired special competency required to effectively teach a particular subject area to learners. Hence, auto-mechanic teachers are charged with responsibilities of empowering technical college students especially those in auto-mechanics with new technological skills for them to be self-employment or engage in paid employment. Hence, an effective and efficient auto-mechanic teachers could be based on years of experience.

In line with above, experience can be seen as the resultant quality of knowledge or skill gained over time. It could be in months, years or more. To support the above assertion, Adeyemi (2018) opined that experience is actually one of the observable teacher characteristics that are consistently correlated with achievement, and its effect could be the strongest determinant factor in teaching, especially for some sub-groups of teachers. In this context, teachers experience can be said to span through years of active practices and expressed as: 0 – 5years for less experienced teachers while 6 and above years denotes experienced teachers. It is pertinent that experience could assist in determining the extent of utilization of new technological skills by auto-mechanics teachers in teaching auto-mechanics trade in technical colleges in Southeast.

Nevertheless, in this contemporary time, innovation in technology has brought about skill-mismatch, which had resulted in a rising growth of unemployment in the society. Onyebuenyi (2018) emphasized the accelerating pace of technology which has made a large number of job and skill obsolete. In addition, Kayode (2023) stated that there is high unemployment rate in the country due to lack of technical progress. The author further said that the high unemployment rate was because a particular type of workers' skills was made redundant as a result of changes in production methods and substituting machines for services. In auto-mechanics, the case has been the same thereby placing skill-acquisition as corresponding task on individuals in order to maintain relevance as technology evolves. Based on this, Okonkwo (2019) opined that modern vehicles are increasingly equipped with intricate electronic components and control systems that demand a higher level of sophistication for testing, servicing, and diagnosis, along with specialized tools for On-Board Diagnose and repairs.

Statement of the Problem

The advancement in technology is evident virtually in all spheres of life. Specifically, in the area of automobiles, new products are invented on timely basis with distinctive features. A number of the automobiles that are manufactured, imported or assembled are controlled primarily by chips on computers, sophisticated electronic gadgets and control systems that require higher degree of maintenance, as well as specialized diagnostic tools and instruments. Consequently, vehicle technology and maintenance processes in this present time have adversely affected corporate individuals and transportation system/industries in Nigeria. As a result of that, the availability of adequately skilled graduates to provide service to the ever-growing automobile industries has been seen as a critical gap between the automobile industrial requirements and trained graduates of auto-mechanics.

It is very disheartening that in most cases, the issues of skill mismatch and rising unemployment rate of graduates of auto-mechanics were as a result of auto-mechanics instructional process. Most teachers have resorted to traditional auto-mechanics instructional process without consideration to the new auto-mechanics instructional processes. These processes have adversely affected the skills acquisition of students in new technology and undoubtedly affected the productivity of auto-mechanics students. Additionally, it has resulted to all manners of socio-economic vices like stealing, kidnapping, smoking, among others in the society. Accordingly, these backdrops necessitated this study. Therefore the study seeks determine extent of utilization of new technological skills by auto-mechanics teachers in teaching auto-mechanics trade in technical colleges in Southeast, Nigeria.

Purpose of the Study

The purpose of the study was to determine the extent of utilization of new technological skills by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States. Specifically, the study sought to determine the extent of utilization of;

1. Electronic ignition system skills by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States.
2. Electric power steering system skills by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States.

Research Questions

The following research questions guided the study:

1. To what extent are electronic ignition system skills utilized by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States?
2. To what extent are electric power steering system skills utilized by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States?

Hypotheses

The following null hypotheses were tested at .05 level of significance:

- 1: There is no statistically significant difference in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electronic ignition system skills are utilized by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States.
- 2: There is no statistically significant difference in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electric power steering system skills are utilized by auto-mechanics teachers for teaching auto-mechanics trade in technical colleges in Southeast States.

Method

The study adopted a descriptive survey research design. The study was carried out in Southeast, Nigeria. Southeast Nigeria comprises Abia, Anambra, Ebonyi, Enugu and Imo States. The region contained a population of 130 teachers of auto-mechanics trade in all the technical colleges offering auto-mechanics trade in Southeast. These include 31 auto-mechanics trade teachers in Abia, 29 in Anambra, 19 in Ebonyi, 27 in Enugu and 25 in Imo State. This population was further parted into two groups based on years of experiences (77 teachers had 6 and above years and 53 teachers had 0-5 years). The instrument for data collection was a structured questionnaire titled “Extent of Utilization of New Technological Skills by Auto-Mechanics Teachers Questionnaire” (EUNTSAMTQ). The questionnaire had 22- items statement structured on a five-point likert scale of Very Highly Utilized (VHU), Highly Utilized (HU), Moderately Utilized (MU), Lowly Utilized (LU) and Lowly Utilized (VLU) with weighting values of 5, 4, 3, 2, and 1 point respectively. The instrument was validated by three experts; two experts from Industrial Technology Education, and one expert from the Measurement and Evaluation unit, Faculty of Education. The reliability of the instrument was determined by administering 20 copies of the instrument on 20 teachers of auto-mechanics trade in Rivers State. The data collected was analyzed using Cronbach Alpha which was found to be 0.71 and 0.85, indicating that the instrument was reliable and, hence used to collect data for the study. Data collected was analysed using mean and standard deviation for the research questions. Upper and lower limits of the mean were used as the basis for decision making. Thus; VHU: 4.50 – 5.49, HU: 3.50 – 4.49, MU: 2.50 – 3.49, LU: 1.50 – 2.49 and VLU: 0.05 – 1.49. The null hypotheses were tested at 0.05 level of significance and appropriate degree of freedom using t-test statistics. The null hypotheses were rejected when t-calculated was greater than t-critical value and were not rejected when t-calculated value was less than t-critical value.

Results

Table 1: Mean Ratings and SD of Electronic Ignition System Skills Utilized by Auto-Mechanics Teachers in Southeast Technical Colleges

S/N	Extent to which electronic ignition system skills are utilized by auto-mechanics teachers include;	MVMW Teachers (6 and above) N = 77		MVMW Teachers (0 -5 yrs.) N = 53		Overall N = 131		Decision
		$\bar{x}_1$	SD ₁	$\bar{x}_2$	SD ₂	$\bar{x}_G$	SD _G	
1	Ability to recover transmission Diagnostic Trouble Codes (DTC's)	2.45	1.19	2.11	0.93	2.32	1.11	LU
2	Ability to use knowledge of transmission diagnostic trouble codes	2.44	1.19	2.20	1.15	2.30	1.16	LU
3	Ability to decode ignition Diagnostic Trouble Codes (DTC's)	2.81	0.96	2.64	1.12	2.70	1.06	MU
4	Ability to troubleshoot the crankshaft (CKP) sensors	2.78	1.12	2.55	1.11	2.63	1.11	MU
5	Ability to troubleshoot the camshaft (CMP) wiring for possible damage	2.59	1.13	2.48	1.11	2.52	1.11	MU
6	Ability to perform magnetic sensor testing	2.50	1.11	2.63	1.23	2.56	1.18	MU
7	Ability to record ignition timing using digital multimeter	2.58	0.85	3.43	0.69	3.01	0.77	MU
8	Ability to diagnose defective reluctor sensor	3.02	1.02	2.91	1.09	2.97	1.01	MU
9	Ability to detect signals with oscilloscope	2.44	1.07	2.53	1.07	2.49	1.07	LU
10	Ability to troubleshoot supply voltages with multimeter	3.38	0.97	2.52	0.83	2.95	0.90	MU
11	Ability to conduct a careful visual inspection of the wiring system	2.74	1.02	2.97	1.09	2.86	1.06	MU
12	Ability to test-run the ignition system using the multimeter	2.64	1.10	2.47	1.16	2.54	1.13	MU
13	Ability to troubleshoot the battery to make sure there is ample voltage to start the engine	2.56	1.04	2.21	1.06	2.34	1.05	LU
Cluster Mean/SD		2.69	1.06	2.59	1.05	2.63	1.06	MU

With reference to data presented in Table 1, the mean ratings of 2.81, 2.78, 2.59, 2.50, 2.58, 3.02, 3.38, 2.74, 2.64 and 2.56 are obtained on items number 3 to 8 and 10 to 13 with the indication of moderately utilized responses for the experienced MVMW teachers, while items number 1, 2 and 9 with the mean ratings of 2.45, 2.44 and 2.44 denoting lowly utilized responses by the same respondents respectively. The Table also show that the mean rating range of 2.50 to 3.43 are obtained for the less experienced MVMW teachers on items number 3, 4, 6, 7, 8, 9, 10 and 11 for moderately utilized responses while items number 1, 2, 12 and 13 with mean ratings of 2.11, 2.20, 2.48 and 2.47 denotes lowly utilized responses by the same respondent. Thus, the overall mean ranged from 2.30 to 3.01, with the cluster overall mean rating of 2.63 denoting that the itemized electronic ignition system skills are moderately utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States. Hence, the overall cluster standard deviation of 1.06 depicts that the disparity in the respondents' opinion is close.

Table 2: Difference in Mean Ratings of Experienced and Less Experienced Teachers on Electronic Ignition System Skills

Teachers Years of Experience	N	X	SD	df	P	t-cal	t-tab	Decision
6 and above	77	2.69	1.06	129	.05	0.364	1.984	NS
0 – 5	53	2.59	1.05					

Table 2 shows that the t-calculated value of 0.364 is obtained at .05 level of significance and 129 degrees of freedom with the t-table value of 1.984. Since the t-calculated value 0.364 is less than the t-table value of 1.984; the null hypothesis is therefore not rejected for these items. This means that there is no significant difference in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electronic ignition system skills are utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States. By extension, the years of experiences of the respondents have no significant influence regarding the extent to which electronic ignition system skills are utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States.

Table 3: Mean Ratings and Standard Deviations of Respondents on Utilization of Electric Power Steering System Skills

S/N	Extent to which electric power steering system skills are utilized by auto-mechanics teachers include to;	MVMW Teachers (6 and above) N = 77		MVMW Teachers (0 -5 yrs.) N = 53		Overall N = 131		Decision
		$\bar{x}_1$	SD ₁	$\bar{x}_2$	SD ₂	$\bar{x}_G$	SD _G	
14	Ability to inspect speed sensors	2.85	0.86	2.73	0.79	2.77	0.81	MU
15	Ability to adjust angular position of EPS	2.93	1.00	2.93	0.93	2.93	0.95	MU
16	Ability to replace deformable steering wheel	3.04	0.90	2.89	0.84	2.94	0.86	MU
17	Ability to adjust the steer-by-wire systems.	3.09	0.94	2.74	0.86	2.96	0.92	MU
18	Ability to replaces collapsible steering column	3.15	0.86	2.91	0.91	3.00	0.89	MU
19	Ability to inspect the steer-by-wire systems.	2.74	0.90	2.98	0.90	2.89	0.90	MU
20	Ability to replace torque sensors for eps system	2.89	0.89	2.70	0.88	2.77	0.88	MU
21	Ability to diagnose electronic EPS system controller failures.	2.91	1.07	2.69	1.10	2.80	1.09	MU
22	Ability to use knowledge to fix the actuators for electric power steering	2.74	1.02	2.98	1.09	2.86	1.06	MU
23	Ability to interpret the control algorithm signals that drive the electric motor to provide steering assistance	2.28	1.01	2.26	1.02	2.27	1.02	LU
24	Ability to possess knowledge in replacing faulty strain gauge sensors.	3.38	0.97	2.52	0.83	2.95	0.90	MU
25	Ability to replace steering wheel torque sensor	2.58	0.85	3.43	0.69	3.01	0.77	MU
26	replace the rack and pinion of the steering mechanism	2.55	0.98	2.76	0.91	2.66	0.95	MU
Cluster Mean/SD		2.86	0.94	2.81	0.90	2.81	0.92	MU

Table 3 shows that the mean rating range of 2.74 to 3.38 is obtained for the experienced MVMW teachers on the items numbered 14 to 22, 24 to 26. This indicates that the respondents agree that the itemized electric power steering system skills are moderately utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States. While item number 23 with mean rating of 2.28 denotes lowly utilized response by the same respondents. The Table also shows that the mean ratings range of 2.70 to 2.98 are obtained for the less experienced MVMW teachers on items numbered 14 to 22, 24 to 26 depicting moderately utilized responses while item number 51 with mean rating of 2.26 depicts lowly utilized response by the less experienced MVMW teachers. Hence, the overall mean ratings ranged from 2.77 to 3.01 with the overall cluster mean rating of 2.81 showing that electric power steering system skills are moderately utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States. Thus, the overall cluster standard deviation of 0.92 depicting that the respondents' opinion is homogeneous.

Table 4: t-test on Teaching Experience and Utilization of Electric Power Steering System Skills by Auto-Mechanics Teachers in Southeast Technical Colleges

Teachers Years of Experience	N	X	SD	df	P	t-cal	t-tab	Decision
6 and above	77	2.93	0.94	129	.05	0.333	1.984	NS
0 - 5	53	2.84	0.92					

In Table 4, the t-calculated value of 0.333 is obtained at 0.05 level of significance and 129 degrees of freedom. Since the t-calculated value obtained is less than the t-table value, the null hypothesis insignificant and thus, not rejected. By implication, a significant difference does not exist in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electric power steering system skills are utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States.

Discussion

The findings of this study revealed that the results emanating from the data analysis showed that electronic ignition system skills are moderately utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States. According to the itemized responses, electronic ignition system is moderately utilized to teach how to; ability to record ignition timing using digital multimeter, ability to diagnose defective reluctor sensor, ability to check supply voltages with multimeter, ability to conduct a careful visual inspection of the wiring system, ability to decode ignition Diagnostic Trouble Codes (DTC's), ability to check the crankshaft (CKP) sensors, among others. However, as indicated, electronic ignition system skills when utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States can be said to be paramount in ensuring effective skill acquisition in contemporary automobiles in present-time world. Based on the hypothesis tested, there is no significant difference in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electronic ignition system skills are utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States.

In agreement with the above finding, Al-Alwani (2023) identified some of the skills and benefits of electronic ignition system to include (1) recognizing components, (2) checking components, (3) analyzing the ignition circuit, (4) altering the ignition system, and (5) modeling the ignition system. Thus, Adenwala (2020) added that electronic ignition system is developed to improve reliability, improve mileage and decrease emission. It works under the engine to provide the spark to the spark plug. The author maintained that to burn the lean mixture in the combustion chamber electronic ignition system produces a stronger spark that is really great as compared to the battery and magneto ignition system.

The study on the above subject have shown that electric power steering system skills are moderately utilized by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States. This is shown in its capacity to be used in replacing steering wheel torque sensor, replace collapsible steering column, adjust the steer-by-wire systems, possess knowledge in replacing faulty strain gauge sensors, replace deformable steering wheel, adjust angular position of EPS, among others. Hypothetically, there is no significant difference in the mean ratings of experienced and less experienced auto-mechanic teachers on the extent to which electric power steering system skills are utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States.

The findings above is in harmony with the findings of Nick (2023) who stated that electric power steering systems work by using an array of sensors, control units, an electric motor and requires digital skills for maintenance services. Baca (2023) also highlighted; avoid forced steering, steer clear of puddles, inspect rack steer boots for tears, avoid steering while stationary, regularly inspect the drive belt and scheduled power steering system check during service. Hence, the need for the utilization of new technological skills by auto-mechanics teachers for teaching auto-mechanics among technical colleges in Southeast States.

Conclusion

The study discussed the extent of utilization of new technological skills by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States. It discussed the electronic ignition system and electric power steering system skills utilized by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States. The findings of the study have shown the need for the utilization of trending technological by auto-mechanics teachers for teaching auto-mechanics in technical colleges in Southeast States especially, to ensure the inculcation acceptable standards into the learners for effectiveness upon graduation. Hence, it is, thereafter, believed that effective measures are taken to ensure that the auto-mechanics teachers utilize the afore-discussed skills, that would undoubtedly enhanced teaching for productivity and economic development, invariably increased employment and reduces involvement into social vices upon graduation by technical college students in Southeast States.

Recommendations

Based on the findings, the recommendations made were as follows

1. Technical College Teachers should embrace effective training of Automobile Mechanic work for competency improvement on electronic ignition system skills and capacity development.
2. Technical College Teachers should understand the working principles of electronic ignition system and electronic power system in order to effectively teach the students in auto-mechanics in technical colleges.

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