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Innovation Technology and Pedagogy in English Language Classroom: Opportunities and Challenges in Vocational Education

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Abstract

As vocational English emphasizes authentic workplace communication and digital literacy, this study examined integration of innovation technology and pedagogy in a vocational school. It investigated how vocational English teachers used technology innovation in the classroom, the opportunities it offered to help students become more proficient in the language, and the challenges encountered when putting it into practice. Fifteen English teachers of SMKN 2 Palembang, Indonesia, became the participants. A descriptive qualitative method was used as interviews, observations in the classroom, and documentation were conducted to gather data. The results of thematic analysis demonstrated how they incorporated interactive learning platforms, internet applications, and multimedia presentations into their lesson plans. Furthermore, it facilitated real-world, student-centered learning opportunities related to professional communication requirements and vocational contexts. There were still a number of issues, such as inadequate technology resources, inadequate training for teachers, erratic internet access, and disparities in students' digital competence. This study contributes to vocational English education by showing how innovative technology and pedagogy improve students' communication skills, learning engagement, and workplace preparedness while addressing the implementation challenges.

1. Introduction

Vocational education has been greatly impacted by the quick development of digital technology, especially in terms of educating students for the demands of Industry 4.0 and Society 5.0. Vocational schools are increasingly expected to improve students' digital literacy, communication skills, and workplace preparedness for global companies in addition to their technical expertise (Pambudi & Kaliaskarova, 2023).

As a result, traditional teacher-centered instruction in vocational education has given way to more adaptable, student-centered, technology-supported learning settings that promote genuine collaboration and professional involvement (Rahmiani & Marwandi, 2022). Constructivist learning theory, which emphasizes active learning, teamwork, and knowledge production through meaningful experiences, is reflected in this change.

Furthermore, the technical Pedagogical Content Knowledge (TPACK) framework emphasizes how crucial it is for teachers to successfully combine subject matter, pedagogical techniques, and technical expertise in vocational English classrooms. As a result, it is now more crucial than ever to assist vocational students' employability and communication skills through the combination of cutting-edge technology and pedagogy.

Because digital technologies can produce dynamic, adaptable, and engaging learning experiences, digital learning practices have grown in significance in vocational education. Digital technology integration has been shown to have a favorable impact on students' motivation, engagement, participation, and English language competency (Rintaningrum, 2023). Teachers can create dynamic learning environments that foster authentic and collaborative communication practices by utilizing a variety of digital learning platforms, such as podcasts, learning management systems, mobile applications, multimedia presentations, virtual classrooms, and AI-based tools (Dewantara et al., 2024).

In addition, these technologies give vocational students possibilities to access real-world resources and practice workplace communication pertinent to professional contexts (Utami & Samsudin, 2025). Additionally, using digital technology fosters learner autonomy, critical thinking, creativity, and communication skills—all of which are crucial for vocational students in today's industries (Sahayu et al., 2026).

According to the Technology Acceptance Model (TAM), users' opinions of educational technology's utility and usability have an impact on its effective adoption, which in turn influences teachers' and students' willingness to interact with digital learning environments. Additionally, Sociocultural Theory emphasizes the value of social engagement, interaction, and teamwork in language learning—all of which are made possible by digital communication platforms and cooperative online activities.

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Innovative pedagogy has emerged as a key element of vocational English training along with technology innovation. To provide meaningful and contextualized learning experiences, educators are urged to use strategies like project-based learning, blended learning, task-based learning, and differentiated instruction. These methods actively involve students in communication exercises related to workplace and industry settings (Yi, 2024). English training in vocational school should be in line with the communication requirements of the workplace, such as professional collaboration, customer service interactions, presentations, and corporate communication (Lin & Huang, 2023).

Additionally, students can practice real-world communication scenarios while simultaneously enhancing their English proficiency and professional competencies using interactive digital platforms and online simulations (Hafidh et al., 2026). Through chatbot interaction, automated feedback, adaptive learning systems, and speech recognition capabilities that enhance students' speaking, listening, and writing abilities, the increasing integration of artificial intelligence has also reinforced technology-assisted instruction (Septiani et al., 2025). Additionally, teachers can monitor student progress and create more dynamic exercises with the aid of AI-assisted platforms (Dewantara et al., 2024).

Similar to this, vocational students can learn English according to their occupational and workplace communication demands through English for Specific Purposes (ESP) instruction backed by digital technology (Mustaqimah et al., 2025). These advancements show how cutting-edge digital pedagogy can close the gap between professional communication practices and classroom instruction. However, if technology is not handled properly, an over-reliance on digital technology may diminish direct interpersonal engagement and possibly impair students' capacity for autonomous problem-solving. Students and teachers may experience digital weariness, diminished focus, and decreased enthusiasm to study because of prolonged screen time and ongoing online learning activities.

The adoption of digital learning practices in vocational education still faces several obstacles, despite the benefits presented by cutting-edge technology and pedagogy. Previous research shows that insufficient technology infrastructure, erratic internet access, poor teacher preparation, and disparities in digital literacy between educators and learners continue to be major obstacles to effective technology integration (Lessy & Umarella, 2024).

In order to effectively support engaging English learning activities, teachers also have challenges in choosing appropriate digital technologies and modifying pedagogical practices (Li, 2024). The use of technology-assisted instruction in vocational schools is further hampered by institutional constraints and a lack of technical assistance (Marzuki et al., 2026).

Furthermore, despite the availability of digital tools, some teachers still use traditional teaching methods, which limits the potential for student-centered and participatory learning experiences (Puspandari, 2023). Learning gaps can also result from unequal digital access among students, especially for children in rural

or economically disadvantaged areas who have poor digital devices or restricted internet connection.

Furthermore, ethical challenges surrounding AI-assisted learning—such as data privacy, academic integrity, algorithmic prejudice, and students' excessive dependence on automated feedback—have grown in importance in digital learning practices. These difficulties show that integrating technology into vocational English classes calls for not only digital resources but also institutional support, pedagogical adaptation, and ethical consciousness.

While a lot of research has been done on the use of technology in English language instruction, most of it focuses more on higher education or general secondary education settings than on vocational education. Instead of thoroughly analysing both aspects at once in vocational English classrooms, prior research frequently addresses either the advantages or the difficulties of technology integration separately (Rintaningrum, 2023; Utami & Samsudin, 2025). Additionally, a lot of research focuses on the technical uses of digital tools without examining how cutting-edge pedagogy and technology work together to enhance real-world workplace-oriented English learning (Nuryanti, 2025).

Additionally, how vocational English teachers modify their pedagogical approaches to successfully incorporate cutting-edge technology into classroom education has received little consideration (Puspandari, 2023). The pedagogical ramifications of AI-assisted English learning, such as ethical issues, digital well-being, and teachers' preparedness to oversee technology-supported instruction, are also rarely studied. As a result, there is still a large research vacuum concerning the thorough investigation of cutting-edge technology and pedagogy in vocational English teaching, especially with regard to opportunities and implementation issues.

This study is innovative since it simultaneously examines educational techniques, technology practices, opportunities, and obstacles in vocational English classrooms. This research particularly highlights vocational education environments where English learning is intimately linked to workplace communication and professional competencies, in contrast to earlier studies that mostly focus on broad technology integration.

While taking into account the pedagogical, social, and ethical aspects of technology integration, this study also examines how educators integrate digital technology with student-centered pedagogy to produce authentic and meaningful learning experiences pertinent to vocational students' future jobs.

This study suggests three research objectives based on the identified research gap. The study's primary objective is to find out how vocational English teachers incorporate cutting-edge pedagogy and technology into their lessons. Second, it looks for ways that cutting-edge pedagogy and technology might enhance students' English learning experiences, motivation, and communication

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abilities. Third, the study looks at the difficulties vocational English teachers encounter when putting technology-assisted instruction into practice.

It is anticipated that this research will make theoretical and practical contributions. By incorporating viewpoints from Constructivist Learning Theory, Sociocultural Theory, the TPACK framework, and the Technology Acceptance Model (TAM), it theoretically deepens our understanding of cutting-edge digital pedagogy in vocational English education. Practically speaking, it is anticipated that the results will offer suggestions to educators, educational establishments, and legislators on the creation of successful technology-assisted English learning environments for vocational students.

Additionally, while encouraging responsible and ethical use of educational technology, the study may help vocational learners enhance their digital literacy, communicative competence, and professional communication skills to meet the demands of digital transformation and global workplace communication.

2. Method

This study used a qualitative descriptive research methodology to investigate the potential and challenges of incorporating innovative technology and pedagogy into English language training in vocational education settings. Because it enables researchers to thoroughly examine participants' experiences, perspectives, instructional practices, and attitudes toward technology-supported English learning, a qualitative technique was chosen (Delcker & Ifenthaler, 2022; Liao et al., 2022).

This method is thought to be suitable for examining educational phenomena in real-world classroom settings and comprehending how teachers interpret and apply digital learning strategies in vocational education (Jiang, 2024). The study's main focus was on teachers' opinions about how digital technology is incorporated into vocational English training, how technology enhances professional and communicative language skills, and the difficulties that arise during implementation.

The study was conducted at SMKN 2 Palembang. The school was selected because it actively uses digital learning techniques and technology-assisted instruction in English language classrooms. Because the school is a vocational institution that prioritizes professional competence and digital adaption, it provides a relevant framework for researching novel technology and pedagogy in vocational English education. Previous studies have shown that vocational education institutions require technology-supported language learning environments to equip students for global competitiveness and workplace communication (Wildeman et al., 2022; Rosmayanti, 2025).

The survey included fifteen English teachers from the school's several vocational study programs. Purposeful sampling was employed to choose the participants because they had first-hand experience integrating technology into English language training. Purposeful sampling is often used in qualitative educational research to identify individuals with a wealth of information who are actively involved in the phenomenon being studied (Delcker & Ifenthaler, 2022).

The chosen participants came from a variety of teaching backgrounds, including vocational programs in business, engineering, hospitality, and computer technology. Additionally, they differed in the amount of time they had spent teaching; they ranged from inexperienced educators with less than five years of experience to experienced educators with over fifteen years. Additionally, the participants showed varying degrees of technological competence, ranging from simple presentation software use to sophisticated online learning platforms, AI-assisted apps, and interactive multimedia tools.

The selected teachers actively engaged in classroom instruction using digital platforms, online learning resources, interactive media, and technology-supported communication activities. It was anticipated that their diverse backgrounds and teaching philosophies would offer thorough insights into the use of technology in vocational English instruction.

Data collection methods included semi-structured interviews, classroom observations, questionnaires, and document analysis. By using a variety of tools, the researcher was able to gather thorough information and employ data triangulation to increase the validity of the results (Liu, 2022; Wildeman et al., 2022). The practical application of technology-assisted instruction during English learning activities was the main focus of classroom observations. Teachers' use of digital tools, online learning environments, multimedia materials, presentation software, and cooperative learning activities was observed by the researcher.

The incorporation of digital literacy abilities into occupational English training, student involvement, classroom interaction, and communication techniques received special emphasis. To record instructional techniques and classroom dynamics pertaining to technology integration, observation notes were methodically recorded. The importance of classroom observation in exposing real teaching methods and student engagement in digital learning environments has been highlighted in earlier research (Rahmiani & Marwandi, 2022; Astuti et al., 2022).

The 15 English teachers participated in semi-structured interviews to gain a greater understanding of their viewpoints, experiences, and difficulties with integrating technology into vocational English training. Technology proficiency, teaching methods, student involvement, institutional support, perceived advantages of digital learning, and implementation challenges were all discussed in the interviews. Participants were able to expound on their answers thanks to the semi-structured approach, which also allowed the researcher to stay in line with the study's goals. To guarantee data accuracy, each interview was done one-on-one and audio recorded with participants' permission. Semi-structured interviews are useful for examining teachers' pedagogical adaptability and experiences in technology-supported language learning situations, according to prior research (Jiang, 2024; Prasetyo et al., 2022).

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In order to corroborate the results of the observations and interviews, questionnaires were also given out. The tool was created based on earlier research on innovative pedagogy, teacher preparedness, digital learning, and technology integration in language instruction. Both closed-ended and open-ended questions about teachers' opinions of digital learning strategies, technological proficiency, student involvement, institutional support, and implementation difficulties were included.

For the closed-ended questions, a five-point Likert scale from strongly disagree to strongly agree was used. To guarantee content validity and clarity, the questionnaire was examined by educational technology specialists and English education professors before distribution. To assess the questionnaire items' readability, consistency, and relevance, a pilot test with English teachers who were not research participants was also carried out.

To supplement the information gathered via surveys, observations, and interviews, document analysis was used. Lesson plans, instructional modules, online assignments, classroom presentations, digital learning resources, and curriculum-related documents were among the items that were examined. In order to determine how cutting-edge pedagogy and technological integration were integrated into vocational English training; these publications were analyzed. The convergence of instructional objectives, the development of communicative skills, workplace-oriented English learning, and the improvement of digital literacy was further revealed by document analysis. Prior research on instructional innovation and the use of digital learning in vocational education has employed similar methods (Haristiani et al., 2022; Liu, 2022).

Thematic analysis was used to examine the gathered data in a number of methodical steps. Initially, observation notes, questionnaire answers, and documents were arranged methodically, and interview recordings were verbatim transcribed. Second, recurrent concepts, themes, and patterns pertaining to opportunities and difficulties in technology-supported vocational English teaching were found through open coding. Third, more general topic categories such as communicative competence, student engagement, digital literacy, teacher preparedness, pedagogical constraints, and technological accessibility were formed from similar codes. Intercoder checking was carried out with another educational researcher who separately examined a subset of transcripts and coding categories in order to preserve coding reliability and analytical consistency.

Until a consensus was reached, all discrepancies in interpretation were discussed. Additionally, software for qualitative data analysis was used to systematically manage, arrange, and classify the coding process. To lessen subjectivity, coding rules and thematic concepts were also developed prior to analysis. Lastly, the themes that were found were thoroughly analyzed in light of the goals of the study, pertinent theories, and earlier research.

Because it makes it easier to systematically interpret complex learning experiences and instructional methods, thematic analysis is frequently used in educational research (Liao et al., 2022; Delcker & Ifenthaler, 2022).

The study included a number of validation techniques, such as participant verification, data triangulation, and peer debriefing, to guarantee reliability. To verify consistency across data sources, information gathered via observations, questionnaires, interviews, and documents was compared. In order to verify correctness, participants were also asked to examine a few chosen interview transcripts and interpretations.

To reduce researcher bias during analysis, peer conversations with experts and educational researchers were also held. Because they increase the reliability and trustworthiness of the results, these methods are advised in qualitative educational research incorporating digital learning environments (Wildeman et al., 2022).

The investigation was conducted with ethical considerations in mind. Prior to data collection, all participants were informed about the study's goals, methods, and participant rights. Every subject gave their informed consent, and all research papers and publications preserved participant confidentiality. Additionally, participants were told that participation in the study was completely optional and that they could leave at any time without facing any repercussions.

3. Result

Teachers' Views of Innovative Technology Use in Vocational English Education

Because digital technologies enhanced classroom engagement, instructional effectiveness, flexibility, and student-centered learning, the majority of English teachers at SMKN 2 Palembang had favorable opinions about innovative technology in vocational English instruction. Teachers felt that using technology to support education allowed them to effectively manage classroom activities, provide real-world workplace-related information, and boost student engagement and motivation. Learning activities incorporated a variety of tools, such as Google Classroom, Canva, YouTube, Quizizz, and WhatsApp groups.

Teachers considered certain platforms more effective because they provided specific benefits for language learning. For example, YouTube improved listening and pronunciation through authentic communication videos, Quizizz increased motivation through gamified learning, and Canva supported creativity and presentation skills. Classroom observations also revealed that online simulations, multimedia resources, and collaborative projects created more interactive learning environments, and vocational students responded positively because they were already familiar with digital communication and technology in their daily lives.

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Table 1. The Result of the Questionnaire

No	Indicator	Item	Frequency (n=15)	Percentage
1	Importance of innovative technology in vocational English instruction	The usage of technology has altered teaching methods	14	93.3%
2	Positive perception toward technology integration	I use technology to improve my methods of instruction	13	86.7%
3	Technology improves instructional effectiveness	Students' academic performance has increased as a result of using technology	12	80.0%
4	Technology supports student-centered learning	Students' involvement in class activities has increased as a result of technological use	13	86.7%
5	Use of communication platforms in classroom instruction	I use LMS in teaching	15	100%
6	Use of multimedia and video-based learning platforms	I depend upon computer/internet in my teaching	13	86.7%
7	Use of online quizzes and digital assessments	I evaluate students' homework and tests using a computer and the internet	11	73.3%
8	Use of technology for accessing online learning resources	I access internet resources by using technology	14	93.3%
9	Technology creates engaging learning environments	Students' involvement in class activities has increased as a result of	13	86.7%

		technological use.		
10	Students are more motivated during digital learning activities	I permit students to use their smartphones and other devices to access the internet	14	93.3%
11	Technology integration supports vocational-context learning	I make use of technology tools that are appropriate for the subjects I teach	12	80.0%
12	Authentic workplace communication practice through technology	The technology used should be compatible with the current instructional methodology	11	73.3%
13	Integration of communicative and collaborative learning	I use technology to improve my methods of instruction	13	86.7%
14	Development of critical thinking and digital literacy	I replace conventional paper-based tasks with technology	12	80.0%
15	Teachers act as facilitators in digital learning environments	Teachers should use technology in conjunction with instructional techniques in a balanced manner	13	86.7%

The frequency and percentage of teachers' answers about the use of cutting-edge technology in vocational English instruction at SMKN 2 Palembang are displayed in the table. The 15 participating teachers' degree of agreement and favorable opinion of each indication is shown by the percentage figures. Since all indicators received percentages above 70%, the results generally show a high degree of acceptance and implementation of technology-assisted training. A "very high" level of agreement or execution is indicated by percentages between 81% and 100%, although percentages between 61% and 80% can be classified as "high" according to the scale interpretation.

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Teachers were clearly aware of the value and advantages of digital technology in vocational English learning, as evidenced by indicators like the use of LMS in instruction (100%), the significance of technology in altering teaching methods (93.3%), access to online learning resources (93.3%), and students' motivation during digital learning activities (93.3%). Similarly, very high percentages ranging from 86.7% to 93.3% were obtained for indicators pertaining to technology integration, student-centered learning, engaging learning environments, multimedia usage, collaborative learning, and teachers' roles as facilitators, indicating strong positive perceptions toward innovative digital pedagogy.

In the meantime, indicators like technology enhancing students' academic performance (80.0%), assisting with vocational-context learning (80.0%), fostering digital literacy and critical thinking (80.0%), online tests and digital assessment (73.3%), and using technology for real-world workplace communication (73.3%) were all classified as "high." These results imply that while teachers' perceptions of technology were generally favorable, several parts of its application—specifically, workplace-oriented communication activities and evaluation procedures—were not used as frequently as other digital learning strategies.

The results of the interviews also showed that teachers thought technology integration made it easier for them to modify course materials for use in professional settings. Workplace communication scenarios, including employment interviews, customer service communications, corporate presentations, hospitality interactions, and technical instructions, were frequently linked to English-language publications. Innovative teaching, according to teachers, allowed students to practice real-world language use that would be useful in the workplace.

> *"Because it makes learning more interesting and applicable to students' future employment, technology is crucial in vocational English training. I teach real-world language skills and corporate communication using Google Classroom, YouTube, and Canva." [P4]*

Moreover, document analysis revealed that the majority of lesson plans included communicative language teaching methods, collaborative learning techniques, and technology-based activities. Digital learning materials were aligned with curriculum objectives, emphasizing communicative competence, critical thinking, and digital literacy development. These results imply that innovation technology was seen as a pedagogical approach that supported vocationally focused English instruction in addition to being a teaching instrument.

In vocational education settings, technology-enhanced pedagogy fosters student-centered learning, instructional flexibility, and authentic communication behaviors. In order to encourage more active student participation and independent learning, teachers stressed that digital learning environments enabled them to become facilitators rather than just information producers.

Technology-Enhanced Pedagogy as the Opportunities to Support Communicative and Professional Language Skills

The second research objective looked at how students' communicative competence and professional communication abilities were supported by technology-enhanced instruction as the opportunities. The results showed that innovation technology greatly enhanced students' digital literacy, workplace-related language proficiency, and English communication skills.

Students were regularly engaged in cooperative learning activities that required problem-solving, communication, and engagement, according to observations made in the classroom. To help them improve their speaking, listening, reading, and writing abilities, teachers used role-playing games, online forums, video presentations, and project-based learning. Students showed increased confidence when interacting through technology-supported activities and actively participated in online discussions.

> *"Through online discussions, role-plays, presentations, and group projects, technology-enhanced learning helps students develop their professional and English communication skills, increasing their self-assurance, engagement, and independence." [P11]*

Teachers thought technology-assisted learning gave students more chances to practice English in real-world situations, according to interview data. According to a number of educators, students' confidence in speaking English increased when they used interactive applications, virtual discussions, and multimedia presentations. Technology also enabled students to access authentic English materials from global sources, including videos, podcasts, online articles, and professional workplace content.

Additionally, teachers noted that through joint assignments and digital projects, vocational students acquired critical professional communication skills. Students gained knowledge on how to do presentations, compose business emails, put together digital portfolios, and have discussions about work-related topics. Through these exercises, students were able to make the connection between learning English and the vocational skills needed for future employment.

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> *"With the use of technology, students have more chances to practice their English and build their presentation, business email, confidence, and professional communication skills for future jobs." [P7]*

Also, the results showed that integrating technology improved students' digital literacy. Teachers observed that students became more capable of searching for information, evaluating digital content, communicating online responsibly, and utilizing educational applications effectively. Digital literacy was regarded as a crucial element of professional competence because vocational education places a strong emphasis on being prepared for the workplace.

The integration of technology-enhanced activities into instructional preparation was further validated by document analysis. In order to enhance communicative competence and professional communication skills, several lesson plans featured project-based learning, blended learning, group projects, and multimedia presentations.

The results show that creative teaching methods improved students' readiness for digital work environments in addition to language learning. Overall, the results show that technology-enhanced pedagogy benefited vocational students' communicative competence, learner autonomy, digital literacy, and workplace-oriented English abilities through relevant learning experiences.

> *"Through group projects, multimedia presentations, and project-based learning, technology-enhanced learning enhances students' digital literacy, English communication skills, and preparedness for the workforce." [P1]*

Challenges in the Implementation of Technology-Assisted English Learning

While the results revealed numerous chances for creative technology integration, a number of implementation-related issues were also noted. Technology infrastructure, teacher preparedness, student learning variety, and classroom management were the key challenges. Limited internet connectivity and inadequate technological facilities were among the most commonly reported issues.

Unreliable internet access occasionally interfered with class activity, especially during online learning sessions or multimedia-based instruction, according to a number of professors. The efficacy of technology-enhanced learning activities was also limited in some classes due to a lack of sufficient technology equipment, such as projectors, speakers, or computers.

> *"Major obstacles to technology-assisted English instruction include poor classroom infrastructure and limited internet connectivity, which frequently interfere with multimedia-based learning activities." [P4]*

Differences in teachers' technological proficiency presented another difficulty. While the majority of participants showed positive attitudes toward digital learning, some teachers acknowledged that they had trouble creating interactive digital materials and using specific educational software. To successfully incorporate innovation pedagogy into classroom instruction, teachers with little familiarity with technology needed extra training and institutional support. Student-related challenges were also identified during classroom observations and interviews.

It is challenging to integrate technology-based activities consistently since students have varying degrees of digital literacy and English ability, according to teachers. While some students needed more direction and supervision, others adjusted to digital learning settings more rapidly. In a number of instances, non-educational internet diversions occasionally diverted students from classroom instruction.

> *"Technology-assisted English learning is hampered by differences in teachers' and students' digital ability because some still require assistance and training when engaging in digital activities." [P10]*

Participants also expressed worries about workload and time management. Teachers explained that preparing digital materials, managing online assignments, and monitoring students' progress required more preparation time compared to conventional teaching methods. Teachers felt that ongoing institutional support and professional development programs were essential to maintaining successful technology integration, even while they acknowledged the advantages of innovation technology.

Further, document analysis revealed that even though lesson plans included technology-enhanced activities, time and technical constraints prevented some instructional objectives from being fully met. These findings demonstrate that the successful incorporation of innovative technology in vocational English courses requires institutional infrastructure, professional development, and sustainable educational strategies in addition to teacher motivation.

> *"Teachers require ongoing training, institutional support, and sufficient facilities because creating digital learning materials and maintaining online assignments takes more time and effort." [P14]*

In summary, the findings demonstrate that innovative technology and pedagogy provide significant opportunities for enhancing vocational English instruction, particularly in improving communicative competence, digital literacy, and workplace-related language skills. To optimize the efficacy of technology-

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enhanced vocational English teaching, a number of implementation issues pertaining to infrastructure, technological preparedness, and classroom management still need to be resolved.

4. Discussion

Teachers' Views of Innovative Technology Use in Vocational English Education

The study's findings demonstrate how innovative pedagogy and technology have improved the interactive, communicative, and workplace-focused nature of vocational English training at SMKN 2 Palembang. Because digital platforms, multimedia materials, and interactive applications improved student-centered learning, instructional flexibility, and classroom involvement, teachers had a positive perception of innovative technology.

Technology was also thought to be crucial for facilitating real-world communication and English practice in the workplace. These results corroborate other research demonstrating that technology integration enhances collaborative learning practices, instructional inventiveness, and student engagement (Rahmiani & Marwandi, 2022; Utami & Samsudin, 2026; Han, 2026; Nuryanti, 2025).

The TPACK framework, which stresses the integration of pedagogical, technological, and subject knowledge in education, might also be used to explain the results. Teachers showed that they could integrate digital resources and interactive techniques appropriate for vocational learning with English education. Because students actively improved their knowledge through collaborative activities, online conversations, and multimedia projects, the results also support constructivist learning theory. Additionally, the utilization of communication platforms and group learning exercises that promoted student collaboration and engagement are examples of how sociocultural theory is portrayed.

Additionally, because students were already accustomed to technology and digital communication, teachers felt that digital learning strategies were applicable to vocational education. Students were able to practice real-world business communication, including presentations and professional discussions, through interactive tools such as online simulations, films, and digital presentations. Digital literacy theory, which emphasizes the significance of utilizing digital tools to efficiently access, create, and convey information, is connected to this study. As a result, technology integration enhanced students' digital literacy and professional communication abilities in addition to their English ability.

Technology-Enhanced Pedagogy as the Opportunities to Support Communicative and Professional Language Skills

It has also been discovered that incorporating digital technology into vocational English instruction promotes real-world and contextualized learning opportunities. Teachers linked workplace communication scenarios, such as customer service, employment interviews, presentations, and technical communication, with English language training. The idea of English for Specific

Purposes (ESP), which stresses contextualized language acquisition pertinent to professional settings, is consistent with this conclusion (Rosmayanti, 2025; Nuryanti, 2025).

According to earlier research, in order to prepare students for the demands of Industry 4.0 and global workplace engagement, vocational English training should incorporate authentic communication challenges (Pambudi & Kaliaskarova, 2023). Thus, the use of technology-enhanced pedagogy at SMKN 2 Palembang demonstrates how vocational institutions attempt to align language education with industrial and professional communication needs.

In addition, the results showed that students' digital literacy and communication skills were greatly strengthened by technology-assisted education. Classroom observations showed that students became more active and confident when participating in multimedia presentations, collaborative projects, and online discussions. These results are in line with earlier studies (Astuti et al., 2024; Ginusti et al., 2025) that demonstrate how digital learning settings boost students' motivation, speaking confidence, and interaction possibilities in English learning situations.

Additionally, students were able to access real English resources from internet sources thanks to technology-assisted instruction, which promoted self-directed learning and communicative language practice. Dewantara et al. (2024) claim that in vocational English education, AI-powered tools and digital learning platforms improve speaking fluency, vocabulary acquisition, and learner autonomy.

Another important finding was the contribution of technology integration to students' professional communication skills and workplace readiness. Teachers reported that students developed competencies in writing professional emails, preparing digital presentations, conducting workplace simulations, and communicating in professional contexts. This result confirms other research showing that technology-enhanced English instruction improves the employability and digital communication abilities of vocational students (Rosmayanti, 2025; Han, 2026).

The significance of incorporating pedagogical innovation, digital literacy, and workplace-oriented communication into English instruction to meet the demands of the modern labor market has also been emphasized by research on vocational English learning (Pambudi & Kaliaskarova, 2023; Utami & Samsudin, 2026).

The results also showed that cooperative learning exercises encouraged students to communicate with one another. Students were encouraged to collaborate and actively engage in language use through project-based learning, online debates, and digital presentations. This outcome is consistent with studies by Ginusti et al. (2025), who discovered that among vocational English learners, technology-enhanced project-based learning fosters cooperation, communication, creativity, and critical thinking.

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It has also been demonstrated that technology-enabled collaborative activities increase students' self-assurance and engagement in the classroom. These results are consistent with sociocultural learning theory, which highlights the importance of collaboration and communication in language learning.

Challenges in the Implementation of Technology-Assisted English Learning

Notwithstanding the favorable results, this study also found a number of implementation issues. Technological infrastructure constraints, such as erratic internet connectivity and inadequate classroom facilities, were one of the main issues. Due to a lack of technology tools, a number of educators reported having trouble implementing online or multimedia-based learning. This result is consistent with earlier research showing that a major obstacle to effective technology integration in vocational education settings is still insufficient technology infrastructure (Rosmayanti, 2025; Astuti et al., 2024). In educational technology research, the problem of uneven access to technology has also received a lot of attention, especially in developing educational contexts with inadequate institutional resources.

Teachers' disparate degrees of technological proficiency were another issue this study found. Even though the majority of participants had favorable opinions about digital learning, some teachers found it challenging to use educational apps and create interactive digital resources. This result confirms previous studies that highlight the importance of teachers' pedagogical and technological expertise in addition to infrastructure availability for successful technology integration (Han, 2026; Jiang, 2024). The TPACK framework specifically highlights the need for the interaction of technological, pedagogical, and content skills for successful technology integration. Teachers may find it difficult to fully utilize the pedagogical potential of digital learning tools if they lack adequate technological proficiency.

The study also discovered that classroom implementation was impacted by variations in students' digital competence and English proficiency. While some students rapidly adjusted to technology-assisted learning, others needed more guidance and assistance. Similar results were observed by Prasetyo et al. (2022), who contended that the efficacy of online and smartphone-assisted English learning in occupational contexts is influenced by students' preparedness and familiarity with digital tools.

Additionally, some students were occasionally distracted by non-academic internet activity during instructional sessions, which led to issues with classroom management. These results imply that digital literacy instruction and explicit classroom management techniques should go hand in hand with technology inclusion.

Teachers' excessive workload was another significant concern that was found. Participants clarified that compared to traditional teaching techniques, creating digital learning materials, creating interactive exercises, and assessing online assignments needed more preparation time. This result is consistent with earlier

research showing that teachers' instructional responsibilities are frequently increased by technology-enhanced pedagogy, necessitating ongoing professional development assistance (Utami & Samsudin, 2026; Han, 2026). Therefore, to sustain the efficacy of technology-assisted English learning, institutional support, teacher training, and sustainable technology policies are required.

Overall, the findings demonstrate that by improving digital literacy, communicative competence, teamwork, and workplace communication skills, innovative pedagogy and technology greatly enhance vocational English training. Through exercises like online presentations, workplace simulations, and industry-related assignments, vocational English instruction places an emphasis on practical workplace communication, in contrast to general secondary or higher school contexts. However, sufficient infrastructure, teacher preparedness, student digital competency, and institutional support are necessary for successful adoption.

The results also point to issues with teacher burnout, long-term technology sustainability, and digital inequity among students who have little access to gadgets or the internet. To better prepare students for professional settings, vocational schools should use AI-assisted English instruction, create workplace-oriented digital curricula, and offer ongoing teacher training.

5. Conclusion

The opportunities and challenges of incorporating innovation technology and pedagogy in vocational English language classes at SMKN 2 Palembang were examined in this study. The findings and discussion highlight how crucial technology-enhanced pedagogy is to improving vocational English training. The integration of digital technologies, multimedia resources, online learning platforms, and collaborative learning activities enabled more dynamic, student-centered, and workplace-oriented learning environments.

The results showed that the employment of cutting-edge technologies in vocational English instruction was generally viewed favorably by English teachers. Teachers saw digital technology as an effective pedagogical strategy for improving student engagement, classroom interaction, and communicative learning practices, in addition to a supporting teaching tool. Teachers were able to contextualize English learning materials in accordance with professional and vocational communication needs, such as job interview simulations, presentations, workplace interactions, and customer service communication, thanks to technology integration. These methods showed how vocational English instruction became more relevant to students' future careers and more real.

Furthermore, the study discovered that the development of students' digital literacy, professional communication abilities, and communicative competence was greatly aided by technology-enhanced education. Students' use of English for communication became more active, self-assured, and autonomous through

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project-based learning, multimedia presentations, online forums, and group projects. Additionally, students acquired critical thinking, information literacy, digital communication skills, and teamwork—all of which are vital in today's digital age and professional settings.

Despite these encouraging results, the study found a number of difficulties in putting technology-assisted English learning into practice. Limited technology infrastructure, erratic internet access, inadequate classroom amenities, disparities in teachers' technological competency, and variations in students' digital literacy and English proficiency were the main challenges.

When creating digital learning resources and overseeing online instructional activities, teachers also encountered an increase in effort and time constraints. These difficulties show that ongoing institutional support, professional development initiatives, sufficient technical resources, and long-term educational strategies are necessary for the successful integration of innovation technology in vocational English instruction.

Overall, this study shows that innovation pedagogy and technology present significant chances to enhance vocational English learning and get students ready for digital-age workplace communication. To optimize the effectiveness of technology-enhanced vocational English training, educators, schools, lawmakers, and other educational stakeholders must collaborate to solve institutional, pedagogical, and technological challenges. Future studies should take into account the viewpoints of students, look into the long-term effects of technology-enhanced pedagogy on the professional preparedness of vocational learners, and assess the efficacy of cutting-edge technologies like virtual learning environments and artificial intelligence in vocational English instruction.

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