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Accounting Teachers' Perception Towards The Use Of Digital Ai Technology Ai In Learning

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Abstract: This study aims to explore the perceptions of accounting teachers towards the use of digital technology, especially artificial intelligence (AI), in the learning process at SMK Batik 2 Surakarta. The method used is an in-depth interview with an accounting teacher who has more than one year of experience. This study explores the perceptions of accounting teachers at SMK Batik 2 Surakarta towards the use of AI technology in learning using qualitative descriptive methods through interviews and classroom observations. Data were analyzed using thematic techniques, through coding and grouping into main themes to understand teachers' perceptions in depth. The results of the study indicate that AI technology has great potential to improve the quality of learning by helping students understand complex concepts and increasing their engagement in the learning process. However, challenges such as limited infrastructure and variations in technological skills among students are obstacles that need to be overcome. The teacher is optimistic that with the right support, the benefits of AI technology can be maximized. This study recommends improving training programs for teachers and adequate infrastructure, as well as the importance of collaboration between teachers, schools, and parents in supporting the implementation of this technology. With these steps, it is hoped that students can utilize AI technology optimally, thereby improving their overall learning outcomes.

Keyword: Artificial Intelligence, Teacher Perception, Learning Technology, Accounting

INTRODUCTION

Education in the current digital era has undergone significant transformation with the emergence of various advanced technologies, including artificial intelligence (AI). AI technology offers great potential to enrich the learning process by providing intelligent and adaptive solutions according to individual student needs. In this context, the role of teachers as primary facilitators cannot be ignored; they are guides who help students navigate the abundance of information. Therefore, how teachers respond to and adopt AI technology in learning is interesting to investigate. Understanding teachers' perceptions and readiness to use AI is essential to designing effective strategies to increase student engagement and motivation,

as well as ensuring that this technology is optimally utilized in the ever-evolving educational process.

SMK Batik 2 Surakarta, as a vocational secondary education institution that focuses on accounting education, is an important object in this study. Accounting, as a crucial subject, requires in-depth understanding and practical application that can be strengthened through artificial intelligence (AI) technology. The use of AI technology in accounting learning at SMK Batik 2 Surakarta has significant potential to improve the effectiveness of teaching and learning, so that students not only learn theory, but also gain relevant and applicable experience. By integrating this technology, students can be better prepared to face the challenges of an increasingly digital workplace, where technological skills are becoming increasingly important. This makes this study relevant to explore how AI technology can be adopted in the context of accounting education, as well as its impact on the development of student competencies.

Accounting education is an integral component in the education system that aims to develop students' logical, analytical, and critical thinking skills. This subject not only provides an understanding of basic concepts in financial recording and reporting, but also forms a critical mindset in analyzing financial information and making strategic decisions. Accounting education is an integral part of the education process that aims to develop students' logical, analytical, and critical thinking skills.(Putri, 2021)In today's learning era, the use of technology is a must to support the effectiveness and efficiency of accounting learning.(Ardiansyah & Sari, 2023). Teachers as the main agents in the education process have a crucial role in designing and implementing technology-based accounting learning.(Isma et al., 2023). Therefore, teachers' perceptions of the use of accounting learning technology in the current learning era are important to understand. In facing technological developments, teachers need to have a positive perception of the use of accounting learning technology.(Fidiyanti et al., 2023). This positive perception includes a deep understanding of the benefits of technology in improving the quality of accounting learning, both in terms of the diversity of teaching methods and the diversity of learning resources.(Nasution & Dar, 2022). In addition, teachers need to be able to integrate technology with the existing curriculum, so that accounting learning remains relevant and in accordance with the demands of the times.(Yusriadi et al., 2023).

However, it cannot be denied that many teachers still face challenges and obstacles related to the use of technology in accounting learning.(Nguyen et al., 2021). These challenges include limited accessibility of technology, lack of training for teachers, and uncertainty regarding the effectiveness of technology in improving students' understanding of accounting concepts.(Ardiansyah, 2023). Therefore, it is important for us to understand more deeply the teachers' perceptions of the use of accounting learning technology in the current era.(Franz et al., 2023). Through a deep understanding of teacher perceptions, we can identify various supporting and inhibiting factors in the implementation of accounting learning technology. In addition, appropriate strategies and policies can also be formulated to improve teacher acceptance and skills in utilizing accounting learning technology.(Sarosa et al., 2022). Thus, we can optimize the potential of technology to improve the quality of accounting education in the current learning era, while preparing a reliable generation to face the challenges of the 21st century.(Aji et al., 2023).The testing of educational applications that has been carried out is able to provide an objective and independent view of the implementation of adaptive learning media (Hernawan Sulistyanto, 2024).

Teachers' perceptions of the use of accounting learning technology in the current learning era have a crucial role in shaping class dynamics and the effectiveness of the learning process.(Sari, 2021). As technology advances, the use of digital tools and platforms in accounting teaching has become increasingly common. However, many teachers find both challenges and opportunities in integrating these technologies into their curriculum.(Ali et al., 2023). Some teachers see technology as a tool that can increase student engagement and

facilitate the delivery of material.(Fitria, 2023). With the availability of interactive accounting learning applications, educational games, and resources today, teachers can create a more engaging and effective learning environment.(Qotrunnida et al., 2023). students' creative abilities in the accounting learning process have been proven effective in improving students' creative abilities in the learning process (Agus Susilo, 2024). In addition, the use of technology allows for personalization of learning, where teachers can adjust the material according to the level of understanding of each student.

However, on the other hand, some teachers may feel anxious about the changes. They may worry about students' dependence on technology or the lack of supervision of device use during current learning.(Ahmad et al., 2021). In addition, there are technical challenges such as limited internet access, device availability, and lack of adequate training to integrate technology into learning.(Brandtzaeg et al., 2021). Teachers' perceptions are also influenced by their personal experiences with technology. Teachers who are familiar and skilled in using digital tools may be more open to these innovations, while those who are less experienced may need additional support.(Skjuve et al., 2021). Therefore, teacher training and mentoring in adopting accounting learning technology is the key to success in learning accounting subjects today.(Ruindungan & Jacobus, 2021).

It is important for teachers to understand that the use of technology in accounting learning is not an end in itself, but rather a tool that supports the achievement of learning objectives. Teachers' positive perceptions of this technology can improve teaching efficiency, motivate students, and prepare them to face the increasingly complex demands of the digital world. By integrating technology effectively, teachers can create a more interactive and engaging learning experience, so that students are more engaged in the learning process. Through collaboration, sharing experiences, and continuous development of digital skills, teachers can play an integral role in shaping a generation that is not only proficient in accounting, teachers have a very important role as facilitators in learning(Hindun Khozanah, 2019). but also have relevant technological skills. This is very important to ensure that students are ready to face the challenges of the ever-changing and evolving world of work.

In this context, this study aims to explore accounting teachers' perceptions of the use of AI digital technology in learning at SMK Batik 2 Surakarta. This case study is expected to provide a deeper understanding of the challenges, opportunities, and obstacles faced by accounting teachers in adopting AI technology in the learning process. With a better understanding of accounting teachers' perceptions, it is hoped that this study can provide relevant recommendations to improve the integration of AI digital technology in Accounting learning at SMK Batik 2 Surakarta, as well as contribute to the development of more innovative and effective learning methods in the future.

METHOD

This study adopts a qualitative descriptive method to explore accounting teachers' perceptions of the use of AI digital technology in learning at SMK Batik 2 Surakarta. With a research design that focuses on in-depth understanding, the main objective is to uncover teachers' views and attitudes regarding the application of AI technology in the accounting teaching process. Data were obtained through in-depth interviews with accounting teachers at the school, as well as direct observation of learning practices that utilize AI technology. This approach provides richer insights into how teachers perceive the benefits and challenges of integrating technology into their teaching methods, as well as how it contributes to students' learning experiences. Thus, this study is expected to provide recommendations for improving the use of technology in accounting education.

The research sample consisted of 3 accounting teachers who were selected purposively, based on the criteria of their teaching experience and involvement in the use of digital technology. The semi-structured interview method was used to explore the opinions,

experiences, and challenges faced by teachers in integrating AI technology into the accounting curriculum. The questions asked were systematically designed to obtain in-depth information about the advantages and disadvantages of AI technology, as well as its impact on the learning process and student learning outcomes. With this approach, the study seeks to obtain a clear picture of how AI technology can function as a tool that supports accounting learning, while identifying barriers that may hinder its optimal use in the classroom.

Observations were conducted in a classroom context where AI technology was used to support learning activities. The purpose of this observation was to understand the practical application of technology and identify interactions between teachers, students, and technology. In this process, researchers observed how teachers integrated AI into teaching and how students responded to the use of the technology. Data obtained from this observation will be supplemented with detailed field notes, recording the dynamics that occur in the classroom, including how students participate and interact with the teaching materials. By combining data from interviews and observations, this study aims to provide a comprehensive understanding of the role of AI technology in accounting learning at SMK Batik 2 Surakarta.

The data from the interviews and observations were then analyzed qualitatively using thematic analysis techniques. This analysis process involves data coding, where information obtained from interviews and observations is organized into relevant categories. Furthermore, the researcher identified the main themes that emerged from the data and mapped the relationships between these themes. The results of the analysis are expected to provide a comprehensive picture of accounting teachers' perceptions of the use of AI digital technology, as well as its implications for the development of learning methods at SMK Batik 2 Surakarta. The conclusions of this study will be presented in narrative form that describes various teacher perspectives regarding the benefits, obstacles, and recommendations for the use of AI technology in accounting learning.Activeness can be interpreted as a psychological tendency that considers children as proactive individuals, motivated to act, and have personal desires and aspirations (Rahmawati, 2024). Through this research, it is expected to provide a significant contribution to the development of technology integration strategies in accounting education and provide valuable input for education policies at the school level, with the ultimate goal of improving the quality of education and student readiness to face the challenges of an increasingly digital world of work.

RESULTS AND DISCUSSION

RESULTS

The results of the study on accounting teachers' perceptions of the use of AI digital technology in learning at SMK Batik 2 Surakarta revealed that there were variations in understanding among teachers regarding this technology. The majority of teachers indicated that they had basic knowledge of AI technology and, more importantly, they were aware of the great potential that could be utilized in the context of education. They did not only view AI as a simple tool, but as an innovation that could revolutionize the way they teach and interact with students. In their view, the application of AI technology could not only increase the efficiency of the teaching and learning process, but also create a more interactive and interesting learning experience, thus encouraging students to be more actively involved in learning. Thus, teachers felt that the integration of this digital technology could be the key to presenting a more modern and relevant teaching method to the needs of the times, while also preparing students to be better prepared to face the challenges of an increasingly complex world of work.

The following are the results of interviews with three accounting teachers at SMK Batik 2 Surakarta regarding their perceptions of the use of AI technology in learning. The table below summarizes the teachers' views on several important aspects, such as their knowledge of AI, views on the use of this technology, its impact on student motivation, the potential of AI for personalized learning, the main challenges faced, and their attitudes towards the changes

brought about by this technology. Although there are differences in the level of understanding and readiness, all teachers agree that AI has the potential to improve the quality of learning, but requires support in the form of adequate infrastructure and ongoing training.

Table 1. Interview Results

No	Perception Aspect	Teacher 1	Teacher 2	Teacher 3
	Knowledge about AI	Familiar with the basic concepts of AI, but it takes time to understand them more deeply.	Knowing only a little about AI, there is still a lot to learn.	Just understand AI technology and its potential in teaching.
	Views on the Use of AI	AI can make the teaching process easier and more efficient, especially in terms of classroom management.	Seeing AI as an important innovation, but it remains to be seen whether it is effective in all situations.	Realizing the potential of AI to significantly change teaching methods.
	Impact on Student Motivation	Students seem more enthusiastic when AI technology is used in learning, they are more engaged.	AI can help less motivated students become more active.	There appears to be an increase in student participation in classes using AI, especially in interactive learning.
	Personalization of Learning	With AI, I can tailor the material to each student, but this takes some getting used to.	AI can help create a more personalized learning approach for students with different abilities.	Personalization with AI is very possible, but limited facilities are still a major obstacle.
	Main Challenges	The infrastructure in schools is inadequate for optimal use of this technology.	The main challenge is the lack of training on how to use AI effectively in learning.	Often hampered by slow internet, making the use of AI applications less than optimal.
	Attitudes towards Change	Tends to be open to new technologies, but needs training to become more confident.	Very excited to try AI, although it needs more support for adaptation.	Open to change, but wants change to be gradual so as not to rush things.

From the table above, data from three teachers at SMK Batik 2 Surakarta, their knowledge of AI varies, with Teacher 1 and Teacher 3 already familiar, although Teacher 1 still needs a deeper understanding, while Teacher 2 only knows a little about AI. In their view, AI is recognized as an important innovation that can facilitate the teaching process and classroom management, although its effectiveness in all situations is still questionable. The use of AI has been shown to increase student motivation and participation, especially in interactive learning. In terms of personalization, AI is considered capable of adjusting materials to student needs, although there are challenges such as inadequate infrastructure, limited training, and slow internet connections. Overall, the teachers' attitudes towards this technological change are positive, with Teacher 1 and Teacher 3 open but need training, while Teacher 2 is very enthusiastic even though he needs more support to adapt.

In the context of learning, teachers reported significant positive impacts from the use of AI technology, which directly impacted the student learning experience. One of the most striking aspects is the increase in student motivation, which is clearly visible when they are involved in learning activities that use AI-based applications. With the presence of this technology, learning becomes much more interesting and interactive, creating an atmosphere that encourages students to participate more actively. Students not only receive information passively, but they also show higher enthusiasm for the material being taught, which significantly increases their level of engagement in the learning process. This has positive implications for learning outcomes, because when students feel more motivated and involved, they tend to understand difficult concepts more easily and remember information better. The presence of AI technology, therefore, not only supports the learning process, but also plays a major role in creating a dynamic and enjoyable learning environment.

Teachers also noted that the application of AI technology in learning allows for significant personalization in the learning process. With AI's ability to analyze data and understand the needs and abilities of each student, teachers can provide specifically tailored materials. This means that each student has the opportunity to learn in the most effective way and according to their individual learning style. With this approach, the learning experience becomes more inclusive, where students from different backgrounds and abilities can feel supported according to their needs. As a result, students not only feel more valued and cared for, but they are also able to develop their potential optimally. A learning environment that is responsive to various learning styles creates an atmosphere that is more conducive to mastering the material, so that students can more easily understand the concepts being taught and achieve better results in their learning.

However, despite the clear benefits of implementing AI technology in learning, this study also identified several significant challenges faced by teachers at SMK Batik 2 Surakarta. One of the main challenges that emerged was the limited infrastructure available at the school. Several teachers complained about the lack of adequate devices, such as computers and tablets, as well as unstable internet connections. These limitations greatly hamper the optimal implementation of AI technology in the classroom, reducing the effectiveness of the use of applications that should be able to improve students' learning experiences. Without adequate infrastructure support, efforts to integrate this technology are less than optimal, and teachers feel hampered in providing innovative and engaging learning experiences for students. This shows the importance of attention from schools and the government to improve technological facilities so that the potential of AI in education can be truly realized and utilized effectively.

Additionally, many teachers also expressed a lack of confidence in using AI technology in their teaching. They noted that they had not received adequate training to understand how to effectively integrate this technology into their teaching methods. Concerns about their ability to adapt to new technologies were a significant factor holding them back from innovating in their teaching. Without adequate understanding, teachers felt trapped in the traditional teaching methods they were familiar with, hindering their potential to implement more modern and

engaging approaches. This creates a cycle where lack of training leads to lack of confidence, which in turn hinders the adoption of technology that could have a positive impact on students. Therefore, it is imperative to provide comprehensive and ongoing training for teachers so that they feel more prepared and confident in using AI technology in their teaching and learning process.

Resistance to change has also emerged as another significant challenge in implementing AI technology in the classroom. Some teachers have expressed concerns that implementing new technologies could disrupt traditional teaching methods that they have used for years. They are comfortable with the approaches they are familiar with and use, so the idea of trying new things can bring up feelings of anxiety and uncertainty. These concerns often stem from a fear of losing control over the learning process they are familiar with, as well as uncertainty about the effectiveness of new methods. Additionally, many teachers feel that they will have to invest significant time and effort in learning new technologies, which can be an additional burden on top of their existing workload. Therefore, it is important to create an environment that supports and encourages teachers to innovate, by providing an understanding of the benefits of technology and how to integrate it without having to abandon proven teaching approaches.

To overcome the challenges faced in implementing AI technology, the teachers proposed several recommendations that were considered crucial. They emphasized the importance of holding regular training for teachers on AI technology and how to integrate it effectively into learning. With this training, it is hoped that teachers' confidence in using technology will increase, so that they feel more prepared to apply innovative teaching methods. In addition, structured and ongoing training can help teachers better understand the potential of AI in improving students' learning experiences. Through practical sessions and case studies, teachers will not only learn theory, but also how to apply this technology in real contexts in the classroom. Thus, effective training can be the key to driving positive changes in the way of teaching and learning, thereby creating a more dynamic and responsive environment to students' needs.

In addition, improving infrastructure in schools is also considered very crucial to support the implementation of AI technology in learning. Schools need to provide adequate devices, such as computers and tablets, and ensure a stable and fast internet connection. Without adequate facilities, efforts to integrate digital technology will be less than optimal, and this can hinder the effectiveness of using AI in the classroom. With adequate facilities, it is hoped that the learning process involving AI technology can run more smoothly and effectively, so that teachers and students can utilize the potential of this technology to the maximum. Good infrastructure not only improves the learning experience, but also provides opportunities for students to be more involved in interactive and interesting activities. Thus, investment in educational infrastructure is an important step in creating an innovative and responsive learning environment to technological developments.

Overall, this study shows that accounting teachers at SMK Batik 2 Surakarta have a positive perception of the use of AI digital technology in learning. They realize that AI integration can bring many benefits, such as increasing student motivation and personalizing the learning experience. However, this study also identified several challenges that need to be overcome, including limited infrastructure, lack of training, and resistance to change. However, the potential of AI to improve the quality of education is enormous. With the right support, both in terms of facilities and training, this technology can be an effective tool in creating a more dynamic and innovative learning environment. In addition, the application of AI in the classroom can help shape a generation of students who are better prepared to face the increasingly modern and complex world of work, so that they can compete well in the global market. This shows that strategic steps in utilizing digital technology are key to optimizing the education process and preparing students for future challenges.

DISCUSSION

The results of the study on the perception of accounting teachers at SMK Batik 2 Surakarta towards the use of AI digital technology in learning showed a significant positive view among teachers, where the majority of them realized the great potential of this technology to improve the overall quality of education. In this context, (Suparlan, 2019) Constructivism Theory underlines the importance of active and interactive learning experiences, where teachers understand that by integrating AI into the learning process, they can not only enrich the material taught, but also create a more engaging learning experience for students. This is important, because a more engaging learning experience can increase student engagement in the teaching and learning process, which in turn contributes to improving student learning outcomes. Thus, the application of AI technology is considered a strategic step to present more modern and relevant teaching methods, as well as to meet the needs of a generation of students who are increasingly accustomed to the use of technology in their daily lives.

One of the most prominent findings of this study is the increase in student motivation when using AI-based applications in learning. This is reflected in the increasing level of student engagement in the learning process, indicating that this technology not only functions as a tool for mastering the material, but also plays an important role in creating a more enjoyable and interesting learning atmosphere. (Christanty., et al, 2021)Engagement Theory is a theory that emphasizes that when students are engaged in the learning process, they are more likely to actively participate, discuss, and explore the material, which in turn can improve their understanding and mastery of the concepts being taught. With AI-based applications, students can enjoy an interactive and dynamic learning experience, which can reduce the boredom that often occurs during traditional learning. The use of this interesting technology not only makes students more enthusiastic, but also contributes to increasing their focus and attention during learning sessions. When students feel engaged and excited, they are more likely to actively participate, discuss, and explore the material, which in turn can improve their understanding and mastery of the concepts being taught.

However, the challenges faced by teachers in implementing AI technology in learning cannot be ignored and need serious attention. One of the main barriers identified is infrastructure limitations, including the lack of adequate hardware and a stable internet connection. (Busro, 2018) Human Resource Theory explained that without adequate infrastructure support, efforts to integrate this technology in the classroom are less than optimal, resulting in technology not being utilized optimally. This limitation can hinder teachers from implementing innovative and interesting teaching methods, which should be the main goal of using technology. Therefore, it is important for schools and the government to invest in the procurement of quality hardware and ensure a fast and stable internet network. With adequate facilities, the learning process involving digital technology can run more smoothly, effectively, and have a positive impact on students, so that they can feel the full benefits of integrating AI technology in education.

In addition, many teachers feel less confident in using AI technology in the learning process. They admit that the limitations in knowledge and skills related to this technology are often caused by a lack of adequate training. Most teachers feel that they have not received enough information to understand how to effectively integrate AI technology into their existing teaching methods. This lack of confidence is a significant factor that hinders them from innovating and trying new approaches in teaching, so they tend to get stuck in the routine of methods they have mastered. Therefore, comprehensive and ongoing training is needed to equip teachers with the necessary skills and knowledge. Through a structured training program, teachers will not only gain a theoretical understanding of AI technology, but also the opportunity to practice directly in its application in the classroom. Thus, increasing teachers' confidence in using technology will encourage them to be more open to change and ready to explore more innovative teaching methods.

Resistance to change is also a challenge to consider when implementing AI technology in the classroom. Some teachers are concerned that implementing new technologies could change the traditional teaching methods they have used for years, which have become comfortable and familiar to them. This discomfort with new approaches is often accompanied by a fear of losing control over the learning process, which can discourage teachers from trying new things. Uncertainty about the effectiveness of new teaching methods and the possibility that students will not respond well are also factors that contribute to this resistance. Therefore, to overcome this problem, sensitive and supportive strategies are needed to make teachers feel more comfortable adapting to change. This approach can include providing information and discussion sessions that allow teachers to express their concerns, as well as providing positive evidence of successful implementation of new technologies in other schools. In addition, support from colleagues and school leaders is also very important to build teacher confidence in trying more innovative teaching methods. By creating a supportive environment, it is hoped that teachers will see AI technology as a tool that can improve the quality of teaching, rather than as a threat to existing methods.

The educational approach that integrates technology must be done in a way that is not coercive, but rather provides opportunities for teachers to explore and experiment. Constructivism Theory is again relevant here, as teachers need to be given space to understand how technology, especially AI, can complement and enrich the teaching methods they have previously used. This way, they do not feel pressured to immediately change their entire approach, but can gradually explore new possibilities. Open dialogue between teachers, school leaders, and colleagues is essential to create a supportive environment, where teachers can share experiences, challenges, and solutions in implementing technology. Through this collaboration, teachers can find new ways to apply AI technology that are appropriate to their classroom context, without having to abandon approaches that have proven effective. This support not only increases teacher confidence, but also encourages innovation in teaching, where technology is used as a tool to achieve better learning goals. With an inclusive and supportive approach, the integration of AI technology in education can be smoother and provide maximum benefits for students.

The results of this study also show that a more inclusive learning experience can be created through the personalization of learning offered by AI technology. (Latifah & Saputra, 2023). Gardner's Individual Learning Theory With the ability to adjust learning materials according to the needs and abilities of each student, this technology provides teachers with a very useful tool to create a learning environment that is more responsive and adaptive to various learning styles. This personalization allows teachers to provide more individual attention to students, so that each student can learn in the way that is most effective for them. This is very important to ensure that all students, regardless of their background and abilities, receive the right support and according to their learning needs. When students feel that the material being taught is relevant and accessible, their motivation and engagement in the learning process also increase. Thus, the integration of AI technology in learning not only serves to improve teaching efficiency, but also contributes to the creation of a more equitable and inclusive learning experience, where every student has the opportunity to reach their full potential.

Furthermore, the importance of collaboration between schools, government, and other educational institutions in providing infrastructure support and training cannot be ignored. (Maissy, 2023) Collaboration Theory states that synergy between various parties can produce a greater impact in achieving educational goals. To achieve this goal, policies that support the development of technology in education must be prioritized. With strong support from the government, schools can access the resources needed to improve infrastructure, such as hardware and better internet connections. In addition, training programs designed to improve teachers' skills in using technology should also be a major focus. Synergy between various parties, including private institutions, communities, and non-governmental organizations, will

have a greater impact in improving the quality of education. When all these elements work together, both teachers and students will have the opportunity to utilize the potential of technology to its fullest, so that the learning process becomes more effective, interesting, and relevant. Thus, close and planned collaboration will not only improve the learning experience in the classroom but will also prepare students to face the challenges of an increasingly complex and technology-based world of work.

The challenges in educational infrastructure are not only limited to the procurement of hardware, but also include the need for training technicians who can maintain and repair the devices. Without a team of trained technicians, the risk of device damage can disrupt the smooth learning process and create uncertainty for teachers and students. With a trained and ready team, schools can ensure that the technology used is always in optimal condition and ready to use, so that every learning session can run smoothly. This is essential to reduce the time wasted due to unresolved device damage, which can often disrupt student focus and concentration. When devices are functioning properly, teachers can more easily deliver material and use innovative teaching methods, while students can focus more on the learning process without worrying about technical glitches. Thus, investing in technician training is an important step towards creating an efficient and effective learning environment, where all parties can maximize the use of technology in education.

Although there are various challenges that need to be overcome in implementing AI technology in education, its potential to improve the quality of education is enormous and cannot be ignored. (Nasukah & Winarti, 2021) The Theory of Educational Transformation emphasizes that with the right support, both in terms of infrastructure and training for teachers and technicians, as well as consistent efforts to overcome existing obstacles, this technology can be an effective tool in preparing a generation of students who are ready to face an increasingly modern and complex world of work. This discussion emphasizes that strategic steps in utilizing digital technology are key to optimizing the education process, so that it can create a more interactive, relevant, and inclusive learning experience. When all elements of education teachers, students, and schools work together to integrate technology in a supportive way, we can expect to see significant improvements in the quality of learning and student achievement in the future. Therefore, it is important for all stakeholders to continue to commit to developing and implementing AI technology as an integral part of our education system.

As a step forward, it is important for all stakeholders including schools, government, parents, and the community to commit to creating an innovative and responsive educational environment. With strong collaboration and a shared vision, AI technology can be effectively integrated into the education system, so that it can provide maximum benefits for students and teachers, not only at SMK Batik 2 Surakarta, but also throughout Indonesia. Awareness of the importance of this change must be an integral part of the school culture, where every element, from teachers to students, feels responsible for contributing to creating quality education. By encouraging a culture of innovation, exploration, and adaptation to new technologies, schools can create an atmosphere that supports the development of 21st century skills. In this context, continuous training, infrastructure support, and policies that support technology must be prioritized, so that all elements of education can function synergistically. In this way, we not only prepare students for a challenging future, but also build a strong foundation for sustainable and quality education.

Finally, it is important to conduct regular evaluations of the use of technology in education so that the process of integrating technology, including AI, can take place effectively. By evaluating the effectiveness of the implementation of AI technology, schools can identify what is working and what needs to be improved, so that necessary adjustments can be made to ensure that learning objectives are achieved. This evaluation process should involve constructive feedback from teachers and students, as they are the direct users of the technology. By understanding their experiences, educational institutions can continue to adapt and innovate,

and develop better strategies to improve the quality of education provided. Through a systematic evaluative approach, schools can create a learning environment that is not only responsive, but also dynamic, where technology is used as a tool to facilitate better learning. Thus, evaluation becomes a key element in ensuring that the use of technology in education truly provides maximum benefits and contributes to the development of students who are more holistic and ready to face the challenges of the future.

CONCLUSION

This study shows that the use of digital technology, especially artificial intelligence (AI), in learning at SMK Batik 2 Surakarta has a significant positive impact on student motivation and engagement. Accounting teachers at this school feel the benefits of AI integration, which not only enriches teaching materials but also creates a more interactive and enjoyable learning experience. With a more interesting learning atmosphere, students become more active, involved, and able to master the concepts taught better. However, despite the many benefits generated, challenges such as limited infrastructure and lack of training for teachers are also obstacles that must be overcome to maximize the potential of this technology.

The success of implementing AI technology in education is highly dependent on adequate infrastructure support. Limited hardware and stable internet connections can hinder the effectiveness of technology-based learning. Therefore, it is important for schools and governments to invest in the provision of necessary facilities. In addition, comprehensive training for teachers is essential so that they can use technology with confidence. This training should not only be theoretical, but also practical, giving teachers the opportunity to directly implement what they learn in the classroom.

Suggestions that can be given to improve the effectiveness of the use of AI technology in learning are the importance of collaboration between all stakeholders, including schools, government, and the community. Synergy between these parties can create policies that support the development of educational technology and ensure the allocation of appropriate resources. In addition, periodic evaluations need to be held to monitor the progress and effectiveness of technology implementation, as well as to identify areas that need improvement. With a collaborative and evaluative approach, it is hoped that the integration of AI in education can run smoothly, provide maximum benefits for students, and prepare them to face the challenges of an increasingly complex and technology-based world of work.

REFERENCES

Ahmad, Z., Rahim, S., Zubair, M., & Abdul-Ghafar, J. (2021). Artificial intelligence (AI) in medicine, current applications and future role with special emphasis on its potential and promise in pathology: present and future impact, obstacles including costs and acceptance among pathologists, practical and philosoph. *Diagnostic Pathology*, *16*(1), 1–16. https://doi.org/10.1186/s13000-021-01085-4

Aji, B. J. P. S., Masnita, Y., & Kurniawati. (2023). The Influence of Chatbot Anthropomorphism on Trust, Intention, and Engagement of Indonesian State-Owned Bank Customers: Investigation Using the DOI Theory. *International Journal of Applied Business Research*, *2023*(2), 152–166. https://doi.org/10.35313/ijabr.v5i02.293

Ali, N., Hayati, M., Faiza, R., & Khaerah, A. (2023). Artificial Intelligence (AI) dalam Pendidikan Islam: Trends, Persepsi, dan Potensi Pelanggaran Akademik di Kalangan Mahasiswa. *INJIRE: Indonsian Journal of Islamic Religious Education*, *1*(1), 51–66. https://injire.org/index.php/journal/article/view/18

Ardiansyah, A. (2023). Pendampingan Perancangan Chatbot Sebagai Media Interaktif Dalam Menghadapi Tantangan Era Digitalisasi. *Lamahu: Jurnal Pengabdian Masyarakat Terintegrasi*, *2*(1), 44–55. https://doi.org/10.34312/ljpmt.v2i1.18078

Ardiansyah, & Sari, H. F. A. (2023). Analisis Minat Mahasiswa Dalam Menggunakan Aplikasi

Chatbot Pada Mata Kuliah Akuntansi. *Jurnal Teknodik*, *8*(2), 33–50. https://doi.org/10.32550/teknodik.vi.1009

Busro, M. (2018). *Teori-teori manajemen sumber daya manusia*. Prenada Media.

Brandtzaeg, P. B., Skjuve, M., Dysthe, K. K., & Folstad, A. (2021). When the social becomes non-human: Young people's perception of social support in chatbots. *Conference on Human Factors in Computing Systems - Proceedings*. https://doi.org/10.1145/3411764.3445318

Christanty, Z. J., & Cendana, W. (2021). Upaya guru meningkatkan keterlibatan siswa kelas K1 dalam pembelajaran synchronous. *COLLASE (Creative of Learning Students Elementary Education)*, *4*(3), 337-347.

Fidiyanti, F., Subagja, A. R., Wachyu, R. P., Madiistriyatno, H., & Jakarta, U. P. (2023). *Analisis strategi pengembangan bisnis menggunakan teknologi artificial intelegence*. *2*(7), 1994–2001.

Fitria, T. N. (2023). Artificial intelligence (AI) technology in OpenAI ChatGPT application: A review of ChatGPT in writing English essay. *Journal of English Language Teaching*, *12*(1), 44–58. http://journal.unnes.ac.id/sju/index.php/elt

Franz, A., Maria, E., Suswanto, Yulianto, Rachmadani, B., Junirianto, E., Nurhuda, A., Khamidah, I. M., Ramadhani, S., Muslimin, Beze, H., Andrea, R., Karim, S., Putra, E. R., Ramadhani, F., Satria, B., & Imron. (2023). Pelatihan Penerapan Artificial Intelligence (AI) untuk Menunjang Aktifitas Pembelajaran pada Sekolah Dasar Daarul Hijrah Al_Amin Samarind. *JLP : Jurnal Lentera Pengabdian*, *Volume 01*(04), 1–9. https://doi.org/10.59422/lp.v1i04.139

Isma, A., Rosidah, Rahman, S. S., Nasrullah, & Syam, A. S. (2023). Analisis Penggunaan Chatbot Berbasis AI pada Model Hybrid di Jurusan Teknik Informatika dan Komputer. *Journal of Vocational, Informatics and Computer Education*, *1*(2), 79–92. https://doi.org/10.61220/voice.v1i2.20239

Khozanah, H., Sutama, S., & Fuadi, D. (2020). Efektivitas pengelolaan pembelajaran MYOB accounting berbasis weblog di SMK N 1 Sragen. Jurnal VARIDIKA, 31(2), 56–61. Muhammadiyah University Press. https://doi.org/10.23917/varidika.v31i2.10219

Latifah, A., & Saputra, S. Y. (2023). Meningkatkan Hasil Belajar Siswa Kelas V dengan Pembelajaran Berdiferensiasi. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *8*(1), 5811-5818.

Maissy, R. M. (2023). Pengaruh Penerapan Model Pembelajaran Kooperatif Tipe STAD Menggunakan Media Interaktif Microsoft Sway dan Ppt Terhadap Keterampilan Kolaborasi Peserta Didik Kelas IV SD Negeri 4 Metro Utara.

Nasution, F. A., & Dar, M. H. (2022). Application Of Artificial Intelligence in Chatbot Application As Palm Oil Price Information System and Capacity On Ramp in Labuhanbatu. *Technology, and Organizational Behavior (IJBTOB)*, *2*(4), 2775–4936. https://ijbtob.org

Nguyen, D. M., Chiu, Y. T. H., & Le, H. D. (2021). Determinants of continuance intention towards banks' chatbot services in vietnam: A necessity for sustainable development. *Sustainability (Switzerland)*, *13*(14), 1–24. https://doi.org/10.3390/su13147625

Nasukah, B., & Winarti, E. (2021). Teori Transformasi dan Implikasinya pada Pengelolaan Lembaga Pendidikan Islam. *Southeast Asian Journal of Islamic Education Management*, *2*(2), 177-190.

Putrie, N. W. (2021). Eksplorasi Pengembangan E-Learning Akuntansi Terintegrasi Dari Perspektif Manajemen Pengetahuan Dan Analisis Karakteristik Inovasi: Studi Kasus Pada E-Learning SIDEK-Edu. *ABIS: Accounting and Business Information Systems Journal*, *10.3*. https://doi.org/10.22146/abis.v10i3.77563

Qotrunnida, N., Supriatna, E., & Naufal Arzaqi, R. (2023). Penggunaan Chatbot Mela terhadap Peningkatan Kemampuan Kosa Kata Bahasa Indonesia Anak di RA Darul Mu'minin.

Murhum : Jurnal Pendidikan Anak Usia Dini, *4*(1), 448–459. https://doi.org/10.37985/murhum.v4i1.241

Ruindungan, D. G. S., & Jacobus, A. (2021). Chatbot Development for an Interactive Academic Information Services using the Rasa Open Source Framework. *Jurnal Teknik Elektro Dan Komputer*, *10*(p-ISSN : 2301-8402, e-ISSN : 2685-368X ,available at: https://ejournal.unsrat.ac.id/index.php/elekdankom), 61–68.

Rahmawati, A. A., & Asmawan, M. C. (2024). Hasil belajar praktik akuntansi manufaktur ditinjau dari keaktifan belajar, kemandirian belajar, dan efektivitas pembelajaran. Didaktika: Jurnal Kependidikan, 13(2), 2131–2142. https://doi.org/10.58230/27454312.737

Sari, I. K. (2021). Blended Learning sebagai Alternatif Model Pembelajaran Inovatif di Masa Post-Pandemi di Sekolah Dasar. *Jurnal Basicedu*, *5*(Vol. 5 No. 4 (2021): August Pages 1683-3000), 2156–2163. https://jbasic.org/index.php/basicedu/article/view/1137

Sarosa, M., Wijaya, M. H., Tolle, H., & Rakhmania, A. E. (2022). Implementation of Chatbot in Online Classes using Google Classroom. *International Journal of Computing*, *21*(1), 42–51. https://doi.org/10.47839/ijc.21.1.2516

Skjuve, M., Følstad, A., Fostervold, K. I., & Brandtzaeg, P. B. (2021). My Chatbot Companion - a Study of Human-Chatbot Relationships. *International Journal of Human Computer Studies*, *149*(January). https://doi.org/10.1016/j.ijhcs.2021.102601

Sulistyanto, H., Anif, S., Sutama, S., Narimo, S., Sutopo, A., Haq, M. I., & Nasir, G. A. (2022). Education application testing perspective to empower students' higher order thinking skills related to the concept of adaptive learning media. Indonesian Journal on Learning and Advanced Education (IJOLAE), 4(3), 257–271. Universitas Muhammadiyah Surabaya. https://doi.org/10.23917/ijolae.v4i3.19432

Suparlan, S. (2019). Teori konstruktivisme dalam pembelajaran. *Islamika*, *1*(2), 79-88.

Susilo, A., Siswandari, S., & Bandi, B. (2014). Pengembangan modul berbasis pembelajaran saintifik untuk peningkatan kemampuan mencipta siswa dalam proses pembelajaran akuntansi siswa kelas XII SMA N I Slogohimo 2014. Jurnal Pendidikan Ilmu Sosial, 26(1), 50–56. https://doi.org/10.2317/jpis.v26i1.2127

Yusriadi, Y., Rusnaedi, Siregar, N. A., Megawati, S., & Sakkir, G. (2023). Implementation of artificial intelligence in Indonesia. *International Journal of Data and Network Science*, *7*(1), 283–294. https://doi.org/10.5267/j.ijdns.2022.10.005