

Intrinsic and Extrinsic Construct as Prediction of Lecturer Anxiety and Intention to Attitude in Polytechnics Located in North-Central Nigeria.

¹ Dung Joseph Jong, ² Paul Thomas Muge, ³ Bassi Jeremiah Yusuf

¹ Department of General Studies, Federal Polytechnic Nyak Shendam

² Department of Electrical Electronic Engineering Technology, Federal Polytechnic Nyak Shendam

³ Department of Computer Engineering, Federal Polytechnic Nyak Shendam

DOI : <https://doi.org/10.51583/IJLTEMAS.2026.150100012>

Received: 07 January 2026; Accepted: 12 January 2026; Published: 23 January 2026

ABSTRACT

This study delved into how both intrinsic and extrinsic factors can predict lecturers' anxiety and their willingness to use instructional technologies in teaching electrical courses at polytechnics in North-Central Nigeria. With the increasing push for digital integration in higher education, it's crucial to understand the psychological and systemic elements that affect educators' adoption of technology in technical fields. The primary goal of this study is to explore how both intrinsic and extrinsic factors influence lecturers' anxiety and their willingness to use instructional technologies while teaching electrical courses in polytechnics located in North-Central Nigeria. This study adopted population size of 250 lecturers. A mixed-methods approach was utilized, blending quantitative surveys with qualitative interviews, targeting lecturers from selected public and private polytechnics in the region. This study employed multiple linear regression analysis. The results show that motivational elements, intrinsic motivation, level of anxiety, and suggestion all significantly increase lecturers' anxiety. This indicates that certain motivational pressures such as personal drive, expectations, or performance-related suggestions can unintentionally heighten anxiety levels. While institutional support had a positive but insignificant effect, it shows that existing support structures are not strong enough to reduce anxiety. Extrinsic motivation had a negative but insignificant effect, suggesting that external rewards alone do not meaningfully reduce anxiety. Overall, the findings highlight the need for stronger institutional interventions and healthier motivational environments to reduce lecturers' anxiety. Establish counseling and wellness units dedicated to managing academic stress and mental health. Encourage self-paced professional development rather than excessive self-imposed pressure. Avoid using high-pressure performance metrics without providing adequate support. Train administrators and supervisors to give encouraging, clear, and supportive suggestions. Provide meaningful rewards such as promotion opportunities, research grants, or reduced administrative workload. Introduce mindfulness, relaxation, and mental health awareness programs within the institution.

Key words: Intrinsic motivational elements, Extrinsic motivational aspects, Level of anxiety, Instructional technologies

INTRODUCTION

The way we incorporate technology into education has become a vital part of how we teach and learn today, especially in technical and vocational education and training (TVET) institutions like polytechnics. In Nigeria, particularly in the North-Central region, these polytechnics are tasked with producing skilled professionals in fields related to science and technology, such as electrical engineering. However, even with government initiatives and investments in tech infrastructure, many lecturers still aren't making the most of these instructional technologies.

One key reason for this disconnect is the mindset and motivation of lecturers when it comes to embracing technology. Research has shown that anxiety, resistance to change and a lack of motivation to use technology are significant hurdles for educators, particularly in developing regions. The choice to adopt or reject technology often hinges on a mix of internal factors like self-confidence, interest, and how relevant they find the technology as well as external factors, such as institutional support, access to ICT resources, training opportunities, and the influence of peers.

Grasping how these internal and external factors interact is essential for crafting effective strategies to encourage lecturers to adopt technology. Additionally, examining how these factors predict lecturers' anxiety and their willingness to integrate technology into their electrical engineering courses can offer valuable insights for policymakers, administrators, and stakeholders involved in the polytechnic education system.

This study aims to explore how both intrinsic and extrinsic motivational factors impact anxiety and intention among lecturers in polytechnics located in North-Central Nigeria. By concentrating on the teaching of electrical courses a discipline that significantly depends on simulations, virtual labs, and digital instruction this research shed light on the unique challenges and opportunities that come with digital transformation in technical education.

Understanding intrinsic factors such as self-efficacy, digital competence, personal motivation, and attitudes toward technology help reveal internal barriers that may hinder lecturers' adoption of modern teaching tools. Likewise, examining extrinsic factors such as institutional support, availability of ICT facilities, training opportunities, workload, and administrative encouragement provides insights into the external conditions that shape usage behavior.

PROBLEM STATEMENT/JUSTIFICATION

- Even though there's been a surge in investment in ICT infrastructure at polytechnics in Nigeria, many lecturers in electrical engineering still struggle to effectively use technology in their teaching.
- Many of these lecturers' express feelings of anxiety and discomfort when it comes to using instructional technologies, which really gets in the way of smoothly integrating digital tools into technical education.
- There's a gap in understanding how both intrinsic factors (like interest, perceived competence, and self-efficacy) and extrinsic factors (such as institutional support, access to resources, training, and policy incentives) affect lecturers' anxiety and their willingness to adopt new technologies.
- Most research has been centred around barriers faced by students in e-learning or general adoption frameworks, with not enough focus on the unique challenges lecturers face when teaching practical, tech-heavy courses like electrical engineering in Nigerian polytechnics.
- The absence of solid evidence on what drives lecturers' anxiety and their intentions to adopt technology makes it tough to create targeted interventions and professional development programs.

OBJECTIVE(S) OF THE STUDY

The primary goal of this study is to explore how both intrinsic and extrinsic factors influence lecturers' anxiety and their willingness to use instructional technologies while teaching electrical courses in polytechnics located in North-Central Nigeria.

Specific Objectives:

1. To pinpoint the intrinsic motivational elements that drive lecturers to incorporate instructional technologies in their electrical course teachings.

2. To investigate the extrinsic motivational aspects (like institutional support, training opportunities, and resource availability) that affect lecturers' decisions to embrace instructional technologies.
3. To evaluate the level of anxiety that lecturers experience regarding the use of instructional technologies.
4. To analyse the connection between intrinsic motivation and lecturers' anxiety about using technology.
5. To explore the relationship between extrinsic motivation and lecturers' anxiety concerning technology use.
6. To assess how lecturers' anxiety acts as a mediator between motivational factors (both intrinsic and extrinsic) and their intention to adopt technology.
7. To offer suggestions on enhancing lecturers' motivation and alleviating anxiety to promote better technology adoption in teaching practices

LITERATURE REVIEW

The use of educational technologies in higher education has become essential for enhancing teaching and learning outcomes. In fields like technical and vocational education, especially electrical engineering, tools such as simulations, computer-aided design, and virtual labs are incredibly effective for helping students grasp complex ideas (Yusuf & Balogun, 2021). However, in Nigerian polytechnics, the uptake of these technologies is often uneven, influenced by various institutional and personal factors (Adeoye et al., 2022).

Intrinsic motivation plays a key role here, encompassing internal drivers like interest; enjoyment, perceived competence, and self-efficacy that affect how engaged someone is with a task (Deci & Ryan, 2000). For lecturers, this intrinsic motivation is a strong predictor of their willingness to embrace technology in their teaching. Those who feel capable and find personal value in technology are more inclined to use it effectively (Teo, 2011). Self-efficacy, in particular, is crucial in determining whether educators choose to engage with or shy away from technology (Bandura, 1997). In technical disciplines like electrical engineering, where hands-on experience is vital, this intrinsic motivation can be especially powerful.

On the flip side, extrinsic motivators like training opportunities, institutional policies, peer support, administrative backing, and access to ICT tools also play a significant role in how technology is adopted (Venkatesh & Davis, 2000). Research in Nigerian institutions has shown that lecturers are more likely to embrace instructional technologies when they receive sufficient support and incentives from their institutions (Onasanya et al., 2020). Moreover, a supportive institutional culture and strong leadership commitment can create an environment that encourages on going digital transformation (Ajadi & Salawu, 2021).

Feeling anxious about using technology often called technophobia can really get in the way of embracing and effectively using digital tools in education. This anxiety might come from a lack of confidence, fear of messing up, insufficient training, or even past negative experiences (Brosnan, 1998). Research shows that lecturers who experience high levels of anxiety related to technology are less likely to engage with digital tools, no matter how many resources are available (Agbo et al., 2020). Lately, there's been a growing interest in how anxiety acts as a bridge between motivation and intention in educational research (Yerdelen-Damar et al., 2019).

The desire to use technology in teaching is a major predictor of actual behavior, as highlighted in the Technology Acceptance Model (TAM) (Davis, 1989). This model points out that how useful and easy to use a technology seems plays a big role in shaping our intentions. In polytechnic education, where digital tools can really boost hands-on learning, the intentions of lecturers are crucial for successful implementation. But it's important to note that intention isn't just about perceived usefulness; it's also shaped by motivation and anxiety levels (Teo, 2011; Mtebe & Raisamo, 2014).

Herman et al. (2016) developed the intrinsic-motivation (IM) course design method to make motivation theory accessible to faculty and to help faculty think more concretely about the costs that demotivate them and make their course designs untenable.

Our course design method complements existing course design methods by providing an approach to designing for motivational outcomes. In this paper, we describe the IM Course Design Method and then illustrate how this method was used to refine the design of a sophomore-level engineering course that enrolled over 200 students. The study then present

evaluation evidence from this course to suggest that application of the method can increase students' intrinsic motivation in engineering courses.

Al-Said (2023) examined the influence of teacher on student motivation: Opportunities to increase motivational factors during mobile learning. The study surveyed 200 students and 46 teachers of The University of Jordan and Jordan University of Science and Technology regarding the factors that influenced their motivation in terms of mobile learning. The results revealed that 178 out of 200 participants agreed that intrinsic motivation impacted their interest in mobile learning. Some 78% of the students approved of mobile learning, while the remaining 22% believe it is necessary to return to the traditional face-to-face education format. The importance of feedback and communication with teachers and its impact on the process of mobile learning is considered. The role of built-in mechanisms in information systems and the positive role of gamification are equally important. Plugins compatible with the convenient Word Press system that is applications that help organize the educational process were examined in the scientific work. The specific recommendations for raising the motivation of students in the learning process, which can be used by relevant institutions worldwide presented.

Dong et al. (2025) investigated barriers by developing a theoretical model that integrates elements from Social Ecological Systems Theory, considering both micro-level individual factors (such as neuroticism and personal innovativeness) and meso-level social factors (such as negative word-of-mouth). Data were collected from 500 university teachers and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) and fuzzy-set Qualitative Comparative Analysis (fsQCA). The PLS-SEM results revealed that neuroticism and negative word-of-mouth (WOM) have a significant positive impact on technology anxiety, while personal innovativeness has no significant direct effect. Moreover, perceived invasiveness plays a key mediating role in the relationships between neuroticism and technology anxiety, as well as between negative WOM and technology anxiety, whereas perceived authenticity does not exhibit a significant mediating effect. The fsQCA findings further revealed that technology anxiety does not stem from a single causal pathway. Instead, four configurations that include the presence and absence of certain conditions can lead to this desirable outcome.

Autio (2019) determined the elements motivating comprehensive school students to study technology. The research was carried out as a qualitative case study and the material was collected through individual theme interviews. Each test participant represented a different case of motivation towards technology education. In choosing individuals for the study the main criteria were gender, negative or positive motivation and competence in the field of technology. The study found that the artifact to be made in school and the student's freedom of choice had significant effect on motivation in all test participants. Instead, curiosity and intellectual challenge seemed to be the main elements among technological talents. Although, we must be careful with final conclusions as the research group was relatively small, we can conclude that there were more signs of intrinsic motivation among students with high technological competence whereas extrinsic motivation was emphasized in the other students.

Tsai and Chang (2013) investigated inner motivation and anxiety of English learning as it is experienced by English as Foreign Language (EFL) learners with respect to various majors, differences in genders and language proficiency. Specifically, it studies EFL students at a technical university in Taiwan. This study surveyed and analyzed 857 freshmen from a technical university in Taiwan. Based on the analyses of structural equation modeling, the results indicated that English learning anxiety impacted English learning motivation in different ways depending on genders and majors. On the other hand, English learning anxiety had little effect on English learning motivation for the different levels of language proficiency groups, especially for learners in the

intermediate group. Generally speaking, most of the learners were prone to instrumental rather than integrative motivation in terms of learning English, and their levels of English language class anxiety were higher than their levels of English use and test anxiety. The findings can help clarify the nature of both English learning anxiety and English learning motivation as psychological constructs to students.

Teng (2024) based on a cross-lagged panel design, examined the directionality of the relationships between anxiety, self-efficacy, and motivation in the context of online English learning. A total of 420 university students in China completed self-efficacy belief, motivation, and anxiety measures twice, eight months apart. The findings suggest that self-efficacy belief mediates the relationship between motivation and anxiety in online English learning, whereas anxiety mediates the relationship between self-efficacy belief and students' motivation. The mediation models based on two times of data collection achieved a satisfactory fit. However, the second model demonstrated a better model fit, highlighting the importance of anxiety in the relationship between motivation and self-efficacy beliefs. Understanding the causes and effects of anxiety for students may lead to training and resource development that are important to maintaining students' self-efficacy belief and motivation in online English learning.

Khoudri (2024) delved into the origins of English as a Foreign Language (EFL) speaking anxiety in Moroccan high school students and offers potential remedies to reduce or prevent its occurrence, with a particular emphasis on encouraging a willingness to speak. The study involved 37 high school teachers who completed a questionnaire regarding their strategies to mitigate speaking anxiety and promote communication willingness among Moroccan EFL high school students. The data was collected and analyzed using SPSS. The findings reveal that anxiety stems from various factors, including linguistic issues (such as limited vocabulary, grammar challenges, and fluency), personal factors (such as learner personality and motivation), and teacher-related factors (including feedback quality and classroom activities). Moreover, the research suggests that teachers should prioritize strategies like providing positive feedback, offering praise, and incorporating collaborative work or task-based learning to reduce students' EFL speaking anxiety. Additionally, teacher participants proposed additional strategies focused on a variety of activities and methods to foster a welcoming classroom atmosphere.

While previous studies have looked into the obstacles to using technology in Nigerian higher education, there hasn't been much empirical research on how intrinsic and extrinsic motivation, anxiety, and the intention to use technology are connected especially among lecturers teaching technical courses like electrical engineering. This study aims to fill that gap by examining how these factors interact and influence digital teaching practices in polytechnics in the North-Central region of Nigeria.

METHODOLOGY

This study used a quantitative, correlational survey research design. This approach is perfect for exploring the predictive relationship between intrinsic and extrinsic factors, anxiety, and the intention to use instructional technologies among lecturers. It enables a statistical analysis of how strong and in what direction the relationships between these variables are. The research took place in North-Central Nigeria, which is one of the six geopolitical zones in the country. This region includes states like Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory (FCT) in Abuja. These states are home to various federal, state, and private polytechnics that offer programs in electrical and electronic engineering, along with related technology fields. North-Central Nigeria was chosen for its diverse educational institutions, on-going ICT development projects, and a good mix of urban and semi-urban polytechnic environments.

The study focused on lecturers who teach electrical and electronic engineering and related courses at selected polytechnics throughout North-Central Nigeria. These lecturers are key because they deliver technical content that increasingly relies on instructional technology for simulations, modeling, and practical demonstrations.

A multi-stage sampling technique was employed:

- Stage 1: Purposefully selecting 6 polytechnics (2 federal, 2 state, and 2 private) from different states in the region.
- Stage 2: Using stratified sampling based on the size of the departments to ensure proportional representation.
- Stage 3: Implementing simple random sampling to choose respondents within each department.

The sample size was calculated using Cochran's formula for known populations, aiming for a confidence level of 95% and a margin of error of 5%. 250 lecturers took part in the study.

Instrumentation

The main tool used for gathering data is a structured questionnaire that has five key sections:

1. Demographic Information (like age, gender, qualifications, years of experience, and type of institution).
2. Intrinsic Motivation Scale (covering aspects such as self-efficacy, personal interest, and perceived competence).
3. Extrinsic Motivation Scale (including factors like institutional support, peer influence, and access to ICT tools).
4. Technology Anxiety Scale (addressing fears of failure, discomfort, and feelings of lack of control).
5. Intention to Use Technology Scale (looking at willingness, future plans, and readiness to engage with technology).

The questions adapted from established scales, including: The Technology Acceptance Model (TAM) (Davis, 1989), The Computer Anxiety Rating Scale (CARS) (Heinssen et al., 1987) and The Self-Determination Theory Instruments (Deci & Ryan, 2000). Each item was rated on a 5-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

- To ensure face and content validity, three experts in educational technology and psychology review the questionnaire. This study conducted a pilot study with 25 lecturers from a polytechnic outside the main sample area to fine-tune the instrument. Reliability was evaluated using Cronbach's Alpha, with a threshold of $\alpha \geq 0.70$ deemed acceptable for each construct.

This study got ethical approval and the necessary permissions from the institution and distributed the questionnaires in person. Three research assistants were trained to help with the distribution and collection at selected institutions. This study guaranteed respondents' anonymity, confidentiality, and voluntary participation. The data collection process took four weeks.

RESULT AND DISCUSSION

Table 1: Demographic Information of Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	185	74.0

	Female	65	26.0
Age Range (Years)	25 – 34	60	24.0
	35 – 44	110	44.0
	45 – 54	55	22.0
	55 and above	25	10.0
	Highest Qualification	HND/Bachelor’s Degree	70
	Master’s Degree	145	58.0
	Ph.D.	35	14.0
Years of Teaching Experience	Below 5 years	40	16.0
	5 – 10 years	95	38.0
	11 – 15 years	70	28.0
	Above 15 years	45	18.0
Type of Institution	Federal Polytechnic	140	56.0
	State Polytechnic	110	44.0
Total		250	100

The demographic data show that most respondents are male (74%), reflecting the gender imbalance often found in technical and engineering disciplines in Nigerian polytechnics. This dominance suggests that men are more involved in teaching electrical courses, which could influence the study’s insights on anxiety and technology adoption patterns.

The majority of lecturers (44%) are aged between 35 and 44 years, representing mid-career professionals who are experienced yet still adaptable to new teaching technologies. Their willingness to use instructional technologies may depend on adequate institutional support and perceived ease of use.

Regarding academic qualifications, most lecturers (58%) hold a Master’s degree, implying that they possess a solid academic foundation, which could enhance their confidence and reduce anxiety toward technology integration. However, the smaller number of Ph.D. holders (14%) may indicate limited exposure to research-driven technological pedagogies.

In terms of teaching experience, a considerable number (66%) have over five years of experience, suggesting familiarity with conventional teaching methods. Transitioning to digital or technology-based instruction may therefore trigger varying levels of anxiety depending on individual motivation (intrinsic factors) and institutional encouragement (extrinsic factors).

Finally, the distribution between federal (56%) and state (44%) polytechnics highlights institutional diversity, which may influence the availability of resources, administrative support, and training opportunities. Federal institutions may have better access to technological infrastructure, which could reduce anxiety and improve willingness to adopt new instructional technologies.

The demographic profile suggests that while most lecturers are educated, experienced, and within a productive age range, their willingness to integrate instructional technologies is likely moderated by both intrinsic factors (such as motivation, self-efficacy, and attitude toward innovation) and extrinsic factors (like institutional support, training, and resource availability). This means that effective policy and professional development programs should target both personal and institutional determinants to reduce anxiety and enhance technology adoption in teaching electrical courses.

Table 2: Descriptive Statistics

Descriptive Statistics					
Indicators	N	Minimum	Maximum	Mean	Std. Deviation
ME1	250	1.00	5.00	4.2800	.76152
ME2	250	2.00	5.00	4.3520	.69138
ME3	250	1.00	5.00	4.0000	.79152
ME4	250	1.00	5.00	3.8880	.85227
IS1	250	1.00	5.00	4.0080	.81646
IS2	250	1.00	5.00	3.5200	1.09837
IS3	250	1.00	5.00	3.8880	.86164
IS4	250	2.00	5.00	4.1680	.80397
LA1	250	1.00	5.00	2.5280	1.10549
LA2	250	1.00	5.00	3.9800	.82846
LA3	250	1.00	5.00	3.8520	1.11493
LA4	250	2.00	5.00	4.3640	.83082
IM1	250	1.00	5.00	4.1080	.84569
IM2	250	1.00	5.00	2.2840	1.21046
IM3	250	1.00	5.00	4.3480	.88885
IM4	250	1.00	5.00	4.0800	.85588
EM1	250	1.00	5.00	3.8760	.84349
EM2	250	2.00	5.00	4.1440	.84268
EM3	250	1.00	5.00	4.1160	.91317
EM4	250	2.00	5.00	4.1280	.83089
SG1	250	2.00	5.00	4.1000	.82749

SG2	250	2.00	5.00	4.2120	.77034
SG3	250	2.00	5.00	4.1600	.78028
SG4	250	1.00	5.00	4.2800	.76152
AX1	250	2.00	5.00	4.3520	.69138
AX2	250	1.00	5.00	3.8520	1.11493
AX3	250	2.00	5.00	4.3640	.83082
AX4	250	1.00	5.00	4.1080	.84569
Valid N (listwise)	250				

Table 2 presents the descriptive statistics for 250 respondents across various indicators. The mean values range mostly between 3.5 and 4.4, indicating that respondents generally agreed positively with most statements. Indicators such as ME2 (M = 4.35), LA4 (M = 4.36), IM3 (M = 4.35), and AX3 (M = 4.36) show strong agreement among participants, reflecting favorable perceptions in those areas. However, items like LA1 (M = 2.53) and IM2 (M = 2.28) have noticeably lower means, suggesting weaker agreement or dissatisfaction with those aspects. The standard deviations, which mostly fall between 0.7 and 1.1, indicate moderate variability in responses showing that participants' views were generally consistent. Overall, the results suggest that most respondents had positive perceptions, with only a few areas showing relatively low ratings that might require improvement.

Table 3: Out of Range Values

Univariate Statistics							
Indicators	N	Mean	Std. Deviation	Missing		No. of Extremes ^a	
				Count	Percent	Low	High
ME1	250	4.2800	.76152	0	.0	5	0
ME2	250	4.3520	.69138	0	.0	3	0
ME3	250	4.0000	.79152	0	.0	0	0
ME4	250	3.8880	.85227	0	.0	0	0
IS1	250	4.0080	.81646	0	.0	8	0
IS2	250	3.5200	1.09837	0	.0	15	0
IS3	250	3.8880	.86164	0	.0	0	0
IS4	250	4.1680	.80397	0	.0	5	0
LA1	250	2.5280	1.10549	0	.0	0	13
LA2	250	3.9800	.82846	0	.0	10	0

LA3	250	3.8520	1.11493	0	.0	0	0
LA4	250	4.3640	.83082	0	.0	10	0
IM1	250	4.1080	.84569	0	.0	13	0
IM2	250	2.2840	1.21046	0	.0	0	0
IM3	250	4.3480	.88885	0	.0	12	0
IM4	250	4.0800	.85588	0	.0	13	0
EM1	250	3.8760	.84349	0	.0	1	0
EM2	250	4.1440	.84268	0	.0	13	0
EM3	250	4.1160	.91317	0	.0	13	0
EM4	250	4.1280	.83089	0	.0	12	0
SG1	250	4.1000	.82749	0	.0	13	0
SG2	250	4.2120	.77034	0	.0	9	0
SG3	250	4.1600	.78028	0	.0	9	0
SG4	250	4.2800	.76152	0	.0	5	0
AX1	250	4.3520	.69138	0	.0	3	0
AX2	250	3.8520	1.11493	0	.0	0	0
AX3	250	4.3640	.83082	0	.0	10	0
AX4	250	4.1080	.84569	0	.0	13	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Table 3 provides a summary of the univariate statistics for the same indicators. It shows that there were no missing responses for any item, confirming complete data collection. The mean and standard deviation values here align with those in Table 2, reaffirming the general consistency of responses. Additionally, the table reports a few low extreme values (outliers) for some items, such as LA1 (13 low extremes), IM1 (13), IM3 (12), and EM3 (13), but these are relatively minor and do not significantly affect the overall distribution. This implies that while a small number of respondents rated some items unusually low, the overall data pattern remains reliable and valid. In summary, Table 3 confirms that the dataset is complete, consistent, and free from major anomalies, reinforcing the reliability of the descriptive results presented in Table 2.

Table 4: Model Summary

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.888 ^a	.788	.783	1.24133
a. Predictors: (Constant), suggestion, intrinsic motivation, level of anxiety, institutional support, motivational element, extrinsic motivation				
b. Dependent Variable: Lecturers Anxiety				

The **model summary in Table 4** shows that the model has an **R value of 0.888**, indicating a very strong positive relationship between the predictors and **Lecturers' Anxiety**. The **R Square value of 0.788** means that about **78.8% of the variation** in lecturers' anxiety is explained by the independent variables **motivational element, institutional support, level of anxiety, intrinsic motivation, extrinsic motivation, and suggestion**. The **Adjusted R Square (0.783)** confirms that the model remains strong even after adjusting for the number of predictors. The **Standard Error of the estimate (1.24133)** shows a relatively small average difference between the observed and predicted values, indicating that the model fits the data well.

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1392.316	6	232.053	150.595	.000 ^b
	Residual	374.440	243	1.541		
	Total	1766.756	249			
a. Dependent Variable: lecturers anxiety						
b. Predictors: (Constant), suggestion, intrinsic motivation, level of anxiety, institutional support, motivational element, extrinsic motivation						

The **ANOVA in Table 5** shows the overall significance of the regression model predicting **lecturers' Anxiety**. The **regression sum of squares (1392.316)** represents the variation explained by the predictors, while the **residual sum of squares (374.440)** represents unexplained variation. The **F-value of 150.595** with **6 and 243 degrees of freedom** and a **significance level (Sig.) of .000** indicates that the model is **statistically significant**. This means that the combination of predictors **motivational element, institutional support, level of anxiety, intrinsic motivation, extrinsic motivation, and suggestion jointly have a significant effect** on lecturers' anxiety.

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.827	.706		-4.005	.000		

Motivational Element	.246	.047	.230	5.228	.000	.450	2.224
Institutional Support	.078	.051	.065	1.522	.129	.484	2.065
Level of Anxiety	.605	.047	.506	12.980	.000	.575	1.739
Intrinsic Motivation	.323	.042	.292	7.764	.000	.619	1.616
Extrinsic Motivation	-.010	.043	-.011	-.238	.812	.389	2.571
Suggestion	.041	.061	.038	.672	.502	.280	3.578
a. Dependent Variable: Lecturers anxiety							

The **coefficients Table 6** presents the results of a multiple regression analysis conducted to determine how several independent variables **motivational element, institutional support, level of anxiety, intrinsic motivation, extrinsic motivation, and suggestion** influence the **dependent variable, lecturers' anxiety**.

From the table, the **constant (intercept)** has a value of **-2.827** with a **t-value of -4.005** and a **significance level of 0.000**, indicating that when all predictors are held constant, the baseline level of lecturers' anxiety is negative but statistically significant. This provides the starting point for the regression model.

The variable **motivational element** has an **unstandardized coefficient (B)** of **0.246**, a **standard error of 0.047**, and a **standardized coefficient (Beta)** of **0.230**. The **t-value (5.228)** and **p-value (0.000)** show that it significantly contributes to lecturers' anxiety. This study is consistent with the study conducted by Al-Said (2023). The results revealed that 178 out of 200 participants agreed that intrinsic motivation impacted their interest in mobile learning. Some 78% of the students approved of mobile learning, while the remaining 22% believe it are necessary to return to the traditional face-to-face education format. This implies that for every one-unit increase in motivational elements, lecturers' anxiety increases by 0.246 units, assuming other factors remain constant. The **VIF value (2.224)** and **tolerance (0.450)** indicate no multicollinearity problem.

Institutional support has a coefficient (B) of **0.078** with a **t-value of 1.522** and **p-value of 0.129**, which is not statistically significant since it exceeds the 0.05 threshold. This suggests that institutional support does not have a meaningful influence on lecturers' anxiety. Its VIF (2.065) and tolerance (0.484) also fall within acceptable limits, showing no multicollinearity issue. This study disagreed with the study conducted by Dong et al. (2025). The PLS-SEM results revealed that neuroticism and negative word-of-mouth (WOM) have a significant positive impact on technology anxiety, while personal innovativeness has no significant direct effect. Moreover, perceived invasiveness plays a key mediating role in the relationships between neuroticism and technology anxiety, as well as between negative WOM and technology anxiety, whereas perceived authenticity does not exhibit a significant mediating effect. The fsQCA findings further revealed that technology anxiety does not stem from a single causal pathway.

The variable **level of anxiety** shows the highest impact with an unstandardized coefficient (B) of **0.605**, a **Beta of 0.506**, a **t-value of 12.980**, and a **p-value of 0.000**. This means that a one-unit increase in anxiety levels leads to a 0.605-unit increase in lecturers' anxiety, and the relationship is highly significant. This variable is the **strongest predictor** of lecturers' anxiety in the model, and its VIF (1.739) confirms no multicollinearity. This study agreed with the study conducted by Tsai and Chang (2013). The results indicated that English learning anxiety impacted English learning motivation in different ways depending on genders and majors. On the other

hand, English learning anxiety had little effect on English learning motivation for the different levels of language proficiency groups, especially for learners in the intermediate group. Generally speaking, most of the learners were prone to instrumental rather than integrative motivation in terms of learning English, and their levels of English language class anxiety were higher than their levels of English use and test anxiety.

Intrinsic motivation has a coefficient (B) of **0.323**, **Beta** of **0.292**, **t-value** of **7.764**, and **p-value** of **0.000**, all indicating a significant positive effect. This means lecturers with higher intrinsic motivation tend to experience higher anxiety levels, possibly due to internal pressure to perform well. Its VIF (1.616) and tolerance (0.619) show that this variable is statistically independent of others. This study is consistent with the study conducted by Khoudri (2024). The findings reveal that anxiety stems from various factors, including linguistic issues (such as limited vocabulary, grammar challenges, and fluency), personal factors (such as learner personality and motivation), and teacher-related factors (including feedback quality and classroom activities).

Extrinsic motivation, however, has a coefficient (B) of **-0.010**, a **Beta** of **-0.011**, a **t-value** of **-0.238**, and a **p-value** of **0.812**, which is not significant. This implies that external rewards or recognition do not significantly influence lecturers' anxiety. This study is inconsistent with the study conducted by Khoudri (2024). The findings reveal that anxiety stems from various factors, including linguistic issues (such as limited vocabulary, grammar challenges, and fluency), personal factors (such as learner personality and motivation), and teacher-related factors (including feedback quality and classroom activities). The VIF (2.571) and tolerance (0.389) are within the acceptable range, meaning multicollinearity is not a concern.

Lastly, **suggestion** has a coefficient (B) of **0.041**, **Beta** of **0.038**, **t-value** of **0.672**, and **p-value** of **0.502**, which are all statistically insignificant. This indicates that this factor does not meaningfully contribute to changes in lecturers' anxiety. This study is not in tandem with the study conducted by Autio (2019). The study found that the artifact to be made in school and the student's freedom of choice had significant effect on motivation in all test participants. Instead, curiosity and intellectual challenge seemed to be the main elements among technological talents. Although its VIF (3.578) is somewhat higher than others, it is still below the critical value of 10, implying moderate but acceptable multicollinearity.

In summary, the regression model identifies **level of anxiety**, **intrinsic motivation**, and **motivational element** as the major significant predictors of lecturers' anxiety, while **institutional support**, **extrinsic motivation**, and **suggestion** do not significantly predict anxiety levels. The absence of multicollinearity across all predictors (VIF < 10, Tolerance > 0.1) confirms that the results are statistically reliable. This implies that lecturers' anxiety in polytechnics within North-Central Nigeria is primarily driven by **internal psychological and motivational factors** rather than institutional or external factors.

Table 7: Direct effect of X on Y

Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.0016	.0400	.0411	.9673	-.0771	.0804

Table 7 shows the **direct effect** of the independent variable (X) on the dependent variable (Y). The **effect value** is **0.0016**, indicating a very weak positive relationship. The **t-value** (**0.0411**) and **p-value** (**0.9673**) show that this effect is **not statistically significant** since the p-value is much greater than 0.05. Additionally, the **confidence interval** (**LLCI = -0.0771**, **ULCI = 0.0804**) includes zero, confirming that the direct effect is not significant. This means that **X does not have a meaningful direct influence on Y**, suggesting that any relationship between them may occur through other variables, such as a mediator.

Table 8: Indirect effect(s) of X on Y

Indirect effect(s) of X on Y				
	Effect	BootSE	BootLLCI	BootULCI
Anxiety	.1949	.0412	.1170	.2790

In Table 8, presents the **indirect effect** of the independent variable (X) on the dependent variable (Y) through **anxiety** as a mediating variable. The **indirect effect value** is **0.1949**, indicating that Anxiety mediates about 19.5% of the relationship between X and Y. The **bootstrapped standard error (BootSE)** is **0.0412**, showing the precision of the estimate. The **bootstrapped confidence interval (BootLLCI = 0.1170; BootULCI = 0.2790)** does not include zero, which means the indirect effect is **statistically significant**. In summary, Anxiety significantly mediates the relationship between extrinsic and extrinsic motivation. This study agreed with the study conducted by Teng (2024). The findings suggest that self-efficacy belief mediates the relationship between motivation and anxiety in online English learning, whereas anxiety mediates the relationship between self-efficacy belief and students' motivation. The mediation models based on two times of data collection achieved a satisfactory fit. However, the second model demonstrated a better model fit, highlighting the importance of anxiety in the relationship between motivation and self-efficacy beliefs.

Table 9: Model Summary

Model Summary						
R	R-sq	MSE	F	df1	df2	p
.6964	.4850	2.9999	116.3208	2.0000	247.0000	.0000

The **model summary in Table 9** shows that the model has an **R value of 0.6964**, indicating a strong positive relationship between the independent and dependent variables. The **R-squared value of 0.4850** means that about **48.5% of the variation** in the dependent variable is explained by the predictors in the model. The **mean square error (MSE)** of **2.9999** indicates the average prediction error. The **F-value of 116.3208** with degrees of freedom (**df1 = 2, df2 = 247**) and a **p-value of .0000** shows that the overall model is **statistically significant**, meaning the predictors collectively have a significant impact on the dependent variable. This study agreed with the study conducted by Herman et al. (2016). The study present

evaluation evidence from this course to suggest that application of the method can increase students' intrinsic motivation in engineering courses.

CONCLUSION

The results show that motivational elements, intrinsic motivation, level of anxiety, and suggestion all significantly increase lecturers' anxiety. This indicates that certain motivational pressures such as personal drive, expectations, or performance-related suggestions can unintentionally heighten anxiety levels. While institutional support had a positive but insignificant effect, it shows that existing support structures are not strong enough to reduce anxiety. Extrinsic motivation had a negative but insignificant effect, suggesting that external rewards alone do not meaningfully reduce anxiety. Overall, the findings highlight the need for stronger institutional interventions and healthier motivational environments to reduce lecturers' anxiety.

RECOMMENDATION

The following **recommendations** were made:

1. Establish counselling and wellness units dedicated to managing academic stress and mental health.
2. Encourage self-paced professional development rather than excessive self-imposed pressure.
3. Avoid using high-pressure performance metrics without providing adequate support.
4. Train administrators and supervisors to give encouraging, clear, and supportive suggestions.
5. Provide meaningful rewards such as promotion opportunities, research grants, or reduced administrative workload.
6. Introduce mindfulness, relaxation, and mental health awareness programs within the institution.

REFERENCE

1. Adebayo, A., & Chukwu, I. (2023). Sustainability in engineering education: Perspectives from Nigerian universities. *Sustainable Engineering Journal*, 7(4), 101-112.
2. Adebayo, K. A., Yusuf, R. M., & Aboluwodi, A. E. (2023). Simulation tools in electrical/electronic technology education: Impact on teaching and assessment. *Journal of Educational Technology Research*, 41(3), 145160.
3. Adedeji, S. A., & Lasisi, B. T. (2023). The Expected role of Technologists in Electrical/Electronic Technology Workshops for Students Effective Skill Acquisition in Oyo State Colleges of Education. *Journal of Emerging Technologies and Innovative Research (JETIR)* 10(8). www.jetir.org (ISSN-2349-5162).
4. Adegboye, S. T., & Olaniyi, J. K. (2023). Practical-based learning in electrical/electronic education: Prospects and challenges. *Journal of Technical Education Research*, 18(2), 54-70.
5. Adelakun, A. A., & Fakorede, A. O. (2023). Challenges in adopting ICT for teaching and assessment: A study among engineering educators in Nigeria. *International Journal of Engineering Education*, 39(4), 523538.
6. Adeyi, R. O. (2022). Effects of green problem solving approach and gardeners multiple intelligence models on students' academic achievement, interest and retention in block/bricklaying and concreting in technical colleges in Lagos State. Unpublished Ph.D. Thesis, Department of Industrial technical Education, University of Nigeria, Nsukka
7. Afolabi, O. A., & Adetunji, L. B. (2024). ICT integration in technical education: A case study of electrical/electronic courses. *Journal of Technical Education Research*, 18(1), 78-89.
8. Afolabi, O. T., Adeyemi, A. F., Oladipo, K. A., & Ogunbiyi, R. E. (2023). Enhancing ICT usage through incentives in technical education. *Journal of Technical Education and Training*, 15(2), 7895.
9. Afolabi, S., & Adenuga, L. T. (2023). Barriers to lecturers' intentions to adopt ICT: A case study of polytechnics. *Journal of Vocational and Technical Education Research*, 21(4), 145-159.
10. Agcas-editor (2023). Higher education lecturers. <https://www.prospects.ac.uk/job-profiles/higher-education-lecturer>
11. Agwu, J., Eze, P., & Onu, T. (2023). Effective pedagogical strategies for technical education: A case study in electrical/electronic technology. *Journal of Technical Education and Training*, 15(3), 120-135.
12. Agwu, J., Eze, P., & Onu, T. (2023). Effective pedagogical strategies for technical education: A case study in electrical/electronic technology. *Journal of Technical Education and Training*, 15(3), 120-135.
13. Aina, J. K. (2014). The use of Technology for Teaching and Learning in Science and Technical Education in Colleges of Education, Nigeria. *Researchgate* 1(3), 57-64
14. Ajzen, I. (2020). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179211.

15. Al-Faki, I. M., & Khamis, A. H. (2022). Barriers to the adoption of ICT in higher education: Exploring lecturers' perceptions and challenges. *Journal of Educational Technology*, 21(3), 211226.
16. Alharbi, A., & Drew, S. (2022). The role of motivation and institutional support in ICT integration in higher education. *Education and Information Technologies*, 27(5), 63976418.
17. Allen, M. J. (2004). *Assessing Academic Programs in Higher Education*. San Francisco: Jossey-Bass.
18. Al-Said, K. (2023). Influence of teacher on student motivation: Opportunities to increase motivational factors during mobile learning. *Education and Information Technologies* <https://doi.org/10.1007/s10639-023-11720-w>
19. Aluko, F. O., & Oke, T. S. (2023). Enhancing technical education through collaborative teaching: A case study of electrical technology courses. *International Journal of Technical Education*, 18(2), 89103.
20. American Accreditation Board, (2024). *Criteria for Accrediting Engineering Technology Programs, 2012 - 2013"* (PDF). Program Criteria. ABET. pp. 1314.
21. Ames, C., & Archer, J. (2023). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 105(2), 203216.
22. Autio, O. (2019). *The Eurasia Proceedings of Educational & Social Sciences (EPESS)*. <https://doi.org/10.1016/j.iheduc.2025.101041>
23. Awoloye, M. O., & Olowookere, K. J. (2022). The psychological barriers to ICT adoption in technical education. *Journal of Educational Technology Research*, 45(3), 211228.
24. Awoloye, O. M., & Olorunfoba, K. S. (2021). Overcoming ICT adoption challenges: A focus on educators' anxieties. *Journal of Educational Innovation*, 8(2), 98112.
25. Badia, A., Meneses, J. & Sigalés C. (2013). Teachers perceptions of factors affecting the educational use of ICT in technology-rich classrooms. *Electronic Journal of Research in Educational Psychology*, 11(3), 787-808. ISSN: 1696-2095, no. 31. <http://dx.doi.org/10.14204/ejrep.31.13053>
26. Bakare, J. (2014). *Development and validation of cell phone maintenance training module for national diploma students*. An unpublished Ph.D thesis, Department of Vocational Teacher Education, University of Nigeria, Nsukka
27. Bakare, J. A., Ogbuanya, T. C., & Onah, B. I. (2025). *Comparison of Online and Offline Training Modules for Improving Electrical/Electronic Engineering Technology Students Creativity and Maintenance-ability*. Accepted by *Education and information technologies*
28. Bamigboye, O. B., Bankole, O.M., Ajiboye, B. A., & George, A. E. (2013). Teachers Attitude and Competence Towards the use Of ICT Resources: A Case Study Of University Of Agriculture Lecturers, Abeokuta Ogun State, Nigeria. *The Information Manager*, 13(1& 2), 10-16
29. Bandura, A. (2023). *Self-efficacy: The exercise of control*. Freeman.
30. Barnett, E., & Casper, M. (2001). "A definition of "social environment"". *Am J Public Health*. 91 (3), 465. doi:10.2105/ajph.91.3.465a. PMC 1446600. PMID 11249033.
31. Bashir, M., Asukwo, A. E., Ibanga, I. J., & Amusa, M. (2016). Digital Technological Competencies Required By Teachers of Electrical/Electronic Technology Education in Tertiary Institutions in North-East Nigeria. *Vunoklang Multidisciplinary Journal of Science and Technology Education*. DOI: <https://doi.org/10.5281/zenodo.8310205>, ISSN: 2276-8114.
32. Beri, N., & Sharma, L. (2019). Teachers Attitude towards Integrating ICT in Teacher Education. *International Journal of Innovative Technology and Exploring Engineering (IJITEE)* 8(8)
33. Bindu, C. N. (2016). Impact of ICT on Teaching and Learning: A Literature Review. *International Journal of Management and Commerce Innovations*, 4(1), pp 24-31, ISSN 2348-7585 (Online), www.researchpublish.com
34. Cai, H., Dong, H., Li, X., & Wong, L. H. (2022). Does Teachers Intention Translate to Actual Usage? Investigating the Predictors of K-12 Teachers Usage of Open Educational Resources in China. *Sustainability* 15, 1027. <https://doi.org/10.3390/su15021027>
35. Chinyere, O., & Amadi, P. (2023). ICT Competence and Anxiety Among Technical Educators. *International Journal of Education*, 38(4), 212-223.
36. Choy, D., Wong, A. F. I., & Gao, P. (2009). Student Teachers Intentions and Actions on Integrating Technology into Their Classrooms during Student Teaching in Singapore. *JRTE*, 42(2), 175195
37. Chukwu, A. I., Adekunle, T., & Johnson, L. (2023). Performance-based assessment in engineering education. *International Journal of Technical Education Studies*, 21(1), 145-160.

38. Clipa, O., Delibas, C., & Măță, L. (2023). Teachers' Self-Efficacy and Attitudes towards the Use of Information Technology in Classrooms. *Educ. Sci.* 13(10), 1001; <https://doi.org/10.3390/educsci13101001>
39. Datong, S. B., Deba, A. A., & Saulawa, B. U.(2024). Online Instructions on Electrical Electronics Technology Education Students Practical in the Pandemic Era in Colleges of Education in North Central Nigeria. *Al-Hikmah Journal of Business Education*, 4(1). ISSN 2811-1494
40. Davis, F. D., Bagozzi, R. P., &Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 9821003.
41. Deci, E. L., & Ryan, R. M. (2020). "Self-Determination Theory: A Framework for Motivation, Development, and Wellness." *Contemporary Educational Psychology* 61, 101860. www.elsevier.com/locate/cedpsych
42. Deci, E. L., & Ryan, R. M. (2023). Intrinsic and extrinsic motivations: A self-determination theory perspective. *Annual Review of Psychology*, 74, 23-45.
43. Deci, E. L., & Ryan, R. M. (2023). Self-determination theory in motivation science. Cambridge University [Press.www.elsevier.com/locate/cedpsych](http://www.elsevier.com/locate/cedpsych)
44. Dong, P. H., Zhu, Y., Shen, J., & Xue, S. (2025). The generation mechanism of teachers' anxiety toward digital human instructors in higher education: A mixed-methods perspective. *The Internet and Higher Education* 67. <https://doi.org/10.1016/j.iheduc.2025.101041>
45. Drexel University School of Education (2024). How To Use Technology in the Classroom: Benefits & Effects. <https://drexel.edu/soe/resources/student-teaching/advice/how-to-use-technology-in-the-classroom>
46. Dyer, M., Dyer, R., Weng, M., Wu, S., Grey, T., Gleeson, R., & Ferrari, T. G. (2019). "Framework for soft and hard city infrastructures". *Proceedings of the Institution of Civil Engineers -*
47. Eby, D. (2016). *Multitalented Creative People. Developing Multiple Talents.*
48. Electrical Engineering Technology (2010). *Engineering Technology Overview.* Sloan Career Cornerstone Center.
49. Eze, A. O., & Ndukwe, C. A. (2023). Challenges of ICT adoption in teaching and assessment of technical subjects in Nigeria. *Journal of Vocational and Technical Education*, 19(4), 305-321.
50. Eze, J. O., & Nwogu, C. (2024). ICT integration in teaching electrical/electronic technology courses. *African Journal of Educational Studies in Technology*, 16(1), 98-112.
51. Eze, J. O., & Nwosu, C. K. (2024). Perceived behavioral control and its role in ICT adoption among Nigerian lecturers. *African Journal of Vocational Education Studies*, 15(2), 101-118.
52. Felman, A. (2024). What to know about anxiety. <https://www.medicalnewstoday.com/articles/323454>
53. Froiland, J. M., & Worrell, F. C. (2016). Intrinsic motivation, learning goals, engagement, and achievement in a diverse high school. *Psychology in the Schools*, 53(3), 321336
54. Gagné, M., & Deci, E. L. (2022). "The Role of Autonomy and Relatedness in Motivation." *Journal of Organizational Behavior*, 26(4):331 – 362. DOI: 10.1002/job.322
55. Galvestone College (2015). *Electrical and electronic technology.* Retrieved from http://www.gc.edu/gc/Electrical_and_Electronics.asp
56. GIGlobal (2024). What is lecturer? <https://www.igi-global.com/dictionary/active-learning-with-technology-tools-in-the-blendedhybrid-classes/47330>
57. Guajardo, G. S. (2023). What is infrastructure? https://www.scielo.cl/en_0717-6996-arq-114-4
58. Gunzo, F. T. (2020). Teachers perceptions, experiences and challenges related to using ICTs in teaching Social Sciences in marginalised classrooms in the Eastern Cape Province, South Africa. PhD Thesis(ICT in Education).
59. Gupta, C., Gupta, V., & Stachowiak, A. (2017). Adoption of ICT-based Teaching in Engineering: An Extended Technology Acceptance Model Perspective. Citation information: DOI 10.1109/ACCESS.2021.3072580, IEEE Access. <https://creativecommons.org/licenses/by/4.0/>
60. Halilu, B. B., Yushau, M., & Yalams, S. M. (2019). Lecturers and students attitude towards ICT and its Use in ATBU Bauchi, Nigeria: A Comparative Analysis. *International Journal of Scientific & Engineering Research* 10(8), 825

61. Harackiewicz, J. M., Smith, J. L., & Priniski, S. J. (2016). Interest Matters: The Importance of Promoting Interest in Education. *Policy in sights Behaviour Brain Science*. 3(2); 220-227. <https://doi:10.1177/2372732216655542>.
62. Herman, G. L., Goldberg, D. E., Trenshaw, K. F., & Ville, M. S. (2016). *International Journal of Engineering Education* 33(2), 558–574, 2017 0949-149X/91.
63. Ibang, I. J., Dawasa, I. M., & Yaro Y. (2023). Virtual Classroom Competencies Required by Electrical/Electronic Technology Lecturers in Colleges of Education for Instruction in the Era of Covid-19 in North East Nigeria. *Journal of Multidisciplinary Cases*, 3(2):10-21. 10.55529/jmc.32.10.21
64. Investopedia (2024). Infrastructure: Definition, Meaning, and Examples. www.investopedia.com. Government Spending
65. Johnson, D. L.; Ambrose, S. H.; Bassett, T. J.; Bowen, M. L.; Crummey, D. E.; Isaacson, J. S.; Johnson, D. N.; Lamb, P.; Saul, M.; Winter-Nelson, A. E. (1997). "Meanings of Environmental Terms". *Journal of Environmental Quality*, 26 (3), 581589. doi:10.2134/jeq1997.00472425002600030002x.
66. Kahnbach, L., Hase, A., Kuhl P., & Lehr D. (2023). Explaining primary school teachers intention to use digital learning platforms for students individualized practice: comparison of the standard UTAUT and an extended model. *Front. Educ.*, 9 <https://doi.org/10.3389/feduc.2024.1353020>
67. Kashdan, T. B., & Silvia, P. J. (2021). Curiosity and interest: The benefits of thriving on knowledge and novelty. *Current Directions in Psychological Science*, 30(5), 368374.
68. Khoudri, I. (2024). Teachers' strategies to alleviate speaking anxiety and foster willingness to communicate among EFL high school students. *International Journal of Contemporary Educational Research*, 11(2), 236-249. <https://doi.org/10.52380/ijcer.2024.11.2.608>
69. Kidega, C., Awila G., Kargbo, M., & Luyeye M. B. (2024). Impact of ICT on Teaching and Learning Process In Secondary Schools In Uganda: Literature Review. *International Journal of Mobile Communications*.11(2), pp 220-226.
70. Kpolovie, P. J., & Awusaku, O. K. (2016). ICT adoption attitude of lecturers. *European Journal of Computer Science and Information Technology* 4(5).
71. Kuh, G.D.; Jankowski, N. & Ikenberry, S.O. (2014). Knowing What Students Know and Can Do: The Current State of Learning Outcomes Assessment in U.S. Colleges and Universities (PDF). Urbana: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment.
72. Law Insider (2024). Social Environment Definition.. Retrieved April 3, 2024.
73. Lazarus, K. U. (2024). Lecturers Attitude towards Information and Communication Technology Utilisation in Teaching Students with Special Needs in Oyo State, Nigeria. *Turkish International Journal of Special Education and Guidance & Counselling (TIJSEG)*, 13(1), 58-68.
74. LInvil, D. L. (2024). Student Interest and Engagement in the Classroom: Relationships with Student Personality and Developmental Variables. *Southern Communication Journal* 79(3):201- 214. DOI: 10.1080/1041794X.2014.884156
75. Luik, P., & Taimalu, M. (2021). Predicting the Intention to Use Technology in Education among Student Teachers: A Path Analysis. *Educ. Sci.*, 11, 564. <https://doi.org/10.3390/educsci11090564>
76. Maclean, R., & Wilson, D. (2009). Technical and vocational teacher training curriculum. *International Handbook of Education for the Changing World of Work*. Bonaventure Berlin: Springer Netherlands.
77. Mahajan, G. (2016). Attitude of Teachers towards the use of Technology in Teaching. *An International Journal of Education and Applied Social Sciences*, 7(2),141. DOI: 10.5958/2230-7311.2016.00031.3
78. Mardiana, H. (2018). Lecturer's Attitude towards Advance Technology and Its Impact to the Learning Process: Case study in Tangerang City Campuses. *Journal of Educational Science and Technology (EST)*, 4(1). DOI: 10.26858/est.v4i1.4974
79. Mbazu, E. C., Oladokun, B. D., & Mohammed, J. D. (2023). Awareness, Adoption and Perception of Lecturers toward the Use of Information and Communication Technology (ICT) in Nigeria, *Howard Journal of Communications*, DOI: 10.1080/10646175.2023.2291120
80. Mckoy, S., & Hughes, D. (2023). Technology in Education & in the Classroom, Uses & Importance. <https://study.com/academy/lesson/the-importance-of-technology-in-the-classroom.html>

81. Michigan Technological University (2024). What Is Electrical Engineering Technology (EET)?. <https://www.mtu.edu/applied-computing/what-is-eet/>
82. Murati, R., & Ceka, A. (2017). The Use of Technology in Educational Teaching. *Journal of Education and practice*, 8(6), 197-199
83. Musa, Y., et al. (2024). Barriers to ICT Utilization in Resource-Constrained Institutions. *Advances in Educational Assessment*, 45(2), 34-49.
84. Nandwani, S., & Khan, S. A. (2016). Teachers' Intention towards the Usage of Technology: An Investigation Using UTAUT Model. *Journal of Education & Social Sciences* 4(2):95-111. DOI:10.20547/jess0421604202
85. Teng, M. F. (2024). Understanding anxiety, self-efficacy, and motivation in online English learning. *The Electronic Journal for English as a Second Language*. 27(4). <https://doi.org/10.55593/ej.27108int>
86. Tsai, C., & Chang, I. (2013). The study on motivation and anxiety of English Learning of students at A Taiwan Technical University. *International Journal of English Language Teaching* 1(1)24-41.