Investigation of Vocational Teachers' and Students' Perception of AI Technology in English Language Learning in SMK Negeri 1 Singarja

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Abstrak

Penelitian ini bertujuan untuk menginvestigasi apa saja tantangan dan bagaimana persepsi guru dan siswa SMK Negeri 1 Singaraja terhadap penggunaan teknologi Kecerdasan Buatan (AI) dalam pembelajaran bahasa Inggris. Explanatory Sequential Mixed Method adalah metode yang digunakan untuk penelitian ini, dengan melibatkan 129 siswa dan 4 guru bahasa Inggris sebagai subjek penelitian. Data yang dikumpulkan melalui metode survey dengan instrumen kuesioner dan wawancara terpandu, yang kemudian dianalisis menggunakan analisis statistik deskriptif. Hasil penelitian menunjukkan bahwa siswa dan guru SMK Negeri 1 Singaraja memiliki pandangan yang positif terhadap penggunaan teknologi AI dalam pembelajaran bahasa Inggris. Penelitian ini juga mengidentifikasi beberapa tantangan yang dihadapi dalam penggunaan AI, seperti koneksi internet yang tidak stabil, keterbatasan AI dalam mengakomodasi bahasa daerah, adanya fitur berbayar di AI yang membuat penggunaan AI menjadi tidak optimal dan maksimal, serta memerlukan adaptasi terus-menerus untuk mengikuti perkembangan teknologi AI. Secara keseluruhan, penelitian ini memberikan wawasan berharga tentang bagaimana teknologi AI dapat meningkatkan pembelajaran bahasa Inggris di SMK dan mempersiapkan siswa menghadapi tantangan masa depan.

Kata Kunci: *Kecerdasan Buatan (AI), Pembelajaran Bahasa Inggris, Persepsi Guru dan Siswa*

Abstract

This study aims to investigate what are the challenges and how teachers and students of SMK Negeri 1 Singaraja perceive the use of Artificial Intelligence (AI) technology in English language learning. Explanatory Sequential Mixed Method was used for this study, involving 129 students and 4 English teachers as research subjects. Data were collected through survey method with questionnaire instrument and interview, which were then analyzed using descriptive statistical analysis method. The results showed that students and teachers of SMK Negeri 1 Singaraja have a positive view towards the use of AI technology in English language learning. The study also identified some challenges faced in the use of AI, such as unstable internet connection, AI's limitation in accommodating regional languages, the existence of paid features in AI that make the use of AI not optimal and maximized, and the need for continuous adaptation to keep up with the development of AI technology. Overall, this research provides valuable insights into how AI technology can enhance English learning in vocational schools and prepare students for future challenges.

Keywords: *Sports, Study Concentration*

INTRODUCTION

The emergence of the Industrial Revolution 4.0 is marked by advances in various technologies such as Artificial Intelligence (AI), Internet of Things (IoT), automated vehicles, three-dimensional printing, nanotechnology, biotechnology, materials science, energy

storage, and multiplication computing (Schwab, 2019). Among these technologies, AI stands out in the field of education. AI facilitates human life by providing computerized reflection of human actions and plays an important role in understanding, analyzing, and learning knowledge expression methods to control intellectual activities (Duan & Xu, 2012).

In the field of education, AI helps students overcome learning challenges and achieve academic success by creating a significant impact on educational technology, providing optimal learning facilities, and offering additional learning through intelligent programs and applications. Seeing the role of AI in education, of course AI really helps students in learning, especially in learning English.

In the English learning process, AI is able to provide learning through computer system design so that it can improve the student learning process (Groff, 2017). The use of AI in English language learning has several advantages: 1) Teachers can develop more interesting learning media (Permana & Astawa, 2020). 2) AI enhances interactive learning and helps achieve learning goals (Kennedy, 2023). 3) AI helps educators follow learning trends and accelerate adaptation in understanding English (Detweiler, 2021). 4) AI enables selection of appropriate materials and provides personal feedback (Subiyantoro et al., 2023).

However, AI also has negative impacts: 1) The potential to replace the role of teachers in the future. 2) Decreased analytical and critical thinking skills due to reliance on AI. 3) Privacy and security concerns, limited academic adjustment, emotional disconnection, misrepresentation of information, and increased screen time that reduces critical thinking skills (Subiyantoro et al., 2023). Key issues include AI features that do not function properly, such as green checkmarks that fail to indicate lesson completion and inaccurate displays of learning progress (Petridou & Lao, 2023).

The emphasis that Vocational High Schools (SMK) place on acquiring practical skills which are highly valued in the labor market makes them an integral part of Indonesia's educational landscape. The Ministry of Education and Culture (2020) reports that the number of students enrolled in vocational schools is rising year, with over 4.9 million students enrolled in 2019. This indicates a growing understanding of the value of vocational training in raising the workforce's competitiveness in Indonesia in the globalization age. Keeping their curricula and teaching techniques up to date with the rapid advancements in industry is the biggest problem vocational schools confront, particularly in light of the upcoming Industrial Revolution 4.0. Technologies such as Artificial Intelligence (AI) have great potential to revolutionize education by providing more sophisticated tools for teaching and learning.

However, teachers' and students' perceptions of AI technology in English language learning vary greatly. Sumakul et al (2022) found that some teachers and students had a positive perception of the use of AI in English language learning, while the findings of Keleş and Aydin (2021) found that the majority of students had a negative perception of AI technology. Therefore, based on these differences in perceptions of AI technology in learning, this research focuses on how vocational school teachers and students perceive the use of AI technology in education, especially in English language learning, and explores what challenges are faced by vocational school teachers and students in using AI technology in English language learning.

METHOD

The Explanatory Sequential Mixed Method was used to design this study. This type of research methodology starts with quantitative research to analyze the data, then uses qualitative research methods to present the findings in a way that is easy to understand (Creswell, 2016). In collecting the required data, researchers used survey methods and interview guide. In collecting the required data, researchers used survey methods and interview guides. In the survey method, a questionnaire was used as the data collection instrument. Meanwhile, the interview guide method used the researcher as the data collection instrument.

The participants in this study were selected through purposive sampling, focusing on individuals with specific characteristics relevant to the research. The study included four

English teachers and 129 students from SMK Negeri 1 Singaraja, a vocational school in Bali. The English teachers were chosen based on their experience and familiarity with using AI technology in their teaching practices. The students, all from the eleventh-grade majoring in hospitality, were selected to provide a diverse perspective on the use of AI in English language learning.

The research utilized two primary instruments for data collection: questionnaires and interview guides. The questionnaire was designed to gather quantitative data on the perceptions of teachers and students regarding the use of AI technology in English language learning. It was structured using a Likert scale (1 to 5) and adapted from previous research by Aljohani (2021). The questionnaire was distributed using Google Forms for efficient data collection. For qualitative data, an interview guide was developed to explore in-depth insights into the challenges and obstacles faced by teachers and students in implementing AI technology. The interview guide questions were adapted from a study by Enzelina (2023) and modified to suit the context of this research. Both the questionnaire and interview guide were tested for content validity by two experts, ensuring their relevance and accuracy.

For the questionnaire instrument, empirical validity and reliability tests were required before distributing the questionnaire to the research sample. Therefore, the researcher first tested empirical validity and reliability by distributing the questionnaire to a non-sample group. The results of the empirical validity test can be seen in Table 1. The test results showed that two statements were invalid. Consequently, these two statements will not be tested for reliability, while the nine valid statements will be tested for reliability. The results of the reliability test in Table 2 indicate that the nine statements are reliable and ready to be distributed to the research sample.

The data analysis process in this study was bifurcated into quantitative and qualitative methods. Quantitative data from the questionnaires were analyzed using descriptive statistics, which involved calculating the frequency and percentage of responses to each questionnaire item. The results were then interpreted using a classification system proposed by Riduwan (2009), categorizing the responses into five levels ranging from "Very Good" to "Very Poor." For qualitative data, the interviews were analyzed using the interactive model of Miles et al. (2014), consisting of four stages: data collection (gathering detailed information through interviews with selected teachers and students), data condensation/reduction (summarizing and focusing on key points, themes, and discarding irrelevant data), data display (organizing data in a visual format such as tables, charts, and descriptive summaries), and conclusion drawing/verification (developing conclusions and identifying new findings based on the analyzed data).

Table 1. Empirical Validity Test Results

Statement Number	r count	Description	r table	Conclusion
1	0.572	>	0.349	VALID
2	0.734	>	0.349	VALID
3	0.512	>	0.349	VALID
4	0.693	>	0.349	VALID
5	0.171	<	0.349	NOT VALID
6	0.457	>	0.349	VALID
7	0.604	>	0.349	VALID
8	0.479	>	0.349	VALID
9	-0.047	<	0.349	NOT VALID
10	0.516	>	0.349	VALID
11	0.642	>	0.349	VALID

Table 2. Reliability Test Result

N of Items	Cronbach's Alpha	Description
9	0.827	Reliable

RESULT AND DISCUSSION

Result

Perception of Vocational School Students and Teachers towards AI Technology in English Language Learning. The research results show that teachers and students at SMK Negeri 1 Singaraja have a positive perception of AI technology in learning English. The results of the questionnaire analysis from the teacher can be seen in Table 3, and the results of the student questionnaire can be seen in Table 4.

Table 3. SMK Negeri 1 Singaraja Teachers' Perception of AI Technology
Descriptive Statistical Analysis Method

$$P = \frac{Total\ Score\ (F)}{Number\ of\ Teachers\ Frequencies\ (N)} \times 100\%$$
$$P = \frac{148}{180} \times 100\%$$
$$P = 0,82 \times 100\%$$
$$P = 82\%$$

Table 4. SMK Negeri 1 Singaraja Students' Perception of AI Technoloigy
Descriptive Statistical Analysis Method

$$P = \frac{Total\ Score\ (F)}{Number\ of\ Teachers\ Frequencies\ (N)} \times 100\%$$
$$P = \frac{4.377}{5.805} \times 100\%$$
$$P = 0,75 \times 100\%$$
$$P = 75\%$$

Based on the analysis in Table 3 using descriptive statistical analysis methods, results were found showing students' perceptions of AI in learning English with a percentage of 75%, which if interpreted using the classification system proposed by Riduwan (2009), means that students at SMK Negeri 1 Singaraja have a "Good" perception of AI technology in English language learning.

Meanwhile, based on the analysis in Table 4 using descriptive statistical analysis methods, results were found that show teachers' perceptions of AI in English language learning with a percentage of 82%, which if interpreted using the classification system proposed by Riduwan (2009), means that State Vocational School teachers 1 Singaraja has a "Very Good" perception of AI technology in English language learning.

English Teachers' Challenges to the Implementation of AI Technology in English Language Learning

English teachers at SMK Negeri 1 Singaraja have varying perceptions of AI technology in English language learning. A direct interview with one English teacher revealed several key points: AI technology, such as Canva, Tome AI, and Pictory AI, significantly aids in creating teaching materials and enhances the online learning process, making classes more interactive and improving the learning atmosphere. Teachers play a crucial role in adapting AI technology to meet vocational school educational needs, ensuring it prepares students for the workforce. AI technology has the potential to change how students acquire and master English skills, providing additional resources and support beyond traditional teaching. Premium access to AI tools and the need to adapt to new technologies are significant obstacles. Teachers also noted that while AI reduces their role in knowledge transfer, their influence on students' attitudes and ethics remains irreplaceable.

Students' Challenges in Using AI Technology in English Language Learning in Vocational School

Students at SMK Negeri 1 Singaraja have a positive view of AI technology in English learning, using tools like Google Translate for vocabulary and clarification. Key insights from interviews with eight XI Hospitality students include: AI technology helps students understand and expand their vocabulary, clarifying concepts not fully covered by teachers, and providing additional learning resources. Despite AI's benefits, students still find face-to-face learning more enjoyable and less anxiety-inducing when supported by AI technology. Opinions vary on whether AI technology diminishes the role of teachers. Some students believe AI reduces reliance on teachers, while others think teachers remain indispensable due to AI's limitations. The main obstacles include the need for a stable internet connection and AI's inability to fully understand local languages or cover all school materials.

Discussion

Based on the research results, students at SMK Negeri 1 Singaraja generally show a positive attitude towards the use of AI technology in learning English. Findings or data show that AI technology is considered a useful tool in providing additional learning resources, explaining difficult things more easily, and reducing the fear or nervousness that usually arises when studying in a live classroom. In line with this, Diantama (2023), states that AI has a positive impact by reducing anxiety and increasing self-confidence in academic life. SMK Negeri 1 Singaraja students believe that AI can help them understand English lessons better. For example, they can utilize AI to get additional explanations about English grammar or speaking English, thus making English learning more fun and interesting. This positive perception shown by students is in line with research conducted by Enzelina (2023) which states that AI-based applications make learning faster and increase comfort in the English language learning process. Additionally, AI has the ability to provide immediate feedback and adapt learning to students' learning styles. This is in line with the experience of students at SMK Negeri 1 Singaraja, where AI helps them to be more involved in the learning process and improve their academic achievement. This is in line with research conducted by Putri et al (2023) which states that AI can provide support that suits the needs of each student.

Students at SMK Negeri 1 Singaraja also believe that AI can help them gain fairer access to learning resources. In addition, students also feel that AI can make English learning more interesting and support their English language development. This is in line with Kennedy's (2023) research, which states that AI tools can increase student motivation and engagement through interactive learning experiences. By offering various interactive platforms, AI helps students practice and improve their English skills. This positive viewpoint is very important as it shows that students are ready to accept AI technology that can improve their learning experience especially English learning.

English teachers at SMK Negeri 1 Singaraja also have a positive view of the use of AI technology in learning English. Interviews with teachers reveal that they see AI as a useful tool for optimizing teaching methods and creating interactive and effective learning environments. AI tools, such as Tome AI which generates automated PowerPoints and Pictory AI which generates instructional videos. These tools can meet students' various learning needs and make learning English in the classroom more interesting. Teachers also see AI as a new opportunity to create interactive learning environments. With the help of AI tools, teachers can create more interesting and challenging learning activities, thereby encouraging students to be more motivated in learning. This is in line with research by Permana and Astawa (2020) which revealed that teachers can develop more interesting English learning media so that the media can become an effective learning media design to increase students' interest in the English learning process through AI. Additionally, AI helps teachers identify each student's learning needs, allowing them to prioritize students who need additional help. For example, there are teachers who use AI technology to automatically assess their students' speaking abilities. This app can provide immediate feedback on grammar and pronunciation, which really helps students improve their English

skills. Thus, the learning process becomes more efficient and effective. This finding is in line with research by Subiyantoro et al (2023) which found that through AI, teachers can also choose English learning materials that are adapted to the material that can be delivered by AI. So that through artificial intelligence it is able to create feedback on the personal learning process, especially English learning. In addition, teachers believe that AI helps them save time in carrying out administrative tasks such as providing feedback or grading homework, thus giving them more time to concentrate on creative and interactive learning activities. This conclusion is in line with research findings in teacher interviews which state that AI can increase teacher productivity and help them design innovative learning activities.

Although students and English teachers at SMK Negeri 1 Singaraja have a positive view towards the use of AI technology in English language learning. Students of SMK Negeri 1 Singaraja revealed that one of the main problems in using AI technology for English language learning is the unstable internet connection. Many students have difficulty accessing AI tools due to unstable internet connection. In addition, the fact that the AI cannot fully understand and accommodate local languages is a problem for students at SMK Negeri 1 Singaraja. As a result, they feel inhibited in maximizing the use of AI technology in English learning. Based on the interview results, it was also found that students felt that AI technology enabled users to become dependent on continuing to use AI in learning English. The same thing was also expressed by Subiyantoro et al (2023), who stated that AI can reduce the critical thinking skills possessed by teachers and students due to higher dependence on AI. In fact, the results of the interviews also show that some students feel that the role of teachers could be replaced by AI, which is caused by the students' own dependence on AI and the increasingly rapid progress of AI technology. These findings are in line with research conducted by Subiyantoro et al (2023) which states that the use of AI can replace the role of English teachers and lecturers in the future because the millennial generation already has the competence and skills and technological literacy, especially in operating artificial intelligence.

Apart from students, English teachers at SMK Negeri 1 Singaraja admitted that they experienced several challenges when using AI in learning English. One of the main challenges felt by English teachers at SMK Negeri 1 Singaraja is that many AI technologies use paid features to be able to access all the functions of AI technology, and this is an obstacle for teachers to make maximum use of AI. The findings from interviews with teachers are in line with the opinion expressed by Petridou and Lao (2023), who revealed that the main problem experienced in using AI technology is that there are features that do not function well, such as the green check mark failing to indicate lesson completion. and inaccurate visual displays of participants' learning progress. Apart from that, teachers must also be able to adapt and understand how to use AI technology effectively in their learning plans. The rapid advancement of technology requires adaptation by teachers, to equip teachers with the skills and knowledge necessary to maximize the effective use of AI technology in English language learning. This adaptation to AI technology is essential to ensure that teachers can make the most of AI tools, thereby maximizing their benefits for students. This is in line with research by Cunningham-Nelson et al (2019), which states that although AI can simplify certain teaching tasks, its effective use requires ongoing training and adaptation.

The findings of this study are in line with other research on AI technology in education. Studies show that AI has great potential to improve learning outcomes and academic experiences. Enzelina (2023) said that AI-based applications can accelerate learning and make learning more enjoyable, as experienced by students of SMK Negeri 1 Singaraja. In addition, Yahya et al (2023) emphasized the role of AI in building practical skills and readiness for the Fourth Industrial Revolution, which is particularly relevant for vocational education such as that provided at SMK Negeri 1 Singaraja. In addition, the results of interviews with teachers in this study mentioned that AI in the educational environment especially in English language learning is seen in its ability to provide personalized learning experiences and create interactive learning environments, this finding is in line with Aljohani's

(2021), which mentions that AI technology contributes to language development and provides additional support for English language learning.

This study shows that AI has great potential to improve students' proficiency in English at SMK Negeri 1 Singaraja. Both teachers and students see AI as a very useful tool in English learning. Students believe that AI has many benefits, such as providing additional learning resources, helping them understand difficult concepts, and reducing their anxiety while learning. Teachers also believe that AI can make teaching more interactive and effective. Nonetheless, there are some challenges to be faced. Students faced issues with unstable internet connections, which hindered them from using the AI tools. Also, some students face issues with regional languages that AI cannot accommodate. Teachers, on the other hand, faced issues with the premium features of AI, which prevented them from accessing and using AI technology to its full potential in English language learning, and the need for continuous training or adaptation in order to maximize the use of many AI technologies in English language learning. By understanding the positive perceptions of students and teachers and the challenges they face, this study provides important insights into how AI technologies can be used in vocational education. It is important to continuously evaluate and adapt the use of AI to maximize the benefits for all parties involved. As technology and educational practices evolve, further research and collaboration between educational institutions, policymakers, and technology developers will be essential to maximize the potential of AI in preparing students for future challenges and opportunities

CONCLUSION

Research at SMK Negeri 1 Singaraja shows that students and teachers have a positive view of the use of AI technology in learning English. Analysis shows that 75% of students gave a rating of "Good" and 82% of teachers gave a rating of "Excellent". Students find AI technology helpful in improving English skills, providing additional learning resources, and making assignments easier. Teachers find AI technology useful in creating teaching materials, online learning, and increasing interactivity in the classroom.

However, there are challenges such as unstable internet connections and difficulty for AI to understand regional languages such as Balinese. Teachers also face obstacles in accessing premium features and must adapt quickly to developments in this technology. Nevertheless, positive views from students and teachers show the great potential of AI technology in improving the quality of English language learning. In addition, both students and teachers agree that the role of English teachers remains important and cannot be completely replaced by AI technology.

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