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Work Engagement and Commitment of Automobile Technology Teachers as Correlates of Teacher Effectiveness in Technical Colleges in Enugu State, Nigeria

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Abstract

The main purpose of this study was to investigate work engagement and commitment of automobile technology teachers as correlates of teacher effectiveness in technical colleges in Enugu State. Three specific purposes, three research questions, three hypotheses guided the study. The study adopted survey design. Population was made up of 57automobile technology teachers from 13 technical colleges in Enugu State. Utrecht Work Engagement andTeachers' Perceptions of Professional Commitment and Teacher Effectiveness Scales were adapted. Data were analysed using means, correlations and regression analysis. Findings reveal that a moderate relationship (.425) exists between work engagement and teacher effectiveness of automobile technology teachers. Also a moderate relationship (.537) exists between teachers' commitment and teachers' effectiveness of automobile technology teachers. Furthermore, moderate relationship (.433) exist between teachers' work engagement and commitment of automobile technology teachers. The hypotheses tested revealed that teachers' work engagement is a significant predictor for teachers' effectiveness and teachers' commitment, teachers' commitment is a significant predictor for teacher effectiveness. Based on the findings, Enugu State Ministry of Education should among other things, try to improve the work engagement and commitment of their automobile teachers through empowerment, rewards and benefit schemes.

Keywords: Technical, Colleges; Automobile Technology, Teacher, Effectiveness, Engagement, Work, Commitment.

Introduction

Technical education is education that equips individuals with knowledge; attitude and practical skills that can make one live well and contribute to the development of the nation. It is that aspect of education that leads to the acquisition of practical and applied skills as well as basic scientific knowledgeFederal Republic of Nigeria (2013). Technical education is designed to provide theory and practical knowledge to individuals and this type of training is provided to individual who desire to work in an industry or commerce or in any set up that uses machinery and tools for their services (Yaga, 2016). It therefore, equips

students with knowledge, attitude and practical skills required to enter or make progress in a particular occupation or trade. At secondary school level technical education is obtained in technical colleges, prepare students for varied specific occupations. Technical colleges offer training in various programme including electrical/electronic technology, woodwork technology, building technology, metalwork technology, and automobile technology (Adeyemi and Uko-Aviomoho 2004).

Automobile technology is one of the areas of specialization in technical education. It is the practical application of knowledge about self-propelled vehicles or machines. Automobile technology is vocational and technical sub-modular trade subjects offered at technical colleges' level for the purpose of enabling students to acquire further knowledge and develop skills (FRN 2013). Automobile technology comprises of engineering trades such as motor vehicle mechanics works, automobile electrical works, vehicle body building and light vehicle repair works (National Board for Technical Education) (NBTE), (2004),. Students studying automobile technology learn about assembling of engine, engine repair, fuel and ignition systems, power trains, brakes, transmissions, electronic and diagnostic equipment, auto body repair, auto body construction and more. NBTE (2004), stipulates that the aim of automobile technology is to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. In other to achieve this aim of technical colleges, the students of automobile technology need to be taught by effective teachers.

Teacher effectiveness is the most important school-related factor influencing student achievement and academic performance.Teachers are one of the most important school-based resources in determining students' future academic success and lifetime outcomes. (Chetty *et al*2014).Darling-Hammond, (2015) observed that teachers are crucial to the education system, and schools are only as good as the teachers within them. Teacher effectiveness can also be defined as the ability of a teacher to utilize approaches, strategies, connections to students, and a particular set of attitudes that lead to improved student learning and achievement (Strong, et al 2011). Various psychological and teacher-related factors might predict teacher effectiveness. These factors are teacher's work engagement and teacher's commitment.

Teacher engagement is linked to increased job satisfaction, workplace productivity, and even student engagementParker let al., (2012),. Teachers who work in schools with positive relationship between colleagues, administration and parents tend to be more engaged in their work (skaalvik & Skaalvik, 2014). In addition, teachers who feel that they have autonomy and control over their work is more likely to be engaged (Liu et al., 2013). Students of disengaged teachers may not receive the supportive and engaging learning environment that they need to thrive (Skaalvik & Skaalvik, 2014). Furthermore, disengaged teachers may be less

effective in the classroom learning, which can negatively affect students learning outcomes (Dickson, 2015).

The study of teachers' work engagement is relevant to every school because the quality of teachers has been recognized as one of the most important factors in developing and improving education. Schaufeli and Bakker, (2010) states that work engagement refers to a positive, affective-motivational state of high energy combined with high levels of dedication and a strong focus on work. It involves a good state of mind relating to ones' job that is characterized by emotion of vitality, devotion and absorption (Katou et al., 2021).It is characterized by a high level of vigour, dedication and absorption with ones' work. Hakanen et al. (2006) maintained that vigour is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties. Dedication is characterized by a sense of significance, enthusiasm, inspiration, pride, and challenge, while absorption is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly, and one has difficulties detaching from work. These three characteristics are perceived as a dimension for measuring the construct work engagement. Teacher work engagement is a positive, fulfilling, affective-motivational state of work-related well-being that can be seen as the antipode of job burnout. Parker, et al, (2012) noted that teachers work engagement as a multi-dimensional quality that includes job satisfaction, engagement in work activities, optimistic expectations for the future, buoyancy, and minimal absenteeism. According to Timms and Brough, (2013) high degree of work engagement is connected with more commitment, better involvement, and increased productivity.

Teachers' commitment is considered a key factor in achieving high level of performance and low levels of absenteeism and turnover. Committed teachers are determinants of quality education and academic performance of students in schools. Teacher commitment is the emotional bond between the teacher and the school (Mart, 2013). Commitment refers to behavior or psychological state explaining the employee-employer relationship which ultimately affects their tendency to stay or quit the organization (Kotzé and Nel, 2020). Organizational objectives can be attained easily, when employees are committed to their organizations (Ikyangon et al., 2020).Commitment as a stronger attachment results in more favourable job performance and enhances employee performance (Ikyangon et al., 2020).Workers who are highly committed to both the profession and the organization were found to perform better than the less committed ones, a behavior which result in improved overall effectiveness of the organization (Chien et al., 2020). Improved commitment of technical college automobile teachers will increase the value of the college itself, teachers' performance and student's performance as well.

The aim of automobile technology programme in technical colleges is to provide students the competency

needed to enable them perform well in the world of work for paid or self-employed. National Policy on Education stipulates that trainees completing technical college programmes shall have three options: secure employment, set up their own businesses and become self-employed and be able to employ other, and pursue further education (FRN 2013). Students of automobile technology are expected to have good academic achievement and performance in their programme of study. Unfortunately, the performance of Enugu State technical college students of automobile technology in both teacher-made and NABTEB examination have shown progressive deterioration. Uya (2014) revealed that most technical education graduates lack requisite skills, competence as a result of inadequate human resources and material provided to school for the training. Consequently, the students find it difficult to secure employment or set up their own business after graduation.

Automobile teachers in technical colleges seem not to be showing high level of work engagement, commitment and effectiveness in discharging their duties. Many of the automobile teachers go after their private business. Some of them could come to school but neglect their duties. Many people wonder what may be the problem weakening automobile teachers' creativity, enthusiasm and willingness to discharge their duties very well. This study is therefore designed to fill the gap by determining the relationship between automobile teachers' work engagement, commitment and effectiveness in technical colleges in Enugu State.

Purpose of the Study

The main purpose of this study was to investigate work engagement and commitment of automobile technology (AT) teachers as correlates of teacher effectiveness in technical colleges in Enugu State. Specifically, the study determined relationship between teachers':

1. work engagement and teacher effectiveness in AT in technical colleges in Enugu State.
2. commitment and teacher effectiveness in AT in technical colleges in Enugu State.
3. work engagement and teacher commitment in AT in technical colleges in Enugu State.

Research Questions

The following research questions guided the study:

What is the relationship between teachers':

1. work engagement and teacher effectiveness in automobile technology (AT) in technical colleges in Enugu State?
2. commitment and teacher effectiveness in AT in technical colleges in Enugu State?
3. work engagement and teachers' commitment in AT in technical colleges in Enugu State?

Hypotheses (HOs)

The following hypotheses were tested at 0.05 level of significance:

HO_1: Teachers' work engagement is a significant predictor for teacher effectiveness in automobile

technology (AT) in technical colleges in Enugu State.

HO_2: Teachers' commitment is a significant predictor for teacher effectiveness in AT in technical colleges in Enugu State.

HO_3: Teachers' teachers' work engagement is a significant predictor for teachers' commitment in AT in technical colleges in Enugu State.

Methodology

***Design of the Study*:** The study adopted a correlational design. A correlational design seeks to establish the degree of relationship that exists between two or more variables.

***Area of the Study*:** The study was carried out in Enugu State, Nigeria. The state has 17 local government areas and 13 technical colleges. The technical colleges are both state-owned and private owned technical colleges.

***Population for the Study*:** The population for the study was made up of 57automobile technology teachers from all the 13 technical colleges in Enugu State. The technical colleges offer automobile technology.

***Instruments for Data Collection*:** Three sets of instrument were used for data collection in this study. TheseUtrecht included Work Engagement Scale measuring work engagement; Teachers' Perceptions of Commitment scale Ibrahim and Iqbal (2015); Teacher Effectiveness Scale Ogochi (2014).The instruments were appropriately adapted based on the specific purposes of the study. The items were based on a five point Likert scale of Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD) with values of 5, 4, 3, 2, and 1 respectively.

The instruments for data collection were validated by three university experts in Industrial Technical Education. The reliability of the instrument was established using Cronbach alpha reliability method. Fifteen copies of the instrument were administered on fifteen automobile technology teachers in technical colleges in Anambra state. A reliability coefficient of 0.89 was obtained for all the overall reliability.

***Method of Data Collection*:** A total of 57 copies of the questionnaire were administered to the AT teachers by hand. All the 57 copies of the questionnaire were completed and retrieved from the teachers after a week. This represents 100 percent return.

***Method of Data Analysis*:** The statistical method used in the study include: mean, Pearson correlations and regression analyses. Pearson Correlations was used to answer research questions 1-3, while regression analysis was used to test Hypothesis 1-3 and hypothesis will be tested at 0.05. Bivariate correlations and regression analyses were carried out using the Statistical Package for Social Sciences (SPSS v.22). While the decision rule for establishing a relationship via Bivariate correlations was be based on correlation coefficients as follows:

Range of values of correlation coefficient (r): These values ranged from ± 0.00 to 0.19 (Very weak relationship); ± 0.20 to 0.39 (Weak relationship); ± 0.40 to 0.59 (Moderate relationship); ± 0.60 to 0.79 (Strong relationship) and ± 0.80 to 1.00 (Very strong relationship).

Results

Table 1: Mean Responses and Standard Deviation on Work Engagement Indicators

S/N	Teacher s' Work Engagement Indicators	X	SD	Remarks
1	At my work, I feel bursting with energy.	3.55	0.71	Agree
2	At my automobile teaching job, I feel strong and vigorous.	3.80	0.54	Agree
3	When I get up in the morning, I feel like going to work.	4.35	0.98	Agree
4	I can continue working for very long periods at a time.	3.60	0.79	Agree
5	At my automobile teaching job, I am very resilient, mentally.	3.72	0.61	Agree
6	At my automobile teaching job I always persevere, even when things do not go well.	4.20	0.66	Agree
7	I find the work that I do full of meaning and purpose.	3.64	0.80	Agree
8	I am enthusiastic about my automobile teaching job.	3.39	0.86	Agree
9	My automobile teaching job inspires me.	4.29	0.89	Agree
10	I am proud of the automobile teaching job that I do.	3.96	0.71	Agree
11	To me, my automobile e-teaching job is challenging.	3.39	0.86	Agree
12	Time flies when I'm working.	3.55	0.71	Agree
13	When I am working, I forget everything else around me.	4.38	0.54	Agree
14	I feel happy when I am working intensely.	3.35	0.98	Agree
15	I am immersed in my automobile teaching job.	3.60	0.79	Agree
16	I get carried away when I'm working.	3.72	0.61	Agree
17	It is difficult to detach myself from my automobile teaching job.	4.55	0.71	Agree
	Grand Mean	**3.82**		

Keys: X = Mean of respondent, SD = Standard Deviation, A = Agree.

Table 1 shows the 17 teacher work engagement indicators. The mean value of the indicators ranged from 3.35 to 4.55 and the standard deviation values of the indicators ranged from 0.54 to 0.98 indicating that the respondents were close to one another in their opinion. The grand mean of the teacher work engagement indicators is 3.82 which indicate high work engagement from the automobile technology teachers.

Table 2: Mean Responses and Standard Deviation on Teacher Perceptions of Commitment Indicators

S/N	Teacher Commitment Indicators	X	SD	Remarks
1	I am satisfied with teaching automobile to students.	3.39	0.73	Agree
2	I help automobile students out of the class.	3.69	0.62	Agree
3	I accept taking more automobile classes when needed.	3.26	1.03	Agree
4	I collect information about automobile student's family life	2.91	0.77	Agree
5	I have considerable control over the pace of my work.	2.97	0.66	Agree
6	I spend time with students on automobile subjects (activities) related with the lesson inside as well as outside the classroom.	3.42	0.91	Agree
7	I take my automobile classes on time.	2.80	0.69	Agree
8	I accomplish my automobile teaching job with enthusiasm.	3.03	0.76	Agree

Table 2 continued

9	I try to do the best for the unsuccessful automobile students.	3.51	0.81	Agree
10	I enjoy teaching automobile technology.	3.78	0.59	Agree
11	I am satisfied with teaching automobile to the students.	2.78	0.81	Agree
12	I would be very happy to spend the rest of my career with this automobile teaching profession.	3.72	0.60	Agree
13	I really feel as if professional problems are my own	3.52	0.62	Agree
14	I do not feel a strong sense of belonging to my automobile teaching profession.	3.57	0.88	Agree
15	I do not feel emotionally attached to automobile teaching profession.	2.19	0.76	Disagree
16	I do not feel like part of the family at my automobile teaching profession.	2.26	0.76	Disagree
17	This automobile teaching profession has a great deal of personal meaning for me	1.92	0.82	Disagree
18	I do not feel any obligation to remain in my current automobile profession	2.86	0.75	Agree
19	Even if it were to my advantage, I would not have left my automobile teaching profession now.	2.00	0.69	Disagree
20	I would feel guilty if I left my automobile teaching profession now.	3.38	0.85	Agree
21	This automobile teaching profession deserves my loyalty	3.33	1.01	Agree
22	I would not leave my automobile profession right now because I have a sense of obligation to the students.	3.08	0.73	Agree
23	I owe a great deal to my automobile teaching profession.	2.18	0.83	Disagree
24	It would be very hard for me to leave my automobile teaching profession right now, even if I wanted to.	2.66	0.87	Agree
25	One of negative consequences of leaving this profession would be the scarcity of available alternatives.	3.63	0.75	Agree
26	Right now, staying with my automobile teaching profession is a matter of necessity and desire.	3.07	0.87	Agree
27	I feel that I have few options to consider leaving this profession.	3.21	0.81	Agree
28	If I had not already put so much of myself into this profession, I might have considered working elsewhere.	3.04	0.86	Agree
29	Too much of my life would be disrupted if I decided to leave my profession now.	3.13	0.71	Agree
	Grand Mean	**3.05**		

Keys: X = Mean of respondent, SD = Standard Deviation, A = Agree.

Table 2 shows the 29 teacher commitment indicators. The mean value of the indicators ranged from 1.92 to 3.78 and the standard deviation values of the indicators ranged from 0.59 to 1.03 indicating that the respondents were close to one another in their opinion. The grand mean of the teacher commitment indicators is 3.05 which indicate high commitmentfrom the automobile technology teachers.

Table 3: Mean Responses and Standard Deviation on Teacher Effectiveness Indicators

S/N	Teacher Effectiveness Indicators	X	SD	Remarks
1	I always make a deliberate effort to enhance automobile student knowledge	4.16	0.92	Agree
2	I display in-depth knowledge of my automobile subject(s)	4.00	0.88	Agree
3	I present my automobile lessons in a well-organized manner	3.94	0.87	Agree
4	I have always been responsive to automobile students' views and comments	3.74	1.05	Agree
5	I provide clear explanations of important issues in my subject	3.94	0.99	Agree
6	As a teacher I have always prepared well for my automobile lessons	3.66	0.98	Agree
7	I make an effort to stimulate students 'interest in the automobile subject	3.71	0.93	Agree
8	I do my best to deliver on automobile teaching duties because my salary is adequate	3.72	0.97	Agree
9	I participate in co-curricular activities as a result of principal's support	3.69	1.08	Agree
10	I get encouraged to do my best in all my responsibilities in school because there is a clear policy on reward of top achievers	3.42	1.23	Agree
11	My automobile lesson delivery is from simple to complex or from known to the unknown	3.69	1.19	Agree
12	I use periodic questioning to obtain and retain automobile students' attention	3.92	1.09	Agree
13	I make use of appropriate automobile instructional materials	3.91	1.02	Agree
14	I make use of appropriate instructional methods	3.77	1.14	Agree
15	I make improvisation of instructional materials when not available	3.86	0.99	Agree
	Grand Mean	**3.80**		

Keys: X = Mean of respondent, SD = Standard Deviation, A = Agree.

Table 3 shows the 15 teacher effectivenessindicators. The mean value of the indicators ranged from 3.42 to 4.16 and the standard deviation values of the indicators ranged from 0.87 to 1.23 indicating that the respondents were close to one another in their opinion. The grand mean of the teacher effectivenessindicators is 3.80 which indicate high effectivenessfrom the automobile technology teachers.

Table 4: Correlation between Teachers' Work Engagement and Teacher Effectiveness

Variables	TWE	TE	Sig.	R	R^2	B
1.Teacher Work Engagement (TWE)	1		.000	.425	.2566	9.844
2. Teacher Effectiveness (TE)	.425**	1	.000			.429

Key: TWE-Teacher work engagement, TE- teacher effectiveness, **- Correlation is significant

Table 4 shows moderate relationship (.425) between teachers' work engagement and teacher effectiveness of automobile technology teacher. This impact is statistically significant because sig. value p < .000 which is less than .05. Therefore, hypothesis is Not Rejected. This indicated that teachers' work engagement is a significant predictor for the teacher effectiveness of automobile technology teachers.

Table 5: Correlation between Teachers' Commitment and Teacher Effectiveness

Variables	TC	TE	Sig.	R	R^2	B
1. Teacher Commitment (TC)	1		.016	.537.	.331	39.721
2. Teacher Effectiveness (TE)	.537**	1	.000			.639

Key: TC-Teacher commitment, TE- teacher effectiveness, **- Correlation is significant

Table 5 shows moderate relationship (.537) between teachers' commitment and teacher effectiveness of automobile technology teachers. This impact is statistically significant because sig. value p < .000 which is less than .05. Therefore, the hypothesis is Not Rejected. This indicated that teachers' commitment is a significant predictor for the teacher effectiveness of automobile technology teachers.

Table 6: Correlation between Teachers' Work Engagement and Teachers' Commitment

Variables	TWE	TC	Sig.	R	R^2	B
1.Teacher Work Engagement (TWE)	1		.000	.433	.236	76.254
2. Teacher Commitment (TC)	.433**	1	.000			.353

Key: TWE-Teacher work engagement, TC- Teacher commitment, **- Correlation is significant

Table 6 shows moderate relationship (.433) between teachers' work engagement and commitment of automobile technology teachers. This impact is statistically significant because sig. value p < .000 which is less than .05. Therefore, hypothesis is Not Rejected. This indicated that teachers' work engagement is a significant predictor for the commitment of automobile technology teachers.

Discussion

It was found out from the study that a moderate relationship between teachers' work engagement and teacher effectiveness of automobile technology teachers in technical colleges in Enugu State. This is in agreement with Kocak & Nartgun (2020) who carried out a research on the relationship between teacher's work engagement and the effectiveness of school teachers. They observed that personality teachers work engagement had significant relationship on effectiveness. The study is also in line with Kilonzo, et al (2018) who concluded that teachers work engagement had an influence on teacher effectiveness in Secondary Schools. Equally the findings of this study is in line with Gupta, Acharaya& Gupta

(2015) who in their study found that there is a significant mediating relationship between teachers work engagement and effectiveness. Thus this study has shown that work engagement variable is important because it influences teacher effectiveness.

It was found out from the study that there was a moderate relationship between teachers' commitment and teacher effectiveness of automobile technology teachers in technical colleges in Enugu State. The findings of this study are in line with (Ibrahim and Igba 2015), they observed that effectiveness of the teacher's instructional activities had a positive impact on their commitment to the classroom and their teaching profession. The findings are also consistent with those of Ibrahim & Iqbal (2015) who discovered a positive relationship between teachers' professional commitment and effectiveness to school, teaching jobs and commitment. Thus this study has shown that teacher commitment variable is important because it influences their effectiveness.

The study discovered that teachers' work engagement is a significant predictor for the teacher effectiveness of metalwork technology teachers. These findings are in accordance with Kocak & Nartgun (2020) who observed that teachers work engagement had significant difference on effectiveness. Equally Kilonzo, et al (2018) in their study concluded that teachers work engagement had statistically significant influence on teacher effectiveness. Fernandez (2021) also found a significant difference between work engagement and teacher effectiveness. Fernandex (2021) also identified significant relationships between teacher work engagement and effectiveness. Bakker, Albrecht & Leiter (2011) discovered that effectiveness was impacted by work engagement, which is a combination of a person's capacity to work such as energy, strength, and stamina; and willingness to work such as devotion, participation, and commitment.

The findings of the study also revealed that teachers' professional commitment is a significant predictor for the teacher effectiveness of automobile technology teachers. This finding is in agreement Mishra & Mishra (2022) observed that in their study on teacher professional commitment and teaching competency as psychological predictors and primary contributors to teaching effectiveness found that there is a positive and substantial correlation between teacher professional commitment and effectiveness.

Conclusion

Based on the findings of this study, it could be concluded that work engagement and commitment are related to teacher effectiveness. This would, no doubt, result to positive and improved teacher effectiveness. It was noted that there was a moderate relationship between work engagement and professional commitment on teacher effectiveness of automobile technology teachers in technical colleges in Enugu state. Automobile technology was introduced into the technical college programme to equip the students with relevant skills for work after graduation. Effective teaching by

automobile technology teachers is very important to produce automobile technology graduates, who are self-reliant. To maintain progressive quality skills acquisition among automobile students, and improvement in automobile teachers' effectiveness in technical colleges becomes crucial so as to reduce the problem in imparting the knowledge and skills needed by the automobile students to face the challenges after graduation.

Recommendations

Based on the findings it is recommended that Technical college administrators in Enugu State should:

1. organized workshop programmes and conferences for automobile teachers on how they can improve their engagement, commitment and effectiveness.
2. ensure that there is cordial relationship between them and the automobile teachers.
3. improve the work engagement and commitment of their automobile teachers through empowerment, rewards and benefit schemes.

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