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Evaluation of Chatbot AI Application in Accounting Learning in High Schools: Challenges and Impacts

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Abstract: This research aims to explore the implementation of AI chatbot as a learning aid in accounting subjects at SMK Batik 1 Surakarta. With a background to the need for learning innovations that can meet the expectations of the digital generation and improve learning effectiveness, the study examines the potential and challenges of the application of AI chatbots. Through a qualitative descriptive approach, the research gathers data from students, teachers, and school managers to understand the perceptions, efficiency, and obstacles in the use of AI Chatbots in accounting learning. Research results show that the use of AI chatbots can enhance learning interaction, provide real-time feedback, and tailor learning materials to suit the individual needs of students. However, challenges such as the constraints of AI's understanding of specific contexts, the need for personal interaction, as well as issues of data security and privacy are concerns to be addressed. The research also found that the training and adaptation of teachers is an important aspect of the integration of this technology into the learning process.
Keywords: Evaluation, AI Chatbot, Accounting Learning, Learning Media.

Evaluasi Penerapan AI Chatbot dalam Pembelajaran Akuntansi di Sekolah Menengah Kejuruan: Tantangan dan Dampak

Abstrak: *Penelitian ini bertujuan untuk mengeksplorasi implementasi AI chatbot sebagai alat bantu pembelajaran dalam mata pelajaran akuntansi di SMK Batik 1 Surakarta. Dengan latar belakang kebutuhan untuk inovasi pembelajaran yang dapat memenuhi ekspektasi generasi digital dan meningkatkan efektivitas pembelajaran, penelitian ini mengkaji potensi dan tantangan penerapan AI chatbot. Melalui pendekatan kualitatif deskriptif, penelitian ini mengumpulkan data dari siswa, guru, dan pengelola sekolah untuk memahami persepsi, efektivitas, dan hambatan dalam penggunaan AI chatbot dalam pembelajaran akuntansi. Hasil penelitian menunjukkan bahwa penggunaan AI chatbot dapat meningkatkan interaksi pembelajaran, memberikan umpan balik secara real-time, dan menyesuaikan materi pembelajaran sesuai dengan kebutuhan individu siswa. Namun, tantangan seperti keterbatasan pemahaman konteks spesifik oleh AI, kebutuhan akan interaksi personal, serta isu keamanan dan privasi data menjadi perhatian yang harus ditangani. Penelitian ini juga menemukan bahwa pelatihan dan adaptasi bagi guru merupakan aspek penting untuk integrasi teknologi ini dalam proses pembelajaran.*
Kata Kunci: *Evaluasi, AI* Chatbot*, Pembelajaran Akuntansi, Media Pembelajaran.*

1. Introduction

The 21st century has witnessed significant advancements and advancements in technology. Undoubtedly, these technical advancements are prevalent throughout various domains. Technology is employed in the realm of education to enhance the quality and proficiency of human resources across several domains (Santoso, 2022).

Technology plays a pivotal role in facilitating the sustenance and enhancement of human existence. In the 21st century, educators must possess the ability to develop innovative learning material using new technologies that facilitate learning processes (Rahman & Eitedal, 2020).

Artificial Intelligence (AI) encompasses a diverse array of technologies that facilitate the acquisition of human-like learning and cognitive abilities by computers. The primary aim of AI is to develop systems capable of autonomously executing intelligent tasks, thereby reducing the need for human intervention. Additionally, AI endeavors to enhance efficiency and productivity

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across multiple domains, including but not limited to medicine, automotive, finance, and education. Technology in education can assist educators in implementing learning and offer sufficient resources for pupils(Dirko G. S. Ruindungan, 2021).

The expeditious advancement of technology presents a multitude of prospects and obstacles within the realm of education (Ali et al., 2023). One notable area of growth involves the utilization of technology to facilitate enhanced cooperation between educators and students. Technology enables the implementation of online learning, which has the potential to enhance the accessibility of education, particularly for students who face constraints related to geography, physical abilities, or other factors (Erstad & Voogt, 2013).

In addition to the myriad of options that exist, educators are confronted with the formidable task of comprehending and effectively incorporating technology within the realm of education. Amidst the ever-evolving landscape of technology, the proficiency of teachers in digital skills has become indispensable (Brandtzaeg et al., 2021). To do this, an educator must ascertain the optimal approach to utilizing technology in instruction to augment the learning of students, a task that has gained significant importance (Yusriadi et al., 2023)

The field of education is undergoing a substantial shift in the current era, which is heavily impacted by AI technology. The integration of artificial intelligence (AI) in education has the capacity to revolutionize instructional frameworks, enhance productivity, and offer a more individualized learning encounter (Sarosa et al., 2022). Despite the considerable potential it holds, there exist inquiries and apprehensions regarding its effects, encompassing both advantageous and detrimental aspects. Indonesia faces a unique difficulty in effectively integrating its education system to effectively harness its diversified potential (Skjuve et al., 2021)

The emergence of AI has introduced novel routines in the lives of students, although apprehensions occur due to a deficiency in comprehension. It is imperative for students to comprehend the significance of artificial intelligence (AI) and its potential ramifications, particularly in regards to the displacement of creative endeavors such as written compositions and scientific literature (Qotrunnida et al., 2023). Given the importance of critical thinking abilities that are in line with discourse analysis, it is anticipated that this approach can contribute to comprehending learning that is suitable for the current era, particularly in high school education (Annafi Franz et al., 2023).

In the present era of digitalization, the incorporation of technology into the educational setting is not merely a choice, but a must in order to equip students for the forthcoming obstacles. As an educational institution dedicated to fostering innovation and enhancing the quality of learning, SMK Batik 1 Surakarta is contemplating the implementation of an AI chatbot as a supplementary tool in the realm of accounting education.

SMK Batik 1 Surakarta is confronted with the task of persistently innovating its educational process in order to enhance learning methods and capitalize on technology advancements. Due to their intricate nature and requirement for comprehensive comprehension, accounting disciplines have emerged as a domain that necessitates significant educational innovation. Within this particular framework, the utilization of an AI chatbot as an educational tool emerges as a highly favorable alternative.

The rationale behind this endeavor arises from the necessity to offer enhanced flexibility and interactivity in educational opportunities for students. AI chatbots possess the capability to respond to inquiries, deliver instruction, and customize educational resources to suit the specific requirements of students, hence presenting prospects for establishing a more interactive and tailored learning atmosphere (Gultom, 2024).

Moreover, the proliferation of information and communication technology has had a profound impact on the manner in which students acquire information and engage in the learning process. The contemporary cohort of students, who possess a strong familiarity with digital technology, necessitate a learning method that is both dynamic and interactive in order to align with their expectations and preferred modes of learning. Hence, the incorporation of AI chatbots in education is believed to close these disparities and enhance learners' motivation and engagement in the learning process.

Nevertheless, despite its immense promise, the deployment of AI faces other hurdles, including the creation of appropriate educational resources, technological considerations associated with AI usage, and concerns around data security and privacy. SMK Batik 1 Surakarta intends to incorporate an AI chatbot into its accounting curriculum as a progressive measure to enhance the educational standard and equip its students with future-relevant abilities.

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2. Research Methods

The investigators employ a qualitative methodology to gather data pertaining to the observed events. And employing specialized research designs for study purposes. The data collection process involves conducting interviews with teachers and directly observing the school environment (Abdussamad, 2021).

The study was carried out at Batik 1 Surakarta SMK, located in Sukoharjo, Central Java, during the month of February in the year 2024. The initial method of data collecting, known as Observation Use of Observations, involves the direct observation of multiple facets pertaining to the utilization of artificial intelligence (AI) in the context of accounting education at SMK Batik 1 Surakarta. This encompasses the participation of accounting educators and students who serve as the subjects of the study. Furthermore, the interview was carried out utilizing pre-established research instruments that specifically addressed inquiries pertaining to the influence and perspective of accounting educators in the use of AI Chatbot technology at SMK Batik 1 Surakarta. Thirdly, documentation data serves as a supplementary source of information to complement data acquired through observations and interviews. This document comprises photographs, films, and audio recordings. Within the framework of this study, the document serves the purpose of documenting data.

The study employs many data analysis approaches, including data reduction (Abdussamad, 2021). Data reduction involves a comprehensive examination of all acquired data, which encompasses interviews, observations, and documentation pertaining to the risks, obstacles, and prudent applications of artificial intelligence in the field of education. Furthermore, data presentation involves the concise representation of information pertaining to the risks, challenges, and more prudent utilization of artificial intelligence in the field of education. Furthermore, conclusion drawings represent novel findings that have not been previously identified regarding the hazards, difficulties, and extensive use of AI in the field of education.

3. Results and Discussion

AI Chatbot is an artificial intelligence-based virtual assistant that engages with users and offers the information or assistance they need. In education, chatbots have the potential to offer help to students in a variety of academic domains (Afrita, 2023).

Artificial intelligence facilitates personalized learning through the collection and analysis of data related to each student's unique interests, needs, and learning habits. Artificial Intelligence systems have the ability to recognize student learning patterns and offer customized learning content, resources, and methodologies that align with the different attributes of each student. It improves learning effectiveness and ensures that learners receive relevant and stimulating learning experiences (Andika Isma et al., 2023).

Through the use of artificial intelligence and adaptive learning, learning systems can automatically adjust by tracking and evaluating student performance. Artificial intelligence (AI) systems are able to identify students' challenges and offer relevant additional material or exercises to help them overcome obstacles. This allows learning to be tailored to the unique needs of each student. Tests and tasks completed by students can also be automatically evaluated by artificial intelligence. Artificial intelligence (AI) systems can quickly and reliably generate evaluation findings, verify student responses, and offer insightful comments. This reduces the workload for teachers involved in assessment and allows them to provide more in-depth and thorough feedback to users (Ardiansyah, 2023).

Based on the theory above, it was revealed that Chatbot AI could potentially offer help to students in various fields of education, in accordance with the results of interviews, students' perceptions of AI Chatbot in learning include:

Accessibility and Availability: Students at SMK Batik 1 Surakarta welcome the use of AI Chatbot in accounting learning as it provides significant accessibility. Chatbots are available 24/7, allowing students to study and complete tasks outside of school hours. They feel no longer limited by time and place, so they can organize their study time more flexibly according to their needs.

Understanding the Subject: Many students feel that Chatbot AI is very helpful in understanding complex accounting concepts. Chatbots provide easy-to-understand and accessible explanations repeatedly until the student really understands the material. In addition, chatbots provide topic training with live feedback, which helps students strengthen their understanding and identify areas that need improvement.

Learning motivation: Students feel more motivated to learn because chatbots offer an interactive and exciting way of learning. They feel more independent in the learning process,

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because they can ask questions at any time without being ashamed or afraid. The topic training provided by the chatbots also gives them more confidence in preparing themselves for the test.

Interaction and Engagement: The use of AI Chatbot increases student engagement in the learning process. Students feel that they can be more active in asking and searching for information. Chatbots provide a responsive learning environment, where their questions are answered instantly. This makes students more engaged and responsible for their own learning process.

In addition to the students' perceptions above, the researchers also obtained information from the results of interviews with informants related to the teacher's perception of the use of AI in learning Accounting in class X of the major Financial and Institutional Accounting (AKL) including:

Teaching Efficiency: Teachers at SMK Batik 1 Surakarta see AI Chatbot as a tool that improves their teaching efficiency. With chatbots, frequently asked questions by students can be answered automatically, saving time that can be allocated to more complex teaching activities. Teachers no longer need to repeat basic explanations constantly, so they can focus on more difficult concepts and deeper discussions in the classroom.

Improved Learning Outcomes: Teachers report improved learning outcomes for students who use Chatbot AI on a regular basis. Students become more independent in learning, using chatbots to strengthen their understanding of the material taught in the classroom. Chatbots provide question training and instant feedback, which helps students quickly identify and correct their mistakes.

Workload Reduction: The use of AI Chatbot also has a positive impact on teacher workload. Chatbot takes over routine tasks such as answering basic questions and providing topic training, so that teachers can focus more on teaching and developing learning materials. It also provides an opportunity for teachers to give more attention to students who need additional guidance.

Professional Development: The application of Chatbot AI motivates teachers to continue to develop their technological skills. Teachers are required to stay up to date with developments in educational technology and integrate AI Chatbot into their teaching methods.

The application of AI Chatbot in accounting education at Batik 1 Surakarta SMK has several important effects, including both beneficial and potentially adverse outcomes. Below is a comprehensive explanation of the consequences based on findings in the field including:

Enhanced Availability of Educational Resources: AI Chatbot allows students to easily access educational information at any time and from any location. These resources have proven to be very useful for students who may experience time constraints or have restrictions in attending face-to-face educational sessions.

Personalized learning: The AI Chatbot has the ability to customize the learning material to suit the needs and learning speed of each student. This approach facilitates a personalised learning experience, thereby enhancing the student's understanding of accounting.

Enhanced Learning Interaction: By leveraging the questions and responses generated by AI, learners can engage in more dynamic interactions during the learning process. Chatbots provide the ability to provide direct feedback, answer questions, and manage topic-specific exercises, thus increasing student engagement.

Teacher time efficiency: Can be enhanced with the use of chatbots, which can bear certain teaching responsibilities, such as dealing with routine questions from students or delivering specific instruction on topics. It gives educators extra time to concentrate on educational tasks that require genuine interpersonal involvement.

In addition to the positive impact offered by AI Chatbot in learning Accounting on SMK Batik 1 Surakarta of course in his opinion there are also negative impacts.

Technology dependence: Excessive use of chatbots in education can cause students to become heavily dependent on technology, thereby reducing their ability to find and analyze information independently.

Inadequate Human Connections: Although AI has the ability to provide fast experiences, AI is unable to replace the importance of human relationships, especially in relation to vital social and emotional learning that is vital for student growth.

Privacy and Data Security Issues: The use of technology, including AI chatbots, requires the collection and analysis of student personal data, which raises concerns about privacy and data security.

Error or AI bias: Chatbots can generate errors or display bias in the delivery of accounting learning materials, depending on how they are programmed and the data used to train AI.

To optimize the beneficial effects and reduce the adverse effects, SMK Batik 1 Surakarta can

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implement a balanced approach when using AI chatbots into the curriculum of accounting education. This includes giving instructions to educators and students about the careful use of technology, along with routine evaluations and modifications of the material and instructional approaches used by chatbots.

The perception of students and teachers about the use of Chatbot AI in learning Accounting at Batik 1 Surakarta SMK is generally positive, with many benefits felt in terms of material understanding, learning motivation, and teaching efficiency. However, there are some obstacles to overcome, such as technical issues, the need for in-depth explanation, and the importance ofining personal interaction in the learning process. Additional support and training can help to optimize the application of AI Chatbot in learning in particular accounting learning at SMK Batik 1 Surakarta on class X of the Financial and Institutional Accounting program (AKL).

4. Conclusions and Suggestions

In the context of accounting education at SMK Batik 1 Surakarta, the integration of AI chatbots has good and bad potential in its application. The perception of students about the use of AI Chatbot in learning Accounting at Batik 1 Surakarta SMK is generally positive. They appreciate ease of access, time flexibility, and help in understanding complex material. Students feel more motivated and engaged in the learning process. However, the technical constraints and the lack of personal interaction with the teacher remained a challenge. With the right support to tackle technical problems and integrate the use of chatbots with adequate teacher interaction, AI Chatbot can be a very effective tool in improving the quality of learning.

The teacher's perception of the use of Chatbot AI in accounting learning at Batik 1 Surakarta SMK as a whole has also received a positive response. AI Chatbot is considered to be a tool that improves teaching efficiency, helps improve student learning outcomes, and reduces the workload of teachers. However, there are some obstacles to overcome, including potential reductions in personal interaction and technical challenges. With the right support, such as training and improved technology access, Chatbot AI applications can be optimized to deliver maximum benefit in the learning process.

To overcome these difficulties, it is essential to adopt a comprehensive approach that includes the creation of appropriate educational materials, educators training, provision of adequate technical assistance, and enforcement of strict privacy protocols. By adopting the right methodology, the AI chatbot has the potential to serve as an instrument that helps in improving the learning experience of accounting students at SMK Batik 1 Surakarta. This approach not only supplies them with academic information but also equips them with the skills needed to thrive in the ever-expanding digital landscape.

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