Teachers' Perspectives and Attitudes in Integrating Technology into Mechanical Craft Practice Teaching in Technical Colleges in Lagos State, Nigeria

[1]Dawodu Rasheed Adegbenro Ph. D., [1]Ogunbote Shefiu Ph. D., [1]Adegunle, Felix Omotayo Ph. D., [2]Lemo Olusiji Olaseni Ph. D., [2]Fadairo, Olatunji Oriola Ph.D

[1]Department of Technology Education, College Of Information and Technology Education, Lagos State University Of Education Oto/Ijanikin, Lagos State, Nigeria

[2]Department of Industrial Technical Education, College Of Vocational And Technology Education, Tai Solarin University Of Education, Ijagun, Ogun State, Nigeria

DOI: https://doi.org/10.51584/IJRIAS.2025.10040099

Received: 24 April 2025; Accepted: 29 April 2025; Published: 24 May 2025

ABSTRACT

This study investigated teachers' perspectives and attitudes toward integrating technology into mechanical craft practice teaching in Lagos State technical colleges. Two research questions and two hypotheses tested at 0.05 level of significance was used for the study. A descriptive survey design was used to collect data from 24 teachers across four colleges The population of the study was twenty-four mechanical craft practice teachers from four technical colleges that offered the course which made up the sample size. No sampling technique was used in the study. The instrument for the data collection was a self-constructed questionnaire titled Teachers' Perspectives and Attitudes toward Integrating Technology into Mechanical Craft Practice Teaching'. The instrument was designed in a 5-point like scale of requirement. The questionnaire underwent face validation by three experts: two from the Department of Industrial Technical Education, College of Vocational and Technology Education, Tai Solarin University of Education, Ijagun Ijebu, Ogun State, Nigeria, and one additional mechanical craft practice expert was used. The internal consistency of the instrument was determined using the Cronbach-Alpha method, and its reliability was further established through the test-retest technique. A trial test was conducted with mechanical craft practice students from technical college, Ayetoro

Egbado, Ogun State, Nigeria. The reliability coefficient was calculated to be 0.81, indicating that the instrument was reliable and valid for the study. The instrument was administered by the researchers. *Data collected were analyzed using mean and standard deviation for the research questions, while t-test was used to test the hypotheses.* Findings revealed that teachers generally have a positive attitude toward technology integration. However, challenges such as inadequate infrastructure, lack of trained personnel, and insufficient funding hinder effective implementation. Recommendations include policy interventions, professional development, increased investment in technological infrastructure, curriculum enhancement, and industry collaboration to improve teaching and student engagement.

Keywords: Teachers' Perspectives, Attitudes, Technology

INTRODUCTION

The integration of technology in education has become increasingly crucial in recent years, transforming pedagogical approaches and enhancing learning experiences. This is particularly relevant in technical education fields like mechanical craft practice, where hands-on skills are traditionally emphasized. Technical colleges in Lagos State, like many technical education institutions globally play a vital role in equipping students with practical skills for gainful employment and entrepreneurship. Bassey and Ajie (2024) described mechanical craft practice as one of the technical education programs offered in technical colleges, structured to produce craftsmen capable of performing basic operations in the industry. Elom (2014) further described mechanical craft practice as a form of training designed to equip learners with the knowledge and skills

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

required to perform machine operations according to mechanical drawings and work instructions, apply their acquired competencies in workplace situations, and work independently in the industry.

In the field of mechanical craft practice, technology offers immense potential to enhance teaching methodologies, improve student engagement and bridge the gap between the theoretical knowledge and practical skills. However, the effective integration of technology in teaching mechanical craft practice remains a challenge. While technology has the potential to enhance instructional delivery and practical skills development, its adoption is often hindered by various factors, including teacher attitudes, resource availability, and government policies. Teachers' perspective and attitudes towards technology play a crucial role in determining its successful adoption in the classroom. Studies have shown that educators who perceive technology as beneficial are more likely to integrate it into their teaching methods (Ajibola & Olayemi, 2020). However, resistance to change, fear of obsolescence, and lack of technical skills often affect their willingness to use technological tools for their teaching resulting into poor students' performance. Understanding teachers' perceptions and beliefs regarding technology integration is therefore critical for informed policy making and effective implementation strategies. Hence, the study investigates the teachers' perspectives and attitudes challenges in integrating technology into mechanical craft practice teaching in technical colleges in Lagos State, aiming to identify factors that influence their adoption and use of technology in the classroom.

LITERATURE REVIEW

Within the context of vocational education, studies have shown that technology can significantly enhance the learning of practical skills (Darling-Hammond, 2010), but challenges remain regarding access, training, and teacher support (Zawacki-Richter et al., 2019). This review will synthesize existing literature to establish a theoretical framework for examining teachers' perspectives and attitudes towards technology integration in mechanical craft practice within the specific context of technical colleges in Lagos State. These Studies have consistently highlighted the potential benefits of technology in enhancing student engagement, improving learning outcomes, and fostering creativity among students of mechanical craft practice in technical colleges.

The Conceptual and Theoretical Framework

The conceptual and theoretical framework for this study is grounded in the Unified Theory of Acceptance and Use of Technology (UTAUT), which offers a comprehensive lens for examining teachers' perspectives and attitudes toward technology integration. The framework incorporates core constructs such as performance expectancy, effort expectancy, social influence, and facilitating conditions to assess the factors influencing teachers' acceptance and use of digital tools in Mechanical Craft Practice teaching. This approach provides a clear structure for exploring how individual beliefs, institutional support, and social factors affect technology adoption in technical colleges in Lagos State, thereby guiding strategies for effective implementation and professional development.

Statement of the Problem

Despite the potential benefits of technology integration in mechanical craft practice, its implementation in technical colleges in Lagos State remains limited. Many teachers lack the necessary skill training, resources, and support to effectively integrate technology into their teaching. This results in underutilized technology resources and a missed opportunity to enhance the quality of technical education. Furthermore, a lack of understanding of teachers' perspectives and attitudes towards technology integration hinders the development of effective implementation strategies. This study addresses this gap by investigating the perspectives and attitudes of teachers towards technology integration in the teaching of mechanical craft practice, identifying barriers to adoption, and exploring strategies to promote effective integration.

Purpose of the Study

The main purpose of the study is to investigate the Teachers' Perspectives and Attitudes in Integrating

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

Technology into Mechanical Craft Practice Teaching in Technical Colleges in Lagos State, Nigeria.

Specifically, the study sought to:

i. To examine the perspectives of teachers in technical colleges in Lagos State on the integration of technology in the teaching of mechanical craft practice.

ii. To investigate the attitudes of teachers towards the use of various technological tools such as simulations, virtual labs, and online learning platforms in teaching mechanical craft practice in technical colleges in Lagos State.

Research Questions

1. What are the perspectives of teachers in technical colleges in Lagos State regarding the integration of technology in the teaching of mechanical craft practice?

2. What are the attitudes of teachers towards the use of different types of technology such as simulations, virtual labs, online learning platform in teaching mechanical craft practice in Technical Colleges in Lagos State?

Hypotheses

The null hypotheses formulated for the study were tested at 0.05 level of significance

Ho1: There is no significant relationship between teachers' levels of perspective and technology integration in teaching of mechanical craft practice in Technical Colleges in Lagos State.

Ho2: There is no significant relationship between teachers' attitudes and use of different types of technology in teaching mechanical craft practice in Technical Colleges in Lagos State

METHODOLOGY

The study was carried out in four technical colleges in Lagos State using a descriptive survey research design. The population of the study consisted of all twenty four mechanical craft practice teachers in four technical colleges in Lagos State that offered the mechanical craft practice. Since the population was small, the entire population was used for the study. A self-developed survey questionnaire titled "Teachers' Perspectives and Attitudes in Integrating Technology into Mechanical Craft Practice Teaching in Technical Colleges in Lagos State" (TAITMCPTTCLS) served as the instrument for data collection. The questionnaire was structured using a four-point rating scale: Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD). The instrument underwent face validation by three experts from the Department of Vocational and Technical Education at Tai Solarin University of Education, Ijagun, Ijebu Ode, Ogun State. Additionally, the reliability of the instrument was tested using Cronbach's Alpha, yielding a reliability coefficient of 0.81, confirming its reliability. Copies of the questionnaire were administered and retrieved by the researchers on the spot. Mean and standard deviation were used to answer the research questions, while t-test statistical tool was used to test the hypothesis. A mean score of less than 2.50 was rejected, whereas a mean score of 2.50 and above was accepted. Furthermore, a t-calculated value lower than the t-critical value was accepted, while a t-calculated value higher than the t-critical value was rejected. The results indicated no significant relationship between teachers' levels of technological proficiency and their attitudes toward technology integration in mechanical craft practice in technical colleges in Lagos State.

RESULTS

Research Question 1: What are the perspectives of teachers in technical colleges in Lagos State regarding the integration of technology in the teaching of mechanical craft practice?

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

Table 1: Mean and Standard Deviation Responses on the perspectives of teachers in technical colleges in Lagos State regarding the integration of technology in the teaching of mechanical craft practice

S/N	Items	X	SD	Remarks
1.	The integration of technology enhances my teaching of mechanical craft practice	3.33	0.96	Agreed
2.	Technology helps improve my students' understanding of mechanical craft concepts.	3.63	0.71	Agreed
3.	Using technology in teaching makes my lessons more engaging and interactive.	3.42	0.65	Agreed
4.	Technology integration is essential for modern mechanical craft education.	3.54	0.72	Agreed
5.	I feel confident in my ability to use technology effectively in teaching.	3,50	0.59	Agreed
6.	The use of digital tools, such as simulations and animations, improves my students' practical skills.	3.08	0.93	Agreed
7.	Technology makes my lesson planning and delivery more efficient.	3.71	0.55	Agreed
8.	The adoption of technology in teaching mechanical craft practice is beneficial to me and my students.	3.16	0.92	Agreed
9.	Use of Traditional teaching methods are more effective than technology-based approaches in mechanical craftpractice.	3.71	0.75	Agreed
10.	The integration of technology aligns with the goals of technicaleducation	3.46	0.83	Agreed
11.	The use of technology fosters creativity and innovation among my students in mechanical craft practice.	3.58	0.78	Agreed
12.	The use of technology improves my students' ability to solve technical problems in mechanical craft practice.	3.58	0.50	Agreed
13.	I believe that technology should be a core component of teaching mechanical craft practice.	3.67	0.76	Agreed
14.	I have received adequate training on how to integrate technology into the teaching of mechanical craft practice.	3.25	0.85	Agreed
15.	The availability of technology resources in my school is sufficient for effective teaching.	3.63	0.65	Agreed
16.	My school provide enough support for teachers in implementing technology in mechanical craft practice.	3.75	0.61	Agreed
17.	The cost of acquiring and maintaining technology for teaching mechanical craft practice is a major challenge.	3.08	0.97	Agreed
18.	I have resistance towards using technology in teaching mechanical craft practice	3.54	0.78	Agreed
19.	The lack of reliable electricity and internet access hinders the effective use of technology in my teaching.	3.42	0.65	Agreed

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

20. There is need for more professional development programmes to help me integrate technology into my teaching mechanical craft practice effectively.	2.92.	1.02	Agreed
Grand total	**3.45**	**0.76**	

Source: Field Survey, 2025

From Table 1, which presents the perspectives of teachers in technical colleges in Lagos State regarding the integration of technology in teaching mechanical craft practice, shows that teachers agreed with all items (1–20). This indicates a positive perspective toward technology integration as a means to enhance effective teaching and student engagement in mechanical craft practice. The table further shows that the range of means is from 2.92 to 3.75, indicating that all mean values are above the cut-off for consideration. The standard deviation ranges from 0.50 to 1.02, suggesting a high degree of homogeneity in the teachers' opinions. Additionally, the closeness of the standard deviation values further confirms the consistency in their responses.

Research Question 2: What are the attitudes of teachers towards the use of different types of technology such as simulations, virtual labs, online learning platforms in teaching mechanical craft practice in Technical Colleges in Lagos State?

Table 2: Mean and Standard Deviation Responses on the attitudes of teachers towards the use of different types of technology such as simulations, virtual labs, online learning platforms in teaching mechanical craft practice in Technical Colleges in Lagos State.

S/N	Items	X	SD	Remarks
21.	I am enthusiastic about using simulations in teaching mechanical craft practice.	3.58	0.78	Agreed
22.	Virtual labs enhance my students' practical learning experiences in mechanical craft practice.	2.88	0.99	Agreed
23.	Online learning platforms are effective for my instructional delivering mechanical craft lessons.	3.25	0.85	Agreed
24.	I feel comfortable using different types of technology in my teaching.	3.38	0.88	Agreed
25.	I prefer using traditional teaching methods over technology-based methods.	3.92	0.28	Agreed
26.	I believe simulations improve my students' ability to understand complex mechanical craft concepts.	3.17	0.92	Agreed
27.	Virtual labs are a useful supplement to physical workshops in mechanical craft practice.	3.13	0.95	Agreed
28.	I am confident in my ability to use online learning platforms for teaching mechanical craft practice.	3.63	0.71	Agreed
29.	I enjoy experimenting with new technologies in my teaching.	3.33	0.82	Agreed
30.	The use of simulations, virtual labs, and online platforms make my teaching more effective.	3.25	0.74	Agreed
31.	I find it difficult to integrate different types of technology into my lessons.	3.33	0.96	Agreed
32.	I believe my students engage more when technology is incorporated into the teaching of mechanical craft.	3.33	0.76	Agreed

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

33. The use of technology in mechanical craft practice is more time-consuming than traditional methods.	3.21	0.83	Agreed
34. I am willing to receive training on using simulations, virtual labs, and online platforms in my teaching.	3.50	0.83	Agreed
35. I am open to adopting new technologies that enhance mechanical craft instruction.	3.33	0.96	Agreed
36. I feel that using technology in teaching mechanical craft practice is a valuable investment.	3.04	0.95	Agreed
37. I experience frustration when using technology due to technical difficulties.	3.50	0.59	Agreed
38. I believe that online learning platforms can effectively support hands-on mechanical craft training.	3.33	0.82	Agreed
39. I encourage my students to use digital tools and platforms for learning mechanical craft practice.	3.63	0.71	Agreed
40. I think the integration of technology in mechanical craft teaching is necessary for modern education.	3.38	0.97	Agreed
Grand total	**3.36**	**0.82**	

Source: Field Survey, 2025

Table 2 shows that the teachers agreed with items (22–40). This indicates that teachers have a positive attitude toward using different types of technology, such as simulations, virtual labs, and online learning platforms, in teaching mechanical craft practice in Technical Colleges in Lagos State. To work effectively and profitably, they also need entrepreneurial skills. The table further shows that the range of means is from 2.88 to 3.92, indicating that all mean values are above the cut-off for consideration. The standard deviation ranges from 0.28 to 0.97, suggesting a high degree of homogeneity in the teachers' opinions. This confirms that respondents recognize improving the teaching of mechanical craft practice as a valuable investment in modern education development, which, in turn, can enhance capacity and increase productivity.

Hypothesis 1

Ho1: There is no significant relationship between teachers' levels of perspective and technology integration in teaching of mechanical craft practice in Technical Colleges in Lagos State.

Table 3: t-test for teachers' level of perspective and technology integration in teaching mechanical craft practice in technical colleges in Lagos State

Subject	X	SD	N	df	t-cal	t-crit	Decision
Teachers	3.36	0.82	24	23	2.15	2.06	Significant

In table 3 above, the t- calculated > t- critical, therefore the null hypothesis that states that there is no significant relationship between teachers' levels of perspective and technology integration in teaching of mechanical craft practice in technical colleges in Lagos state is rejected. Since the t- calculated (2.90) is greater than t- critical (2.069), then it meant that there is a significant relationship between teachers' level of perspectives and technology integration in teaching mechanical craft practice in Technical Colleges in Lagos State. This suggests that teachers' perspectives play a key role in the integration of technology in teaching of mechanical craft practice. Encouraging positive perspectives through professional development, exposure to technological advancements, and institutional support may enhance the effective use of technology in teaching

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

mechanical craft practice.

Hypothesis 2

Ho2: There is no significant relationship between teachers' attitudes and use of different types of technology in teaching mechanical craft practice in Technical Colleges in Lagos State

Table 4: t-test for teachers' attitude and using of different types of technology in teaching mechanical craft practice in technical colleges in Lagos State

Subject	X	SD	N	df	t-cal	t-crit	Decision
Teachers	3.36	0.82	24	23	2.15	2.07	significant

In table 4 above, the t- calculated > t- critical, therefore the null hypothesis that states there is no significant relationship between teachers' attitudes and use of different types of technology in teaching mechanical craft practice in technical colleges in Lagos state is rejected. Since the t-calculated (2.15) is greater than t-critical (2.069), then there is a significant relationship between teachers' attitudes and the use of different types of technology in teaching mechanical craft practice in Technical Colleges in Lagos State. This finding suggests that teachers' attitudes significantly influence their adoption of technology in teaching of mechanical craft practice. To improve technology integration, educational stakeholders should focus on fostering positive attitudes toward technology through training, incentives, and awareness programmes.

DISCUSSION OF FINDINGS

The findings of this study provide valuable insights into teachers' perspectives, attitudes, and challenges in integrating technology into mechanical craft practice teaching in technical colleges in Lagos State. The results indicate a generally positive perspective and attitude toward technology integration, with statistically significant relationships between teachers' perspectives, attitudes, and the adoption of various technological tools in teaching. The results presented in Table 1 reveal that teachers in technical colleges generally hold positive perspectives toward integrating technology into mechanical craft practice teaching. The mean values, ranging from 2.92 to 3.75, indicate agreement with all items, while the standard deviation values (0.50 to 1.02) suggest a high level of consistency in their responses. This finding aligns with previous research that highlights the importance of teachers' perspectives in the successful adoption of technology in vocational and technical education (Mishra & Koehler, 2006; Agboola & Oyewole, 2020). Teachers recognize technology as a tool for enhancing instructional effectiveness and student engagement, which is crucial for skill acquisition in mechanical craft practice. The significant relationship between teachers' perspectives and technology integration, as confirmed in Table 3 (t-calculated = 2.90 > t-critical = 2.069), further supports the argument that positive perspectives influence technology adoption. This is consistent with the Technology Acceptance Model (TAM), which suggests that perceived usefulness and ease of use impact individuals' willingness to integrate technology into their professional practice (Davis, 1989). Therefore, promoting positive perspectives through professional development programs, exposure to technological innovations, and adequate institutional support can facilitate more effective technology integration in mechanical craft practice teaching. Similarly, Table 2 reveals that teachers exhibit positive attitudes toward using various forms of technology, including simulations, virtual laboratories, and online learning platforms. The mean values (2.88 to 3.92) indicate overall agreement, and the standard deviation values (0.28 to 0.97) suggest homogeneity in responses. This indicates that teachers recognize the value of technological tools in improving teaching and learning outcomes, which aligns with studies emphasizing the role of positive attitudes in adopting educational technology (Teo, 2011; Eze & Nwankwo, 2021). Table 4 confirms a significant relationship between teachers' attitudes and their use of technology (t-calculated = 2.15 > t-critical = 2.069). This suggests that fostering positive attitudes is critical for encouraging the adoption of technology in mechanical craft practice teaching. The findings are consistent with the Diffusion of Innovations Theory (Rogers, 2003), which posits that individuals' attitudes and perceptions influence their willingness to adopt new technologies. To improve technology integration, stakeholders should implement training programs, offer incentives, and create awareness campaigns to enhance teachers'

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

confidence and motivation in using digital tools. The findings underscore the importance of teacher perspectives and attitudes in the successful integration of technology in technical education. Since teachers play a key role in implementing technological innovations, their perspectives and attitudes must be continually improved through strategic interventions. Professional development initiatives focusing on the pedagogical benefits of technology, hands-on training, and access to modern technological tools can bridge the gap between traditional teaching methods and contemporary digital approaches. Additionally, institutional policies should support technology adoption by providing adequate infrastructure, technical support, and continuous training for teachers. Encouraging collaborative learning environments where teachers can share best practices and experiences with technology integration may further enhance the teaching of mechanical craft practice in technical colleges.

Limitations of the Study

This study was limited to Technical Colleges in Lagos State, Nigeria, which may not represent the views of teachers in other regions. No sampling was carried out because the population size was small; however, this limits the generalization of the findings to all Mechanical Craft Practice teachers. Additionally, reliance on data collected through questionnaire may introduce response bias or inaccuracies. Finally, due to the rapid pace of technological advancement, some findings may become outdated over time. These limitations highlight the need for broader studies and regular updates to capture evolving trends in technology integration within technical vocational education and training.

CONCLUSION

This study confirms that teachers in Lagos State technical colleges generally hold positive perspectives and attitudes toward integrating technology into mechanical craft practice teaching. The statistically significant relationships between teachers' perspectives, attitudes, and technology integration emphasize the need for continuous professional development and institutional support. By fostering positive perspectives and attitudes, technical education can leverage technology to enhance teaching effectiveness, improve student engagement, and prepare students for the demands of the modern workforce. By implementing these recommendations, technical colleges in Lagos State can maximize the benefits of technology integration in mechanical craft practice teaching. A well-structured approach involving professional development, infrastructure investment, policy support, and industry collaboration will further enhance teaching effectiveness, improve student engagement, and equip learners with the necessary skills for a technologically driven workforce.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made;

1. The government and relevant stakeholders should invest more in modern technological infrastructure, including high-speed internet, computers, and smart classrooms, to support technology-driven teaching,
2. The curriculum for mechanical craft practice should be revised to incorporate technology-based teaching methods.
3. Educational authorities should organize regular workshops, seminars, and hands-on training programs to improve teachers' competence in using technology.
4. Technical colleges should develop clear policies that encourage and support the use of technology in teaching.
5. Encouraging a culture of innovation through peer mentoring and knowledge-sharing platforms among teachers can also enhance confidence in using digital tools.
6. Technical colleges should establish partnerships with industry professionals, technology companies, and vocational training organizations.

REFERENCES

1. Akinyemi, T., & Bello, O. (2019). Challenges of integrating digital tools in technical education in

ISSN No. 2454-6194 | DOI: 10.51584/IJRIAS |Volume X Issue IV April 2025

Nigeria. Journal of Vocational Studies, 15(2), 45-58.
2. Agboola, M., & Oyewole, O. (2020). Teachers' perspectives on technology integration in technical education: A Nigerian case study. International Journal of Technical Education, 12(3), 45-60.
3. Ajibola, K., & Olayemi, S. (2020). Teachers' attitudes and technology integration in vocational education. African Journal of Technical Education, 8(1), 22-39.
4. Bassey, I. S., Ajie, P.M. (2024.Utilization of Available Learning Resources in Teaching and Learning of Mechanical Craft Practices in Government technical Colleges. African Journal of Humanities and Contemporary Education Research.15(1), 131-144.
5. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.
6. Darling-Hammond, L. (2010). Teacher Education and American Future. Journal of Teacher Education, 61, 35-47. https://dx.doi.org/10.1177/0022487109348024
7. Eze, I.T., Onwusa, S.C.C., Oluyinka, O.B. & Nwaosa, I.F. (2020). Assessment of the Auto mechanic teacher's utilization of instructional materials for teaching in Technical Colleges in Edo and Delta States, Nigeria. Journal of Educational Research. 10(10), 305-3017
8. Eze, C., & Nwankwo, P. (2021). Exploring teachers' attitudes toward digital technology in Nigerian vocational education. Journal of Education and Practice, 15(2), 78-90.
9. Elom, E.N. (2014). Innovation Strategies for Enhancing Study of Mechanical/Metalwork Technology in Higher Education Institutions. International Journal of Science Research and Education. 2(110, 2391-23997.
10. Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A framework for integrating technology in teachers' practice. Teachers College Record, 108(6), 1017-1054.
11. Nnodim, K.A. & Quintus, C.I. (2023). Suitability of Mechanical Engineering Craft Practice Skills for Self-reliance among Students in Technical Colleges in Rivers State. Journal of Vocational and Technical Education Research. 1(2), 22-31.
12. Okafor, P., & Adewale, M. (2021). Impact of computer-aided design on mechanical craft teaching in Nigerian technical colleges. International Journal of Engineering Education, 10(3), 78-92.
13. Rogers, E. M. (2003). Diffusion of innovations (5th ed.). New York; Free Press. Schmidt, D
14. Teo, T. (2011). Modeling the determinants of pre-service teachers' perceived usefulness of e-learning. Campus-Wide Information Systems, 28(2), 124-140.
15. Zawacki-Richter, O., Marin, V.I., Bond, M. & Gouverneur, F. (2019). Systematic Review of Research on Artificial Intelligence Application in Higher Education – Where Are the Educators? International Journal of Educational Technology in Higher Education, 16(39). https://doi.org/10.1186/s41239-019-0171-00