# Self-efficacy of woodwork teachers on the use of e-learning methods in teaching woodwork trades in technical colleges in Niger state

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## Abstract

The study assesses the self-efficacy of woodwork teachers on the use of e-learning in teaching woodwork trades in technical colleges in Niger state, Nigeria. Three research questions were answered using mean and standard deviation. A survey research design was adopted for the study. A structured questionnaire was used to gather data from thirty-one (31) respondents. No sampling method was used because the population was manageable. Mean rating was used to answer research questions. Cronbach Alpa Formula was used to determine reliability coefficient of the instrument. The reliability coefficient of the instrument was found to be 0.81. The findings of the study showed that Woodwork teachers are capable of using e-learning methods in teaching woodwork trades in technical colleges in Niger State. They have also integrated e-learning methods in teaching woodwork trades to some extent. The study also revealed that woodwork teachers experience some challenges that impact their self-efficacy. The study recommends that the government and NGOs should organize conferences, trainings, and capacity building workshops to educate woodwork teachers on the benefits of e-learning methods generally for teaching among others.

**Keywords:** E-learning methods, self-efficacy, Woodwork trades, Technical colleges.

## Introduction

The integration of e-learning methods into education has transformed teaching and learning processes across various fields. E-learning reshapes the interaction between lecturers and students, demanding high levels of motivation and self-discipline from learners. It also provides new avenues for students' creative expression, offers significant potential for implementing innovative ideas and projects, and supports personal development as well as the principles of lifelong learning (Sandybayev, 2020). According to the American Society for Training and Development (ASTD), e-learning encompasses a wide range of applications and processes, including web-based learning, computer-based learning, virtual classrooms, and digital methods. Chetan (2016) describes e-learning as a blend of online learning and web-based resource instruction. E-learning courses are delivered online, outside the traditional classroom setting where teachers conduct in-person teaching. Shobowale *et al.* (2020) note that the benefits of e-learning include increased access to information, enhanced content delivery, personalized instruction, content standardization, accountability, on-demand access, self-paced learning, interactivity, confidence building, and greater convenience. E-learning platforms have been used as supplementary and auxiliary methods alongside traditional learning approaches during normal circumstances (Dai & Xia, 2020). However, during crises, they become the primary mode of learning. The COVID-19

pandemic that began in 2019 led to the closure of many schools and prompted countries to adopt e-learning platforms to ensure the continuity of education.

However, the adoption and success of e-learning methods are heavily influenced by the self-efficacy of educators, who play a critical role in the learning process and significantly impact their students' adaptation to e-learning. This article examines the self-efficacy of woodwork teachers in applying e-learning techniques for teaching woodwork trades in technical colleges in Niger State. Self-efficacy refers to an individual's belief in their capacity to perform tasks or succeed in specific situations. It is a key factor in the effective implementation of innovative teaching strategies.

Self-efficacy is a crucial factor in educational environments, affecting teachers' readiness to embrace new technologies and teaching methods. Bandura (2016) defines self-efficacy as individuals' beliefs in their ability to organize and execute actions to achieve specific goals. He emphasizes that the focus lies not on the skills one possesses but on the judgments of what one can accomplish with those skills. Research indicates that self-efficacy is a strong predictor of academic outcomes, independent of an individual's innate abilities (Bandura, 1997; Schaufeli & Bakker, 2010; Wiederkehr *et al.,* 2015). For woodwork teachers, self-efficacy in using e-learning methods is a key factor in successfully integrating digital tools into woodwork education in technical colleges in Niger State. Improving teachers' self-efficacy requires a comprehensive approach that includes training, access to technology, institutional support, and collaboration with peers. By addressing these factors and overcoming related challenges, technical colleges can leverage e-learning to enhance woodwork education and better equip students for the modern workforce.

The self-efficacy of woodwork teachers can be defined as their belief in their ability to adopt e-

learning technologies for teaching woodwork trades in technical colleges to achieve desired educational goals. Self-efficacy among woodwork teachers encompasses confidence in improving student achievement, engaging students in the classroom, providing meaningful assignments, and meeting learning objectives. Teachers with high self-efficacy are more likely to embrace e-learning, adapt to new teaching methods, and overcome challenges, while those with low self-efficacy may resist changes, hindering the integration of e-learning in their teaching practices, which can negatively impact the goals of teaching woodwork trades in technical colleges.

Technical colleges are organized learning settings created to equip students for self-reliance or to prepare them for work in recognized professions. Nigerian Technical Colleges seek to develop students' vocational skills, knowledge, attitudes, thought patterns, and character traits that enhance their intellectual in nature, social, physical, psychological, and economic capacities so they can become self-sufficient and support the economic development of their country (Okolie et al., 2019). The primary goal of these colleges is to provide an environment where students can acquire the knowledge and skills necessary for entering the workforce. In addition to trade areas like motor vehicle mechanics, blocklaying and concrete, computer craft studies, and woodworking trades, educational institutions and vocational training centers offer courses across various subjects like mathematical information, English, social studies, civic participation, basic science, and religious studies (FGN, 2014).

Woodwork trades programs provide individuals with comprehensive knowledge of wooden materials and the industrial production of wood items, aligning with the needs and expectations of the wood-based industry. These trades are essential for equipping students with practical skills and knowledge for occupational competence. Woodwork education is recognized as part of the

Technical and Vocational Education and Training (TVET) program, designed to train students in acquiring the technological skills and scientific knowledge required for successful employment (Aliyu, 2016). Woodwork trades in technical colleges involve the acquisition of cognitive and psychomotor skills in areas such as furniture making, cabinet making, upholstery construction, carpentry, wood machining, and general woodworking. Specializations in woodworking include upholstery, carpentry and joinery, wood machining, and furniture making (Federal Government of Nigeria FGN, 2014). Woodwork education provides students with the skills and competencies needed for various specializations in woodworking, enhancing their employability and ability to become self-employed and even create employment opportunities for others.

Traditionally, woodwork has been taught through hands-on activities and in-person instruction, but the rise of e-learning presents new opportunities to enhance the teaching and learning experience. In Niger State, technical colleges are increasingly exploring e-learning methods to complement traditional teaching, necessitating an examination of the self-efficacy of woodwork teachers in this evolving context.

Teachers are the architects of learning who shape students' experiences in woodwork trades. Gulo (2024) argues that while many stakeholders are involved in curriculum development, teachers have a unique role as the ones directly responsible for its implementation, placing a significant responsibility on them to not only understand the curriculum's complexities but also bring it to life in the classroom. Teachers' roles extend beyond mere information delivery; they are instrumental in shaping the educational experience and influencing students' comprehension and retention of knowledge. According to Glackin and Hohenstein (2018), a teacher's self-efficacy is a crucial indicator of teaching quality and needs to be enhanced to improve learning outcomes for students studying

woodwork trades. Therefore, this study investigates woodwork teachers' self-efficacy using e-learning in teaching woodwork trades in technical colleges in Niger State.

## Statement of the Problem

In technical education, e-learning integration has grown in significance, particularly in light of contemporary teaching methods. However, instructors' self-efficacy the conviction that they can successfully incorporate e-learning resources into their lessons is a critical component of this integration's success. According to Tran (2023), teachers who are self-efficacious are confident in their ability to satisfy learning objectives, increase student achievement, engage students in the classroom, and provide them meaningful assignments. Using e-learning poses even more difficulties in technical institutes, where practical and hands-on skills are essential.

The adoption of e-learning in teaching woodwork trades in technical colleges encounters several hurdles. Jokiaho *et al.* (2018) observed that teachers often do not fully utilize the potential of e-learning, instead limiting their use to uploading course outlines and basic educational resources for students to read. Challenges include insufficient training for teachers, limited access to technology, and a lack of confidence among woodwork teachers in their ability to effectively use e-learning tools. If woodwork teachers lack confidence in their ability to utilize e-learning, this could impede the successful adoption of these technologies, ultimately impacting the quality of education that students receive. Tran (2023) further pointed out that, in contrast to research on self-efficacy in conventional learning settings, a large portion of the study on self-efficacy in e-learning settings has been carried out in higher education. He recommended that further study be done on self-efficacy in e-learning environments.

The problem this study seeks to address is the extent to which woodwork teachers in Niger

State's technical colleges perceive themselves as capable of using e-learning in their teaching. Understanding these teachers' self-efficacy levels is essential for identifying the barriers to effective e-learning implementation and for developing strategies to enhance their confidence and skills in this area. This research work examines the self-efficacy of woodwork teachers using e-learning in their instructional practices and to explore the factors that influence their self-efficacy.

## Research Question

The following research questions were posed to address the self-efficacy of woodwork teachers on the use e-learning in teaching woodwork trades in technical colleges in Niger State.

1) What is the self-efficacy level of woodwork teachers in the utilisation of e-learning for teaching woodwork trades in technical colleges in Niger State?
2) To what extent do woodwork teachers in technical colleges in Niger State integrate e-learning methods into their teaching trades?
3) What are the challenges faced by woodwork teachers in technical colleges in Niger State in implementing e-learning methods for teaching woodwork trades, and how do these challenges impact their self-efficacy?

## Methodology

For this study, a survey research strategy is thought to be appropriate in order to collect data from the intended audience. Staff members and administrators in Niger State's technical colleges were asked to complete questionnaires in order to gather information. The study was carried out at each of Niger State's six technical institutes that provide woodworking trades, including as joinery, upholstery, machine woodworking, carpentry, and furniture building. All technical instructors and administrators working at government technical colleges in Niger State, Nigeria, are included in the

study's population. Government Technical College, Eyagi Bida, Government Technical College, Minna, and Sulaiman Barau Technical College, Suleja are all located in Zone A. The government Technical College, Kontagora, Mamman Kontangora Technical College, Pandogari, and Government Technical College, New Bussa are all located in Zone B. Thirteen executives (principals, vice principals, and heads of departments) and sixteen woodworking trade instructors from Niger State's government technical colleges make up the study's sample size of thirty-one participants. Since the complete population of pertinent persons was incorporated in the study, no form of sampling technique was used.

The Cronbach Alpa Formula was utilized to calculate the instrument's dependability coefficient. The instrument's dependability coefficient was determined to be 0.81. Three different kinds of questionnaires were employed; one of them, which included fifteen items, asked about the degree of self-efficacy of woodworking instructors in using e-learning to teach woodworking skills in Niger State's technical colleges.

Eleven items make up the second questionnaire, which focuses on how much e-learning is being used in Niger State's technical institutes to teach woodworking skills. Eleven items make up the third questionnaire, which asks about the difficulties woodwork instructors at Niger State's technical colleges encounter while attempting to teach woodworking skills using e-learning techniques and how these difficulties affect their sense of self-efficacy. The researchers used information gathered from the evaluation of related literature to create the closed-ended questionnaire. The resulting means score, as understood in relation to the idea of true upper and lower boundaries of numbers, as displayed in Table 1, served as the basis for decisions on the study topics. Teachers of woodworking trades and school administrators in Niger State's technical institutions were given structured questionnaires about their self-efficacy

in using e-learning techniques to teach woodworking skills during technical college courses. Every questionnaire that was distributed was returned, indicating a 100% return rate. The research questions served as the foundation for organizing and analyzing the data gathered for the study. The statistical software for social sciences (SPSS version 27) computer program was used to analyze the data acquired for this study using mean and standard deviation.

### Analysis of Result
**Table 1: Interpretation of Four Point Scale**

| S/N | Scale of R.Q 1 | Scale of R.Q 2 | Scale of R.Q 3 | Point |
|---|---|---|---|---|
| 1 | Highly Capable | Often | Strongly Agreed | 3.50 – 4.00 |
| 2 | Moderate Capable | Some times | Agreed | 2.50 – 3.49 |
| 3 | Capable | Rarely | Disagreed | 1.50 – 2.49 |
| 4 | Not Capable | Not At All | Strongly Disagreed | 0.00-1.49 |

**Table 2: Demographic Data of Respondents**

| S/N | Respondents | NO | % |
|---|---|---|---|
| 1 | School Administrators | 15 | 48.4 |
| 2 | Woodwork Teachers | 16 | 51.6 |
|  | Total | 31 | 100 |

**Research Question 1:** What is the self-efficacy level of woodwork teachers in the utilization of e-learning for teaching woodwork trades in technical colleges in Niger State?

**Table 3:** Mean responses of woodwork teachers and school administrators on the self-efficacy of woodwork teachers in the utilization of e-learning for teaching woodwork trades in technical colleges.

| S/N | Items | $\ddot{X}_1$ | SD1 | $\ddot{X}_2$ | SD2 | $\ddot{X}_A$ | SD$_A$ | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | Using the internet to find instructional resources | 2.75 | 1.00 | 2.40 | .91 | 2.58 | 0.96 | Moderately Capable |
| 2 | Confident achieving the same learning outcomes with e-learning as with traditional methods | 2.31 | .95 | 2.73 | .96 | 2.52 | 0.96 | Moderately Capable |
| 3 | I have the ability to assess student performance using e-learning tools | 2.69 | 1.54 | .27 | 1.34 | 2.48 | 1.44 | Capable |
| 4 | Preparing online quizzes and exams using e-learning tools | 1.31 | .48 | 1.67 | .82 | 1.49 | 0.65 | Not Capable |
| 5 | I have confidence in delivering my lesson online | 3.06 | 1.34 | 2.53 | 1.36 | 2.80 | 1.35 | Moderately Capable |
| 6 | Capable of integrating multimedia resources (videos, simulations, etc.) into e-learning lessons | 1.75 | .86 | 2.33 | 1.18 | 1.99 | 1.02 | Capable |
| 7 | confident in adapting traditional woodwork teaching materials for online learning | 2.56 | 1.10 | 2.80 | 1.15 | 2.68 | 1.13 | Moderately Capable |
| 8 | I feel capable of keeping up with new developments and tools in e-learning for woodwork education | 3.31 | 1.58 | 2.60 | 1.72 | 2.48 | 1.50 | Capable |
| 9 | Search the Internet to find the answer to a course-related question. | 2.50 | .97 | 3.00 | 1.20 | 2.75 | 1.09 | Moderately Capable |
| 10 | Communicate effectively with my students via e-mail (Gmail, yahoo mail, messenger) | 3.25 | 1.69 | 2.53 | 1.46 | 2.89 | 1.58 | Moderately Capable |
| 11 | Develop and follow a plan for completing all required work on time | 2.25 | 1.34 | 2.60 | 1.45 | 2.43 | 1.40 | Capable |
| 12 | confident in using e-learning tools to facilitate collaborative projects among students | 2.50 | 1.59 | 2.13 | 1.30 | 2.32 | 1.45 | Capable |

| S/N | Items | | | | | | | |
|-----|-------|------|------|------|------|------|------|------------|
| 13 | Use of digital tools for instructional programming design | 2.44 | 1.15 | 2.00 | .93 | 2.22 | 1.04 | Capable |
| 14 | I can successfully handle technical issues that arise during e-learning sessions | 1.31 | .48 | 1.60 | .83 | 1.45 | 0.66 | Not Capable |
| 15 | Capable of using e-learning methods in the face of unexpected challenges (e.g., technical failures, lack of student engagement) | 1.38 | .50 | 1.33 | .49 | 1.36 | 0.50 | Not Capable |

**Key:** $\ddot{X}_1$= teachers mean, $\ddot{X}_2$ = administrators mean, SD1 = teachers' standard deviation, SD2 = administrators' standard deviation, XA= mean average, and SDA= standard deviation average.

According to Table 3, participants agree with items 1, 2, 5, 7, and 10, and the items' mean values, which range from 2.89 to 2.52, indicate that they are fairly proficient. The respondents' agreement that each thing is possible was indicated by the mean values for items 3, 6, 8, 11, 12, and 13, which ranged from 2.48 to 1.99. On the other hand, items 4, 14, and 15 had mean responses ranging from 1.36 to 1.49, indicating that they are not capable. All respondents' standard deviations, however, are less than 1.95, suggesting that respondents' responses are not too dissimilar from one another.

**Research Question 2:** To what extent do woodwork teachers in technical colleges in Niger State integrate e-learning methods in teaching woodwork trades subjects?

**Table 4: Mean responses of woodwork teachers and school administrators on the extent e-learning methods is integrate in teaching woodwork trades in technical colleges.**

| S/N | Items | $\ddot{X}_1$ | SD1 | $\ddot{X}_2$ | SD2 | XA | SDA | Remark |
|-----|-------|------|------|------|------|------|------|--------|
| 1 | How often do you use e-learning methods in teaching woodwork trades | 2.88 | 1.54 | 3.47 | 1.37 | 3.18 | 1.46 | Sometimes |
| 2 | To what extent do you incorporate online videos or tutorials in your woodwork lessons | 2.75 | 1.48 | 3.27 | 1.22 | 3.01 | 1.35 | Sometimes |
| 3 | How frequently do you assign online assessments or quizzes as part of your teaching | 2.69 | 1.66 | 3.20 | 1.37 | 2.95 | 1.52 | Sometimes |
| 4 | To what extent do you integrate e-learning for teaching theoretical concepts in woodwork | 2.94 | 1.44 | 2.73 | 1.39 | 2.84 | 1.42 | Sometimes |
| 5 | How often do you utilize e-learning methods to facilitate student collaboration on woodwork projects | 1.38 | .50 | 1.60 | .83 | 1.49 | 0.67 | Rarely |
| 6 | How frequently do you use e-learning tools to provide feedback on students' work | 1.19 | .40 | 1.73 | 1.03 | 1.46 | 0.72 | Rarely |
| 7 | To what extent do you utilize e-learning to manage and organize course materials for your woodwork classes | 2.50 | 1.55 | 3.07 | 1.49 | 2.79 | 1.52 | Sometimes |
| 8 | How often do you use e-learning methods to track student progress in your woodwork courses | 1.31 | .48 | 1.53 | .64 | 1.42 | 0.56 | Rarely |
| 9 | To what extent do you find e-learning methods helpful in teaching practical woodwork skills | 3.25 | 1.53 | 3.13 | 1.51 | 3.19 | 1.52 | Sometimes |
| 10 | The integration of e-learning methods in teaching woodwork trade is significantly important | 3.31 | 1.54 | 3.00 | 1.46 | 3.16 | 1.50 | Sometimes |

| S/N | Items | Ẍ₁ | SD1 | Ẍ₂ | SD2 | XA | SDA | Remark |
|---|---|---|---|---|---|---|---|---|
| 11 | Different e-learning platforms or tools (Zoom, Google Meet, Google Classroom, podcast, Moodle, etc.) are use in teaching woodwork trades. | 1.38 | .50 | 1.53 | .64 | 1.46 | 0.57 | Rarely |

Key. Ẍ1= teachers mean, Ẍ2 = administrators mean, SD1 = teachers' standard deviation, SD2 = administrators' standard deviation, XA= mean average, and SDA= standard deviation average.

The degree to which instructors of woodworking trades have used e-learning techniques into their instruction is displayed in Table 4. With mean scores ranging from 3.19 to 2.79, those who responded accepted with items 1, 2, 3, 4, 7, 9, and 10, indicating that instructors of woodworking trades have incorporated e-learning into their instruction. The people who took part agreed that the substances are rarely utilized in teaching woodworking trades, as indicated by the mean values of 1.49 to 1.42 for items 5, 6, 8, and 11. All respondents' standard deviations, however, are less than 1.95, suggesting that respondents' responses are not too dissimilar from one another.

**Research Question 3:** What are the challenges faced by woodwork trade teachers in technical colleges in implementing e-learning methods for teaching woodwork trades, and how do these challenges impact their self-efficacy?

| S/N | Items | Ẍ₁ | SD1 | Ẍ₂ | SD2 | XA | SDA | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | Teachers receive formal training in e-learning methods for teaching | 2.50 | 1.32 | 1.93 | 1.03 | 2.22 | 1.78 | Disagreed |
| 2 | Availability of technological resources (computers, internet access, etc.) for implementing e-learning in your school | 2.94 | 1.39 | 3.40 | 1.50 | 3.17 | 1.45 | Agreed |
| 3 | I face challenges related to inadequate internet connectivity while trying to implement e-learning methods | 2.06 | .93 | 1.60 | .63 | 1.83 | 0.78 | Disagreed |
| 4 | There is adequate technical support available for e-learning implementation | 2.19 | 1.28 | 1.73 | .96 | 1.96 | 1.12 | Disagreed |
| 5 | I encounter difficulties in engaging students during online woodwork lessons? | 2.56 | 1.37 | 2.93 | 1.44 | 2.75 | 1.41 | Agreed |
| 6 | Lack of appropriate e-learning tools (e.g., software, platforms) hinder your teaching effectiveness | 3.50 | 1.37 | 3.67 | 1.23 | 3.59 | 1.30 | Agreed |
| 7 | lack of training in e-learning hinders the ability to teach woodwork trades online | 3.19 | 1.52 | 3.53 | 1.30 | 3.36 | 1.41 | Agreed |
| 8 | There is challenges in managing and assessing practical woodwork activities through e-learning platforms | 2.56 | 1.55 | 3.40 | 1.45 | 2.98 | 1.50 | Agreed |
| 9 | I have confident using e-learning methods for effectively teaching of woodwork trades | 2.69 | 1.58 | 3.13 | 1.41 | 2.91 | 1.50 | Agreed |
| 10 | I preferred e-learning compared to traditional teaching methods | 3.06 | 1.39 | 3.67 | 1.29 | 3.37 | 1.34 | Agreed |
| 11 | Challenges encountered affect your motivation using e-learning methods in teaching woodwork trades | 3.44 | 1.50 | 3.13 | 1.25 | 3.29 | 1.38 | Agreed |

**Table 5:** Mean responses of woodwork teachers and school administrators on the extent e-learning methods is integrate in teaching woodwork trades in technical colleges.

Key. Ẍ1= teachers mean, Ẍ2 = administrators mean, SD1 = teachers' standard deviation, SD2 = administrators' standard deviation, XA= mean average, and SDA= standard deviation average.

Table 5 revealed that respondents agreed with the items 2, 5, 6, 7, 8, 9, 10, and 11 with mean response ranges between 3.59 – 2.75 on the challenges faced by woodwork trade teachers in technical colleges in implementing e-learning methods for teaching woodwork trades, and how these challenges impact their self-efficacy while items in 1, 2, and 4 with mean response between 2.22- 1.83 signified that the respondents agree with the challenges faced in the use of e-learning methods affects their self- efficacy.

### Discussion of the Findings

The analysis of the self-efficacy of woodwork teachers in utilizing e-learning for teaching woodwork trades in technical colleges is presented in Table 3. The results indicate that woodwork teachers are capable and confident in using e-learning methods for teaching. This result is consistent with Tran's (2023) assertion that the effectiveness of school reforms depends on the development of teacher self-efficacy. A person's cognitive evaluation of their capacity to accomplish particular objectives and effectively finish given activities is known as self-efficacy. The results of the study also corroborate those of Li et al. (2022), who pointed out that teachers who have a high sense of confidence in oneself are more likely to approach problems with zeal and commitment, which improves teaching strategies, raises student engagement, and improves academic performance. This suggests that confidence in their abilities enables woodwork trade teachers to choose more challenging tasks and commit more time and effort to achieving teaching and learning objectives.

The extent to which woodwork teachers in technical colleges integrate e-learning methods in teaching woodwork trades is shown in Table 4. The results demonstrate that e-learning methods have been integrated into teaching woodwork trades to some extent and have proven to have a strong positive impact on teaching effectiveness. This finding is consistent with Sandybayev (2020), who explained that the integration of e-learning transforms teachers into consultants and tutors, guiding students to build individual learning trajectories and facilitating knowledge acquisition. Students thereby become active contributors to the creation and acquisition of new information rather than passive consumers of instructional content. Similarly, Bismala *et al.* (2022) stated that interaction is a vital characteristic of the educational process, involving personal exchanges between teachers and students and evolving from subject integration activities, including objectives, motivations, and learning process aspects. The integration of e-learning in teaching woodwork is crucial because it encourages students to adapt to technological tools and fosters learning independence (Bismala *et al.*, 2022).

Teachers' and administrators' answers about the difficulties woodworking trade teachers encounter when putting e-learning techniques into practice and how these difficulties affect their self-efficacy are shown in Table 5. The results show that teachers of woodworking trades have major hurdles when integrating e-learning, which negatively impacts their self-efficacy and makes it more difficult to accomplish goals. This underscores the necessity of resolving these issues to guarantee successful integration. Teachers who have received training in creating online lessons are better at presenting content within the allotted lesson time, claim Horvitz et al. (2014). Similarly, Hampton *et al*. (2020) suggested that possessing the necessary skills to design online instruction enhances teachers' abilities to create effective learning activities and increases student engagement. Glackin and Hohenstein (2018) also noted that a teacher's self-efficacy is a key indicator of teaching quality and should be strengthened to ensure better learning outcomes for students pursuing woodwork trades.

## Conclusion

The self-efficacy of woodwork teachers in utilizing e-learning methods plays a pivotal role in the successful integration of digital tools in woodwork education within technical colleges. To enhance teachers' self-efficacy, a comprehensive approach is necessary, involving targeted training, improved access to technology, robust institutional support, and opportunities for peer collaboration. By addressing these elements and overcoming related challenges, technical colleges can fully leverage the potential of e-learning to enhance woodwork education, ultimately equipping students with the skills needed to thrive in the modern workforce.

## Recommendations

The following suggestions are required to improve technical college instructors' self-efficacy for the right application of e-learning in teaching woodworking trades, based on the above revelation from the study's findings.

1) By highlighting the advantages and efficacy of these digital resources in augmenting woodworking education, woodworking trade instructors ought to be strongly urged to include e-learning techniques into their teaching procedures.

2) To inform woodworking instructors about the benefits of e-learning techniques and provide them with the skills they need to use these resources into their lessons, the government and non-governmental organizations should host conferences, instruction sessions, and capacity-building workshops.

3) To increase their self-efficacy, teachers should receive training on how to teach using e-learning techniques.

4) To keep teachers abreast of the most recent e-learning tactics and technologies, the Ministry of Education should support, encourage, and oversee technical staff upskilling and reskilling programs.

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