

Assessment of Motivational Strategies for Skill Acquisition in Automobile Technology Among Colleges of Education Students in South-South and South-East, Nigeria

Ofonime Harry Otuo, PhD; Samuel Amos Ikpe, PhD & Williams Kennedy George

Department of Technical Education

Akwa Ibom State College of Education, Afaha Nsit, Nigeria

Corresponding Email: georgekennedyresearchers@yahoo.com

Abstract

This study examined the motivational strategies adopted for students' skill acquisition in Automobile Technology in Colleges of Education in South-South and South-East Nigeria. Three research questions, three hypotheses and descriptive survey research design was adopted for the study. The population consisted of forty-three (43) Automobile Technology lecturers, comprising 19 lecturers from South-South Colleges of Education (SSCOE) and 24 from South-East Colleges of Education (SECOE). A sample of thirty-five (35) lecturers (15 from SSCOE and 20 from SECOE), was randomly selected. Data were collected using a 30-item questionnaire, face-validated by three experts and tested for reliability using Cronbach alpha, yielding an overall reliability index of 0.78, with 0.77, 0.75 and 0.81 for Sections B, C and D, respectively. Respondents rated items on a five-point scale. Data were analyzed using mean and standard deviation for the research questions, while independent t-test was used to test the hypotheses at a 0.05 significance level. Findings revealed lecturers moderately agreed that Colleges implement motivational strategies before enrolment, including career guidance, scholarships, flexible admissions, industry partnerships and internship information. During training, modern facilities, industrial visits, interactive teaching, multimedia tools and expert-led workshops enhanced skill acquisition. Post-training strategies such as job placements, startup incentives, apprenticeships, further education support and alumni mentorship were less applied, showing weak follow-up support. No significant regional differences emerged. The study recommended strengthening post-training support, industry collaborations, startup grants and alumni mentorship.

Keywords: *Motivational Strategies, Students, Skills Acquisition, Automobile Technology, Colleges of Education, Nigeria*

Introduction

Education is the process through which individuals acquire knowledge, skills, values and attitudes, allowing them to realize their full potential. It encompasses the transfer of knowledge and the development of cognitive, social and emotional abilities through various methods of teaching and learning (Amadioha & Akor, 2018). In response to the demand for high-quality teacher education, Advanced Teacher Colleges and Colleges of Education were founded in Nigeria in 1973 (Kola & Taiwo, 2022). The objectives of the Colleges of Education align with Nigerian broader educational goals, with a focus on training highly qualified, skilled and innovative teachers capable of advancing the Nigerian education system. These institutions are responsible not only for imparting essential teaching skills but also for deepening understanding of educational theories and practices to address the specific needs of Nigerian schools (FRN, 2013).

According to FRN (2013) and Usman (2023), Nigeria Colleges of Education represent the third category of tertiary institutions that offer Technical Vocational Education and

Training (TVET), aimed at equipping students with scientific, technological and pedagogical expertise for effective workplace participation. The National Commission for Colleges of Education (NCCE) was established in 1989 to revise, update and formulate policies aimed at ensuring the standardization and quality control of programs in Colleges of Education (Ayonmike, 2020; Usman, 2023). These institutions are tasked with training teachers for primary and junior secondary schools and conferring the Nigerian Certificate in Education (NCE) (Kola & Taiwo, 2022). The Colleges of Education provide TVET programs that span three years, culminating in the award of the Nigeria Certificate in Education (NCE), which is the minimum qualification for teaching basic education in areas such as Agricultural Education, Business Education, Home Economics Education, Automobile Technology, Building Technology, Metalwork Technology and Woodwork Technology (FRN, 2013; Owo & Deebom, 2020).

In Nigerian Colleges of Education, the main goal of automobile technology education, as stated in the Federal Republic of Nigeria (FRN, 2013), is to produce highly skilled graduates who can become facilitators of automobile education in tertiary institutions, entrepreneurs in automobile trades or gain employment in automobile industries. Akpakpavi (2014) noted that the automobile is a vital mode of transportation in contemporary society. Bindu et al. (2017) emphasized that the modular design of automobile technology programs in tertiary institutions supports the efficient absorption of learning materials and components. Idris and Ogbuanya (2015), stated that individuals who undergo both school-based and industry-based training in vehicle repair and maintenance, including the use of computerized diagnostic tools, acquire substantial expertise. Mbakurem (2016), described an automobile or motor vehicle, as a sophisticated technical system where various subsystems work together to fulfill a particular function.

The rapid advancements in automobile technology and the growing demand for skilled professionals in the automotive industry have underscored the importance of effective skill acquisition strategies in TVET (UNESCO, 2023). Curzon (2015) defined skill acquisition as the process of undergoing training in a specific task or function until achieving proficiency. Asanibare (2012) emphasized that skill acquisition involves channeling human energy and providing opportunities for individuals to contribute to their personal development and that of their communities. Ayonmike and Okeke (2016) stated that skills are the expertise gained through training, enabling individuals to perform intellectual or physical tasks with ease. Cranmer (2014) characterized skills as abilities developed through focused, systematic and consistent effort, enabling individuals to carry out complex tasks or job functions involving ideas (cognitive skills), things (technical skills) or people (interpersonal skills).

According to Mbakurem (2016), students are more likely to put in the effort to acquire skills if their interest is piqued. Adegbile (2015) pointed out that graduates are more likely to succeed if they pursue careers that align with their broader interests. Ezeji and Okorie (2012), highlighting the importance of skill acquisition for national development, argued that Nigerian social and economic challenges could be addressed more effectively by providing sufficient training in skills, raw materials, machinery and equipment. Despite multiple revisions of Colleges of Education programs for standard and quality control in 1990, 1996, 2002, 2008, 2012 and 2020, studies have highlighted shortcomings in the efficiency and effectiveness of these reviews (Akomolafe & Adesua, 2019). Oriola (2019) expressed concern about the decreasing interest among students applying for or studying Automobile Technology. Okafor (2012) noted that many students in Colleges of Education are hesitant to pursue Automobile Technology and those who do often lack genuine interest, with some being pressured by their parents to enroll in the course.

A key concern for employers in Nigerian automobile-related industries is the level of motivation and skill demonstrated by graduates of Automobile Technology programs. Motivation plays a crucial role in determining student engagement, learning outcomes and practical competency in technical education. Research has shown that both intrinsic motivation (interest in learning and career prospects) and extrinsic motivation (rewards, teacher encouragement and job opportunities) significantly impact students' participation and performance in skill-based fields (Ryan & Deci, 2023). In automobile technology, practical experiences, problem-solving tasks and well-organized learning environments are essential for mastering skills (Bello & Adegbite, 2022). According to Adebayo and Usman (2023), Abdullahi and Okonkwo (2023), Brown and Etim (2023), institutions support student motivation in Automobile Technology by offering career counseling, organizing fairs and school visits, maintaining flexible admissions, providing information on internships and apprenticeships, aligning curricula with career prospects and equipping workshops.

Similarly, Oriola (2019), Eze and Nwachukwu (2023) stated that institutions enhance motivation during training through modern facilities, industrial visits, interactive teaching, multimedia tools, industry-linked internships, financial aid, creativity-based assessments, expert-led workshops, student recognition and career counseling. Akpakpavi (2014), Oriola (2019), Bello and Adegbite (2022) emphasized career guidance and job placement support for graduates, while Abdullahi and Okonkwo (2023) identified partnerships with industries for direct employment, startup incentives, skill exhibitions and incubation centers for innovation. Despite these efforts, Eze and Nwachukwu (2023) observed low student motivation, inadequate skill acquisition and declining enrollment in automobile programs. Okpara and Onyemerekaya (2014) identified lack of motivation as a key contributor to unemployment. Chidoka (2012) recommended the use of practical tools, videos, machines and drawing studios to enhance learning.

Eze and Aluko (2023) advocated motivational strategies like incentive-based learning, mentorship and hands-on lab sessions. Owo and Deebom (2020) observed that students involved in structured internships and collaborations developed stronger skills and motivation. Adekunle and Usoro (2023) linked engaging teaching and feedback with higher performance. Brown and Etim (2023), emphasized the role of technology-enhanced learning such as simulations, AR and online platforms in improving motivation and skills. Brown and Etim (2023) found blended, project- and problem-based learning effective abroad. In contrast, Nigerian Colleges still rely on outdated lecture methods, limiting motivation and hands-on experience (Adebayo & Usman, 2023). Challenges like ineffective teaching, obsolete curricula, poor facilities, lack of equipment and weak industry ties persist (Akomolafe & Adesua, 2019; Owo & Deebom, 2020). According to Bello and Adegbite (2022), limited college-industry collaboration hampers students' real-world readiness. Eze and Nwachukwu (2023) also cited poor teacher motivation due to low pay and limited development opportunities. These issues underscore the need to assess and implement effective motivational strategies to enhance student engagement and skill acquisition in Automobile Technology across Colleges of Education in South-South and South-East Nigeria.

Statement of the Problem

The increasing demand for skilled automobile technicians in Nigeria underscores the need for effective skill acquisition in Colleges of Education offering automobile technology programs (UNESCO, 2023). Studies indicate that graduates from these programs often lack the technical skills required by employers (Eze & Nwachukwu, 2023). The persistent skill gap and poor employability of graduates in the automotive sector reflect deficiencies in student motivation, instructional approaches and the overall quality of training at these institutions

(Adebayo & Usman, 2023). Research highlights that traditional lecture-based teaching methods dominate in many Colleges of Education, restricting students' practical exposure, problem-solving tasks and real-world applications of automobile technology. Additionally, limited access to modern automotive tools, simulators and advanced workshop facilities hampers students' learning experiences (Eze & Aluko, 2023). Another challenge affecting student motivation and skill development is the weak linkage between Colleges of Education and the automotive industry (Abdullahi & Okonkwo, 2023). Many programs lack industry-relevant curricula, work-based learning opportunities and apprenticeship systems, which are essential for developing practical skills and real-world problem-solving abilities (Brown & Etim, 2023).

Studies revealed that many instructors are not adequately trained in contemporary automotive teaching methods, student-centered motivational strategies and the use of digital teaching tools (Aina, 2023). Low salaries, poor working conditions and limited opportunities for career advancement have led to low teacher morale, subpar instructional delivery and ineffective student engagement (Adekunle & Usoro, 2023). Addressing these gaps is vital for improving student motivation, skill acquisition and the overall effectiveness of automobile technology education programs. Research showed that industry-driven TVET models in developed nations, which integrate work-based learning and student-centered motivational approaches, significantly enhance students' skill acquisition and employability (UNESCO, 2023). Thus, this study aims to examine the effectiveness of various motivational strategies, including incentive-based learning, industry-integrated training, teacher-student engagement models and technology-enhanced teaching methods, in improving students' skill acquisition in automobile technology.

Objectives of the Study

The following specific objectives were formulated to guide the study:

1. before students' enrolment in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.
2. during students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.
3. after students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

Research Questions

To achieve the objectives of this study, the following research questions were formulated to guide the study:

1. What are the motivational strategies adopted before students' enrolment in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?
2. What are the motivational strategies adopted during students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?
3. What are motivational strategies adopted after students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?

Null Hypotheses

The following null hypotheses were formulated to guide the study:

- HO₁: There is no significant difference in the Automobile Technology motivational strategies adopted before students' enrolment in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

- HO₂: There is no significant difference in the Automobile Technology motivational strategies adopted during students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.
- HO₃: There is no significant difference in the Automobile Technology motivational strategies adopted after students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

Methodology

The study adopted descriptive survey design which deals with present phenomena in terms of conditions, practices, views, beliefs, processes, relationships or trends. According to Nworgu (2018), survey research design aims to systematically collect and describe data concerning the characteristics, features or facts about a given population. South-South and South-East Nigeria, two distinct but contiguous geopolitical zones, encompass eleven states collectively known for their educational, industrial and economic potential. The South-South zone includes Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers States, while the South-East comprises Abia, Anambra, Ebonyi, Enugu and Imo States. These regions are culturally diverse and are characterized by vibrant economies, oil and gas in the South-South and commerce and manufacturing in the South-East (& Eze, 2010). Both zones also have significant youth populations and a growing number of tertiary institutions, including Colleges of Education, which are central to teacher training and vocational education (Okolie, Igwe & Elom, 2019). Despite these strengths, both regions face challenges in technical skill development due to infrastructural limitations, poor funding of vocational programmes and gaps in instructional delivery (Nwachukwu, 2014).

Colleges of Education in South-South and South-East Nigeria play a pivotal role in preparing future educators and technicians, especially in vocational areas such as automobile technology. However, the effectiveness of skill acquisition in these institutions often hinges on the quality of teaching methods and the motivational strategies employed by instructors (Uwaifo, 2009). Students in these regions contend with low morale and inadequate practical exposure, primarily due to outdated equipment, limited industry linkages and insufficient incentive systems (Ogbuanya & Owodunni, 2015). Understanding the educational environments of both zones is essential, as their distinct socio-economic characteristics influence how motivation is perceived and how students respond to skills training. Thus, the South-South and South-East offer a rich and contrasting setting to examine how institutional and regional factors affect vocational skill development in the technical education landscape.

The population of this study comprised all the forty-three (43) Automobile Technology lecturers in Technical Education, Colleges of Education. The population comprised of 19 lecturers in South-South Colleges of Education (SSCOE) and 24 South-East Colleges of Education (SECOE), Nigeria. Population of the study according to Bornstein, Jager and Putnick (2013), is the entirety of all elements under observation, which constitutes all things in any field of investigation. A sample size of thirty-five (35) students comprising of 15 in South-South Colleges of Education (SSCOE) and 20 South-East Colleges of Education (SECOE) were randomly selected for the study. A sample refers to a section or subset of the study population chosen for investigation through a sampling process (Taherdoost, 2016). In the same vein, Nardi (2018), stated that sampling technique is essential for estimating the required data volume and comprehending the data gathering process in a population to fulfill the study objectives. Yamane formula was used for calculating the sample size. According to Islam (2018), the Yamane formula provides a simplified formula to calculate sample sizes.

The data for the study were gathered from both primary and secondary sources. The primary data were collected using questionnaire while the secondary data were gathered from

text books, journals and online materials. The researchers developed a 30-item structured questionnaire titled: Motivational Strategies for Students' Skill Acquisition in Automobile Technology in Colleges of Education Questionnaire (MOSSSAATCOE). A questionnaire according to Nardi (2018) is the most common instrument or technique used to acquire descriptive data from a sample group in survey research because the respondents have the advantage of supplying data and information from the source. The instrument was divided into four sections; A - D. Section A sourced for information on the motivational strategies before enrolling in the programme, section B sourced for information on the motivational strategies in/during the programme, while section C sourced for information on motivational strategies after the programme. The instrument was designed with a 5-point rating scale of Strongly Agreed (SA=4.50-5.00), Moderately Agreed (MA=3.50-4.49), Lowly Agreed (LA=2.50-3.49), Undecided (U =1.50-2.49), Strongly Disagreed (SD =1.00-1.49) used to answer research questions.

The research instruments were given to three research experts for face validation. Two of the experts from the Department of Measurement and Evaluation and one expert in Department of Vocational Teacher Education, University of Nigeria, Nsukka. These experts were requested to read through the instrument item by item, make corrections, indicate the suitability of the items, language used and the arrangement of the items in logical and chronological sequence. Their comments, suggestions, corrections and other inputs were included in the instrument and used for the final copy. To ensure the reliability of the instrument, it was trial-tested on 5 lecturers who were not part of the study. Cronbach alpha statistics was used to determine the reliability coefficient of the instrument which yielded overall reliability index of .78 comprising of .77, .75 and .81 for section B, C, D and E respectively indicating that the instrument was reliable. Cronbach's alpha test according to Taber (2017) is the most commonly used method to assess the accuracy of scales with value between 0 and 1. Cronbach's alpha coefficient should be between 0.7 and above to demonstrate the scale's reliability (Cronbach, 1951).

The administration of the instrument was done with the assistance of three research assistants who were briefed before administration of the instrument to the students. A letter of information and consent were part of the information provided to the respondents. Since the questionnaire was distributed face to face, the participants read the letter of information and consent form and confirmed their voluntary participation. The twenty-five (25) copies of the questionnaire administered were all retrieved, indicating a 100% instrument retrieval. Mean scores and Standard Deviation were used in answering the research questions while t-test statistics was used to test the three null hypotheses at .05 level of significance. The data collected were analyzed using Statistical Package for the Social Sciences 26 (SPSS).

Results and Analysis of Results

The data analysis and interpretation of results are presented according to the research questions and hypothesis formulated for the study. Data of each research question are presented on a separate table to aid comprehension of the analysis and interpretation of results.

Research Question 1: What are the motivational strategies adopted before students' enrolment in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?

Table 1: *Mean rating of Automobile Technology lecturers on the motivational strategies adopted before students' enrolment in Colleges of Education in South-South and South-East, Nigeria.*

S/N	SECTION B: Motivational Strategies before Students' Enrollment in Automobile Technology	SSCOE (N=15)		SECOE (N=20)	
		$\bar{x}$	SD	$\bar{x}$	SD
1.	Career counseling is provided to inform prospective students about benefits of studying Automobile Technology.	3.70	0.83	3.63	0.60
2.	Programs are promoted through career fairs and school visits.	3.91	0.61	3.61	0.68
3.	Scholarships and financial incentives are available to encourage enrollment.	3.74	0.67	3.57	0.73
4.	The curriculum is structured to demonstrate clear career prospects in the automobile industry	3.86	0.79	3.73	0.61
5.	Industry partnerships and mentorship programs are organized to boost interest.	4.28	0.55	4.33	0.57
6.	Successful automobile professionals are invited to inspire prospective students.	3.61	0.37	3.56	0.61
7.	There is a well-equipped automobile workshop that attracts prospective students to the program	3.79	0.60	3.77	0.67
8.	Media campaigns are used to create awareness about career opportunities in Automobile Technology	3.64	0.66	4.06	0.53
9.	The institution provides flexible admission requirements to accommodate students interested in Automobile Technology	4.41	0.49	3.50	0.62
10.	Information on internships and apprenticeships is readily available to prospective students.	4.30	0.72	3.63	0.51
Grand Mean and Standard Deviation		3.93	0.63	3.74	0.61

*NOTE: SA (4.50-5.00), MA (3.50-4.49), LA (2.50-3.49), U (1.50-2.49), SD (1.00-1.49)

The analysis of data in Table 1 revealed that Automobile Technology lecturers in both South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE) generally agreed that a range of motivational strategies are employed before students' enrolment. The mean scores for SSCOE ranged from 3.61 to 4.41, while SECOE scores ranged from 3.50 to 4.33, indicating moderate to high adoption of these strategies. Industry partnerships and mentorship programs recorded the highest mean ratings for both regions (SSCOE = 4.28; SECOE = 4.33), revealing that linking prospective students with industry professionals is a major strategy to boost interest. Flexible admission requirements and information on internships also received relatively high ratings, particularly in SSCOE (4.41 and 4.30, respectively), highlighting institutional efforts to make enrollment accessible and career-oriented. Lower, but still moderate, scores were observed for the involvement of successful automobile professionals and media campaigns, indicating some variation in emphasis across strategies. The grand mean scores of 3.93 (SSCOE) and 3.74 (SECOE) reflected an overall moderate-to-high application of motivational strategies before enrollment, demonstrating that these Colleges actively engaged prospective students through counseling, career fairs, financial incentives, industry linkage and practical exposure to encourage enrollment in Automobile Technology programs.

Research Question 2: What are the motivational strategies adopted during students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?

Table 2: Mean rating of Automobile Technology lecturers on the motivational strategies adopted during students' training in Colleges of Education in South-South and South-East, Nigeria.

S/N	SECTION C: Motivational Strategies for Students During Training in Automobile Technology	SSCOE (N=15)		SECOE (N=20)	
		$\bar{x}$	SD	$\bar{x}$	SD
1.	Modern instructional facilities and equipment are provided to improve students' interest and engagement in Automobile Technology	3.59	0.51	4.14	0.37

2.	The institution organizes regular industrial visits and field trips to expose students to real-world automobile practices	4.35	0.73	3.56	0.59
3.	Automobile Technology lecturers adopt interactive teaching methods to sustain students' interest in the training	3.76	0.68	3.61	0.54
4.	The use of multimedia tools (videos, simulations, online resources) in teaching Automobile Technology improves students' learning motivation	3.72	0.55	4.27	0.71
5.	The College collaborates with automobile industries to offer internship and apprenticeship programs that encourage student engagement	3.67	0.71	3.57	0.65
6.	The institution provides financial support such as scholarships and grants to students excelling in Automobile Technology	4.39	0.64	4.09	0.53
7.	Assessment and grading methods in Automobile Technology courses are structured to reward creativity and innovation	3.74	0.59	3.52	0.66
8.	The college organizes workshops and seminars featuring successful automobile experts to inspire students	4.42	0.60	3.69	0.64
9.	Recognition and awards are given to outstanding students in automobile training programs to motivate others	4.39	0.69	4.26	0.48
10.	Career counseling services are available to help students understand the future prospects of acquiring automobile skills	3.83	0.54	3.72	0.69
Grand Mean and Standard Deviation		3.99	0.62	3.84	0.59

***NOTE:** SA (4.50-5.00), MA (3.50-4.49), LA (2.50-3.49), U (1.50-2.49), SD (1.00-1.49)

The data in Table 2 showed that Automobile Technology lecturers in both South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE) moderately to highly implement motivational strategies during students' training. For SSCOE, mean scores ranged from 3.59 to 4.42, while SECOE scores ranged from 3.52 to 4.27, reflecting consistent application of multiple motivational approaches. Strategies such as organizing workshops and seminars featuring successful automobile experts (SSCOE = 4.42; SECOE = 3.69), providing financial support like scholarships and grants (SSCOE = 4.39; SECOE = 4.09) and recognizing outstanding students (SSCOE = 4.39; SECOE = 4.26) recorded the highest mean ratings, indicating strong emphasis on reward-based and career-oriented incentives. The use of modern instructional facilities, multimedia tools and interactive teaching methods received moderate to high scores, suggesting a focus on enhancing student engagement and practical skill acquisition. Industrial visits and field trips showed a higher mean in SSCOE (4.35) than in SECOE (3.56), implying regional variation in hands-on exposure. The grand mean scores of 3.99 (SSCOE) and 3.84 (SECOE) reflected an overall moderately high implementation of motivational strategies during training, demonstrating that Colleges actively employ both intrinsic and extrinsic methods to sustain students' interest, engagement and competence in Automobile Technology programs.

Research Question 3: What are motivational strategies adopted after students' training in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria?

Table 3: Mean rating of Automobile Technology lecturers on the motivational strategies adopted after students' training in Colleges of Education in South-South and South-East, Nigeria.

S/N	SECTION D: Motivational Strategies for Students After Training in Automobile Technology	SSCOE (N=15)		SECOE (N=20)	
		$\bar{x}$	SD	$\bar{x}$	SD
1.	The institution provides career guidance and job placement services to assist graduates in securing employment in the automobile industry	3.28	0.67	3.41	0.44
2.	The institution offers startup grants or incentives for automobile technology graduates to establish their own workshops	3.44	0.49	3.22	0.47

3.	Automobile Technology graduates have access to apprenticeship opportunities to gain additional hands-on experience	3.39	0.41	3.30	0.68
4.	The college collaborates with automobile industries to create direct employment pathways for its graduates	3.41	0.77	3.38	0.35
5.	The institution provides information and support for graduates to further their education in specialized automobile technology fields	3.49	0.69	3.24	0.40
6.	There are monitoring and follow-up mechanisms to track the career progression of Automobile Technology graduates	3.37	0.65	3.42	0.32
7.	The institution organizes annual skill exhibitions where graduates can showcase their expertise to potential employers and investors	3.45	0.73	3.39	0.37
8.	Recognition and awards are given to outstanding graduates to encourage continuous excellence in the automobile industry	3.42	0.51	3.37	0.52
9.	The institution provides an incubation center where graduates can develop innovative automobile solutions	3.36	0.72	3.34	0.49
10.	Alumni mentorship networks programs are available to support students after completing their Automobile Technology training	3.38	0.55	3.44	0.53
Grand Mean and Standard Deviation		3.40	0.62	3.35	0.46

***NOTE:** SA (4.50-5.00), MA (3.50-4.49), LA (2.50-3.49), U (1.50-2.49), SD (1.00-1.49)

The data in Table 3 showed that motivational strategies adopted after students' training in Automobile Technology in both South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE) are implemented at a moderate level. Mean scores for SSCOE ranged from 3.28 to 3.49, while SECOE scores ranged from 3.22 to 3.44, indicating consistent but moderate attention to post-training motivation. Strategies such as providing information and support for further education (SSCOE = 3.49; SECOE = 3.24), offering startup grants or incentives (SSCOE = 3.44; SECOE = 3.22) and organizing skill exhibitions (SSCOE = 3.45; SECOE = 3.39) received relatively higher ratings, reflecting institutional efforts to support graduates' career advancement and entrepreneurial initiatives. Other strategies, including career guidance, job placement services, apprenticeship opportunities, alumni mentorship and incubation centers, recorded moderate scores, showed partial implementation of post-training support mechanisms. The grand mean scores of 3.40 (SSCOE) and 3.35 (SECOE) indicated that while Colleges provide some motivational support after training, there is room for strengthening post-graduation interventions to enhance employability, industry engagement and continuous skill development for Automobile Technology graduates.

Hypotheses 1: There is no significant difference in the Automobile Technology motivational strategies adopted before students' enrolment in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

Table 4: *t-test analysis on the motivational strategies adopted before students' enrolment in Colleges of Education in South-South and South-East, Nigeria.*

Variable	N	$\bar{x}$	SD	df	t-cal.	t-value	Decision
SSCOE	15	3.93	0.63	33	0.83	1.96	NS
SECOE	20	3.74	0.61				

Note, NS = Not Significant

The t-test analysis in Table 4 revealed that there is no significant difference in the motivational strategies adopted before students' enrolment in Automobile Technology between South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE). The mean scores for SSCOE (3.93) and SECOE (3.74) are relatively close, with standard deviations of 0.63 and 0.61, respectively, reflecting similar levels of implementation across both regions. The calculated t-value of 0.83 is less than the critical t-value of 1.96 at 33 degrees of freedom, confirming that the observed difference is not statistically significant. This finding showed that both SSCOE and SECOE employed comparable motivational strategies before

student enrolment which demonstrate a consistent approach across the two geopolitical zones in encouraging prospective students to pursue Automobile Technology programs.

Hypotheses 2: There is no significant difference in the Automobile Technology motivational strategies adopted during students' training on Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

Table 5: *t-test analysis of the mean scores of Automobile Technology lecturers on the motivational strategies adopted during students' training in Colleges of Education in South-South and South-East, Nigeria.*

Variable	N	$\bar{x}$	SD	df	t-cal.	t-value	Decision
SSCOE	15	3.99	0.62	33	0.77	1.96	NS
SECOE	20	3.84	0.59				

Note, NS = Not Significant

The t-test results in Table 5 showed that there is no significant difference in the motivational strategies adopted during students' training in Automobile Technology between South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE). The mean scores for SSCOE (3.99) and SECOE (3.84), with standard deviations of 0.62 and 0.59 respectively, indicated a similar level of application of motivational strategies across both Colleges. The calculated t-value of 0.77 is lower than the critical t-value of 1.96 at 33 degrees of freedom, confirming that the difference is not statistically significant. This implies that both SSCOE and SECOE consistently implemented comparable strategies during training to enhance student engagement, interest and skill acquisition in Automobile Technology programs.

Hypotheses 3: There is no significant difference in the Automobile Technology motivational strategies adopted after students' training on in Automobile Technology in Colleges of Education in South-South and South-East, Nigeria.

Table 6: *t-test analysis on the motivational strategies adopted after students' training in Colleges of Education in South-South and South-East, Nigeria.*

Variable	N	$\bar{x}$	SD	df	t-cal.	t-value	Decision
SSCOE	15	3.40	0.62	33	0.81	1.96	NS
SECOE	20	3.35	0.46				

Note, NS = Not Significant.

The t-test analysis in Table 6 showed that there is no significant difference in the motivational strategies adopted after students' training in Automobile Technology between South-South Colleges of Education (SSCOE) and South-East Colleges of Education (SECOE). The mean scores for SSCOE (3.40) and SECOE (3.35), with standard deviations of 0.62 and 0.46 respectively, reflected similar levels of post-training motivational support provided to graduates in both Colleges. The calculated t-value of 0.81 is less than the critical t-value of 1.96 at 33 degrees of freedom, confirming that the observed difference is not statistically significant. This finding revealed that the Colleges of Education employed comparable post-training motivational strategies, indicating a consistent approach to supporting graduates' career progression, entrepreneurship and continued skill development in Automobile Technology.

Discussion of Findings

The findings for Research Question one indicated that Colleges of Education in both the South-South and South-East regions of Nigeria moderately to highly adopted motivational

strategies before students' enrolment in Automobile Technology programs. Lecturers reported that initiatives such as career counseling, industry partnerships, mentorship programs, flexible admission requirements and information on internships were consistently implemented, with grand mean scores of 3.93 for SSCOEE and 3.74 for SECOE, reflecting an overall moderate-to-high application of pre-enrolment strategies. The corresponding hypothesis one further confirmed that there was no significant difference between the two regions, indicating that these motivational strategies are applied uniformly across the geopolitical zones. These results align with previous studies emphasizing the importance of pre-enrolment guidance and awareness campaigns in attracting students to technical education programs. For instance, Adebayo and Usman (2023) highlighted that career counseling, school visits and information on industry prospects positively influence student interest and enrolment in vocational courses, while Bello and Adegbite (2022) underscored the role of industry partnerships in stimulating student motivation. Conversely, Okafor (2012) and Oriola (2019) noted that despite institutional efforts, some students still exhibit low interest due to parental pressure or inadequate exposure to practical career benefits, suggesting that motivational strategies, while effective, may require continuous enhancement to maximize student engagement before enrolment.

The findings for Research Question two showed that Colleges of Education in both South-South and South-East Nigeria moderately to highly implemented motivational strategies during students' training in Automobile Technology programs. Lecturers indicated that strategies such as organizing workshops and seminars with industry experts, providing financial incentives, using multimedia tools, facilitating industrial visits and recognizing outstanding students were consistently applied, with grand mean scores of 3.99 for SSCOEE and 3.84 for SECOE. The corresponding hypothesis two confirmed that there was no significant difference between the regions, indicating that both geopolitical zones employed similar strategies to maintain student engagement and enhance skill acquisition during training. These findings corroborate previous studies that highlight the positive impact of interactive teaching, modern facilities and reward-based strategies on students' motivation and learning outcomes. For example, Adebayo and Usman (2023) and Brown and Etim (2023) emphasized that multimedia tools, structured internships and hands-on practical sessions enhance student interest and competence in technical programs, while Owo and Deebom (2020) observed that collaboration with industries through apprenticeships strengthens practical skill development. On the other hand, studies by Akomolafe and Adesua (2019) and Eze and Nwachukwu (2023) noted that inadequate facilities, weak industry linkages and outdated teaching methods in some Colleges can limit the effectiveness of these motivational strategies, suggesting that while strategies are moderately applied, there is room for further enhancement to optimize student engagement and skill mastery.

The findings for Research Question three revealed that motivational strategies adopted after students' training in Automobile Technology in both South-South and South-East Colleges of Education are implemented at a moderate level. Lecturers reported that strategies such as providing career guidance, job placement services, startup incentives, apprenticeship opportunities, alumni mentorship programs and skill exhibitions are applied to support graduates, with grand mean scores of 3.40 for SSCOEE and 3.35 for SECOE. The corresponding hypothesis three indicated no significant difference between the two regions which showed that post-training motivational efforts are comparably implemented across the geopolitical zones. These findings align with earlier studies emphasizing the importance of post-training support for enhancing employability and continuous skill development. For instance, Akpakpavi (2014) and Abdullahi and Okonkwo (2023) highlighted that career guidance, mentorship and industry-linked incentives improve graduates' readiness for employment and entrepreneurial

ventures, while Eze and Aluko (2023) stressed the value of structured follow-up mechanisms and skill exhibitions in sustaining motivation after training. Conversely, research by Okpara and Onyemerekaya (2014) and Eze and Nwachukwu (2023) stated that limited institutional support, weak industry collaboration and inadequate monitoring of graduate progress can undermine the effectiveness of post-training strategies, indicating that although Colleges provide some motivational support, there remains significant scope for strengthening post-training interventions to maximize graduate employability and professional development.

Conclusion

The study established that Colleges of Education in both South-South and South-East Nigeria moderately to highly implement motivational strategies before, during and after students' training in Automobile Technology programs, with no significant differences observed between the two regions. Pre-enrolment strategies such as career counseling, industry partnerships and flexible admission requirements, as well as training-phase initiatives including workshops, multimedia tools and financial incentives, were consistently applied to enhance student interest and engagement. Post-training support, encompassing career guidance, mentorship, apprenticeship opportunities and skill exhibitions, was moderately provided to facilitate graduate employability and continuous professional development. The findings underscore the critical role of motivational strategies in improving students' skill acquisition, engagement and readiness for the automobile industry, while also highlighting areas particularly post-training support and industry linkage where further enhancement is necessary to optimize outcomes and ensure graduates are fully equipped to meet the demands of the technical workforce.

Recommendations

Based on the findings of the study, it was recommended that:

1. Colleges of Education should strengthen pre-enrolment motivational strategies by enhancing career counseling, industry partnerships and awareness campaigns to attract genuinely interested students.
2. Institutions should expand the use of modern instructional facilities, multimedia tools and interactive teaching methods to sustain student engagement and improve skill acquisition during training.
3. Colleges should establish stronger collaborations with automobile industries to provide structured internships, apprenticeships and hands-on practical experiences for students.
4. Post-training support mechanisms, including career guidance, mentorship programs, startup incentives and skill exhibitions, should be enhanced to improve graduate employability and entrepreneurship.
5. Continuous professional development and training for lecturers should be prioritized to ensure the effective implementation of motivational strategies and up-to-date instructional methods in Automobile Technology programs.

Acknowledgement

The researcher sincerely acknowledges the Tertiary Education Trust Fund (TETFund) for generously sponsoring the research and publication titled "Assessment of Motivational Strategies for Skill Acquisition in Automobile Technology Among Colleges of Education Students in South-South and South-East, Nigeria" under the 2014–2023 (Merged) Institution-Based Research (IBR) Project, with Reference No.: TETF/DR&D/CE/AKWA-IBOM/IBR/2023/Vol.1 and TETFUND/IBR/COE/AFAHA NSIT/PR/083 and appreciates the

invaluable support towards advancing educational research and capacity development in Nigeria.

References

- Abdullahi, H.A. & Okonkwo, U.C. (2023). Industry linkages and skills acquisition in technical education: A case study of automobile technology programs in Nigeria. *Journal of Vocational and Technical Education*, 20 (1), 77-91.
- Adebayo, T. & Usman, L. (2023). Reforming automobile technology education: The role of student motivation and competency-based learning approaches. *Nigerian Journal of Technical Education*, 24 (2), 101-117.
- Adegbile, E.O. (2015). *Entrepreneur Education for Self-Employment*. Ibadan: George Allen and Unwin
- Adekunle, F. & Usoro, B. (2023). Teacher motivation and its impact on technical education outcomes in Nigeria. *Journal of Educational Leadership and Policy*, 19 (3), 36-52.
- Aina, E. (2023). Innovative pedagogical strategies for technical education: Implications for automobile technology instructors. *Educational Research and Innovation*, 14 (4), 46-61.
- Akomolafe, C.O. & Adesua, V.O. (2019). An Evaluative Study on the Accreditation of Academic Programmes and Quality Assurance in Public Colleges of Education in Nigeria. *European Scientific Journal*, 15 (4), 40-52.
- Akpakpavi, M. (2014). Modern automobile vehicle repair practices in micro, small and medium scale garages in Ghana. *International Journal of Science, Technology and Society*, 2 (6), 216-222.
- Amadioha, S.W. & Akor, V.O. (2018). Globalisation and functional education in Nigeria. In Tabotndip, J.E., Umo, U. & Nwiyi, G.U. (eds), *Globalization and functional education in Nigeria*. Onitsha: West and Solomon Publishing Company Limited
- Asanibare, J.B. (2012). Relationship between Nigeria secondary school principals' personality types and their communication skills, *Nigeria Journal of Sociology of Education*, 4 (1), 62-74.
- Ayonmike, C.S. (2020). Development and evaluation of instructional video for teaching and learning woodwork technology psychomotor skills in Nigerian Colleges of Education: implication for the production of competent graduates. *International Journal of Vocational and Technical Education Research*, 6 (3), 9-20.
- Ayonmike, C.S. & Okeke, B.C. (2016). Bridging the skills gap and tackling unemployment of vocational graduates through partnerships in Nigeria. *Journal of Technical Education and Training*, 8 (2), 26-39.
- Bello, M. & Adegbite, S. (2022). Industry-academic collaboration for enhanced skill acquisition in technical education. *Journal of Engineering Education*, 16 (2), 89-104.
- Bindu, C., Habeebu, R.T.V., Anish, B., Abhilash, G.S., Rajeesh, R.S., Abhilash, M.K., ... Fathima, P.A. (2016). *Automobile technology*. Vocational higher secondary education (VHSE) second year. Reference book. State Council of Educational Research and Training (SCERT), KERALA. India.
- Bornstein, M.H., Jager, J. & Putnick, D.L. (2013). Sampling in Developmental Science: Situations, Shortcomings, Solutions and Standards. *Developmental Review* 33 (4), 357–370.
- Brown, P. & Etim, E. (2023). Enhancing students' motivation in automobile technology through technology-assisted learning strategies. *African Journal of Technical Education*, 20 (3), 44-60.

- Chidoka, E. (2012). 13m vehicles Use PMS in Nigeria. Retrieved from http://www.leadership.ng/nga/articles/15148/2012/02/02/13m_vehicles_use_pms_nigeria_%E2%80%9393_chidoka.html on 24/4/2025
- Cranmer, S. (2014). Digital skills and competencies in schools. Retrieved from https://link.springer.com/content/pdf/10.1007%2F978-3-662-45770-2_15.pdf
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika Journal*, 16 (3), 297-334. doi:10.1007/bf02310555.
- Curzon, R. (2015). Vocational and practical arts education. Retrieved from www.142.voc.art.U.CR.html on 24/4/2025
- Eze, C. & Aluko, B. (2023). The impact of training facilities on student motivation in technical colleges. *Journal of Occupational Safety and Learning*, 17 (2), 112-127.
- Eze, C. & Nwachukwu, I. (2023). Exploring motivational strategies for improving students' skills acquisition in automobile technology education in Nigeria. *Journal of Educational Research*, 21 (1), 55-70.
- Ezeji, S.O. & Okorie, M.A. (2012). Guidance and Counselling in Education. Nuskka: Chulbison International Press.
- Federal Republic of Nigeria (FRN, 2013). National policy on education (6th ed). Nigerian Educational Research and Development Council Publishers, Yaba, Lagos-Nigeria.
- Idris, A.M. & Ogbuanya, T.C. (2015). Automobile starting and lighting system maintenance training manual for effective learning of motor vehicle mechanics work in technical colleges. *Nigerian Journal of Technological Research*, 10 (2), 48-66.
- Islam, M.R. (2018). Sample Size and Its Role in Central Limit Theorem (CLT). *International Journal of Physics and Mathematics*, 1(1), 37-47. <https://doi.org/10.31295/ijpm.v1n1.42>.
- Kola, A.J. & Taiwo, A.Z. (2022). Nigerian Colleges of Education: Issues, Challenges and Solutions. *African Journal of Humanities & Contemporary Education Research*, 8(1), 73-80.
- Mbakurem, J.N. (2016). Politics of education and gender issues: Its curriculum implications. In E. Eke and R. D. Olainoye (Eds) Nigeria Academy of Education.
- Nardi, P.M. (2018). Doing survey research: A guide to quantitative methods. 4th Edition, Routledge, New York. <https://doi.org/10.4324/9781315172231>.
- Nwachukwu, P.O. (2014). Sustainable development of the Nigerian economy: The role of technical and vocational education and training (TVET). *Educational Research International Journal*, 3 (1), 20–24.
- Nworgu, B.G. (2018). *Educational research, basic issues and methodology*. University Trust Publishers Nsukka.
- Ogbuanya, T. C. & Owodunni, A. S. (2015). Effect of reflective inquiry instructional technique on students' achievement and interest in automobile technology in technical colleges. *British Journal of Education, Society & Behavioural Science*, 7 (1), 36-47. <https://doi.org/10.9734/BJESBS/2015/17742>
- Okafor, I.P. (2012). Affective influences that affect the study of electrical installation in Technical Colleges in Imo State. An unpublished B. Sc project, University of Nigeria Nsukka
- Okeke, B.S. & Eze, R.A. (2010). Education for employment: A necessity for Nigerian industrial and technological advancement. *Nigerian Journal of Curriculum and Instruction*, 17 (1), 101–106.
- Okolie, U.C., Igwe, P.A. & Elom, M.E. (2019). Towards a sustainable university–industry linkage in Nigeria: A comparison with the Ghanaian model. *Journal of Further and Higher Education*, 43 (3), 316–330. <https://doi.org/10.1080/0309877X.2017.1369371>

- Okpara, E. N. & Onyemerekeya, C.C. (2014). Improvement of instruction. In. G. C. Offorma (ed). Curriculum implementation and instruction, pp. 220-251. Onitsha: Umworld Education Publication.
- Oriola, J. (2019). Strategies for improving the interest of Automobile Technology students in Vocational Teachers Education. Unpublished thesis, Department to Vocational Teacher Education, University of Nigeria, Nsukka. p. 1-25
- Owo, O.T. & Deebom, M.T. (2020). Assessment of the Technical Skills Acquired by Students of Technology Education for Employment Generation in Rivers State, Nigeria. *International Journal of Latest Research in Humanities and Social Science*, 3 (2) 35-41.
- Ryan, R.M., & Deci, E.L. (2023). Self-determination theory and student motivation in technical education. *Journal of Educational Psychology*, 29 (3), 99-115.
- Taber, K.S. (2017). The use of Cronbach's Alpha when developing and reporting instrument in science education. *Journal of Research in Science Education*, 4 (8), 1273-1296. doi:10.100/s11165-016-9602-2.
- Taherdoost, H. (2016). Validity and reliability of the research instrument: How to test the validation of a questionnaire/survey in research. *International Journal of Academic Research in Management*, 5 (3), 28-36.
- UNESCO (2023). Global perspectives on technical and vocational education and training (TVET) reforms: Strategies for skill development and employability. Paris: UNESCO Publishing.
- Usman, A. (2023). Major Problems of Colleges of Education in Nigeria and Possible Solutions. *Journal of Science, Humanities and Arts*, 10(3), 1-8.
- Uwaifo, V.O. (2009). Industrializing the Nigerian society through creative skill acquisition vocational and technical education programme. *International NGO Journal*, 4 (4), 160–166.