

## **Digital Transformation: A Qualitative Study on the Impact of Artificial Intelligence (AI)-Based Learning Media on Accounting Learning Motivation of Gen Z Students in Vocational High Schools**

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### **KEYWORDS**

Artificial Intelligence, Accounting Education, Learning Motivation, Gen Z, Qualitative

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### **ABSTRACT**

Generation Z students, as digital natives, possess unique learning characteristics that are heavily reliant on technology. However, accounting is often perceived as a rigid and monotonous subject in vocational education. The integration of Artificial Intelligence (AI) into learning media offers a new level of personalization and interactivity that has the potential to reshape student motivation. This research employs a descriptive qualitative approach. Data were collected through in-depth interviews and classroom observations. The data analysis followed the Miles and Huberman model, facilitated by ATLAS.ti software to ensure systematic coding and network analysis. The results indicate that AI-based tools enhance students' intrinsic motivation by providing instant feedback and reducing academic anxiety. AI acts as a "learning assistant" that boosts Gen Z students' self-confidence, as they perceive their skills to be more aligned with the demands of the modern accounting industry (Accounting 4.0). AI-based learning media effectively enhance Gen Z students' learning motivation by functioning as an adaptive "learning assistant" that provides personalized, instant feedback and reduces psychological barriers. The integration of AI in vocational accounting education is recommended not as a substitute for teachers, but as an instructional partner to create more engaging and relevant learning experiences for the digital generation.

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## **INTRODUCTION**

The era of digital transformation has disrupted the fundamentals of vocational education, especially in the competence of accounting skills in vocational schools. Generation Z students, who are digital natives, have a cognitive style that demands interactivity and instant satisfaction in learning. However, conventional accounting learning is often caught in a rigid pattern that triggers a decline in learning motivation. The presence of Artificial Intelligence (AI) offers a new paradigm as an adaptive learning medium, but its application in the context of the psychological motivation of vocational school students is still rarely explored in depth.

The vocational education landscape in Indonesia is currently at a massive digital transformation crossroads. Amidst the wave of Industry 4.0, the discipline of accounting is no longer only relying on manual record-keeping, but has shifted towards automation and advanced

data analysis. However, real challenges arise in the classrooms of Vocational High Schools (SMK). Many accounting students from Generation Z (Gen Z) still view this subject as a dull cognitive burden due to its procedural and rigid nature. This phenomenon often results in a decrease in learning motivation, which impacts the low mastery of basic accounting competencies.

As digital natives, Gen Z has unique characteristics in processing information; they tend to prefer instant, visual, and personalised interactions. The gap between students' dynamic learning styles and conventional learning media creates significant psychological barriers. It is in this context that the presence of Artificial Intelligence (AI) offers a new paradigm. AI-based learning media, from educational chatbots to adaptive accounting software, not only serve as technical tools, but also as catalysts capable of personalising the learning experience according to the pace and needs of each student.

Theoretically, the integration of AI in accounting education is believed to reduce the complexity of material that has been considered daunting. Through the instant feedback feature, AI provides space for students to explore without fear of judgment. This is crucial in building students' intrinsic motivation, where they feel they have full control over the learning process (learner autonomy). In addition, mastery of AI technology since school provides extra confidence for vocational school students regarding the relevance of their skills to the needs of the future industry (Accounting 4.0).

Several previous studies have examined the impact of AI-based learning media on student motivation and learning outcomes. Research conducted by (Chiu, 2021) explored digital support for student engagement in blended learning based on self-determination theory, finding that technology-mediated learning environments can enhance students' intrinsic motivation by satisfying their basic psychological needs for autonomy, competence, and relatedness. This study provides a theoretical foundation for understanding how AI tools can foster motivation through personalised and responsive learning experiences.

Zheng et al. (2024) investigated the impact of AI-driven personalised learning on student motivation and academic self-efficacy. Their research demonstrated that AI-powered learning systems significantly improve students' motivation by providing adaptive feedback and customised learning paths that align with individual learning styles and paces. The study highlighted that instant feedback mechanisms in AI systems reduce student anxiety and increase their confidence in tackling complex academic tasks (Academic, 2024).

In the Indonesian context, Darmansyah and (Munir, 2025) conducted a systematic literature review on artificial intelligence in accounting education for vocational schools. Their review revealed that while AI adoption in Indonesian vocational education is still in its early stages, emerging evidence suggests that AI-based learning tools have the potential to transform accounting education by making abstract concepts more concrete and engaging for students. Similarly, (Puspitasari and Wahyuni, 2025) examined the digital transformation of vocational schools and the influence of AI media on Gen Z students' learning motivation, finding that students who regularly use AI tools demonstrate higher levels of engagement and persistence in learning accounting.

(Ardelia et al., 2025) specifically investigated the impact of artificial intelligence on student learning motivation in accounting education. Their quantitative study found a significant positive

correlation between the frequency of AI tool usage and students' intrinsic motivation, particularly in mastering complex accounting cycle materials. (Amanatullah, 2025) explored the impact of AI-based learning tools on student motivation and academic self-concept, concluding that AI tools serve as "learning assistants" that boost students' self-efficacy by providing immediate, non-judgmental feedback.

(Nguyen, 2025) examined AI adoption from the perspective of accounting students, revealing that students perceive AI tools as bridges connecting theoretical knowledge with practical industry applications. (Saharsini and Saputra, 2025) analysed the utilisation of artificial intelligence in learning from the perspective of Gen Z students, finding that students value AI tools for their efficiency and ability to provide instant clarification on difficult concepts. (Susanyah et al., 2025) focused on the utilisation of AI to improve the effectiveness of accounting learning, demonstrating that AI integration leads to better comprehension of accounting principles and increased student engagement.

Haried and Ramamurthy, (2024) investigated artificial intelligence in accounting education from the perspective of perceptions and readiness of the digital generation. Their research highlighted that Gen Z students show high readiness and positive attitudes toward AI integration in their learning, viewing these technologies as essential preparation for their future careers in Accounting 4.0. (Wulandari and Fitrianiingsih, 2024) examined Accounting 4.0 with competency enhancement through AI training for vocational school students, emphasising the importance of equipping students with AI literacy to meet evolving industry demands.

Despite these valuable contributions, most previous studies have employed quantitative approaches focusing on measurable learning outcomes or technical aspects of AI tool usage. There remains a significant gap in qualitative research that deeply explores the psychological and motivational impacts of AI-based learning media from the perspective of Gen Z vocational students' direct experiences, emotions, and perceptions. This study aims to fill that gap by qualitatively analysing how AI-based learning media influences the intrinsic and extrinsic learning motivation of Gen Z students and exploring their perception of the relevance of these technologies in the Accounting 4.0 profession.

Based on this background, the purpose of this study is to qualitatively analyse the influence of AI-based learning media on the intrinsic and extrinsic learning motivation of Gen Z students and explore their perception of the relevance of these technologies in the Accounting 4.0 profession. The scope of this study is focused on students' psychological interactions with AI tools and how these technologies mitigate learning barriers related to complex accounting cycle materials. By understanding the perceptions, emotions, and direct experiences of students, this study is expected to make a theoretical contribution to the development of more adaptive and relevant instructional strategies in the digital age.

## **MATERIALS AND METHODS**

This research used a qualitative approach with an analytical descriptive method. This approach was chosen to deeply understand the phenomenon of student learning motivation through the subject's perspective, emotions, and direct experience when interacting with Artificial Intelligence (AI)-based learning media. Qualitative research allows researchers to capture nuances of behavior that cannot be quantitatively measured, especially regarding how AI technology changes the mindset of vocational school students towards accounting disciplines that have been considered rigid.

Research was carried out at SMK Muhammadiyah2 Karanganyar in the Department of Accounting and Institutional Finance. The research subjects consist of Generation Z students who are taking digital-based accounting subjects. The selection of informants was carried out using purposive sampling techniques, where the main criterion is students who actively use AI-based learning media in their curriculum. In addition, accounting subject teachers are involved as additional informants to provide triangulation data on changes in student learning behavior in the classroom.

Primary data was collected through three main techniques:

1. In-depth Interview: Conducted in a semi-structured manner to explore students' intrinsic and extrinsic motivational aspects and their perceptions of AI.
2. Participatory Observation: The researcher directly observed students' interaction with AI devices in the accounting laboratory to record affective responses and technical constraints that arose.
3. Documentation Study: Includes the results of student learning reflection and a portfolio of assignments generated through the help of AI media as supporting data.
4. Data Analysis Using ATLAS.ti: The data analysis process is carried out systematically with the help of ATLAS.ti software.

The analysis steps include:

- 1) Data Condensation Stage: Interview transcripts and field notes are uploaded into the system for open coding (labeling of relevant data units).
- 2) Coding Scheme: The codes that emerge are grouped into large categories (super-codes) such as "Affective Response to AI", "Learning Barriers", and "Self-Efficacy".
- 3) Network View: Researchers used the network feature on ATLAS.ti to visualize the relationship between concepts, such as how the instant feedback feature in AI correlates with a decrease in students' anxiety levels.
- 4) Drawing Conclusions: Data that has been mapped in the network is interpreted to build a narrative that answers the formulation of the problem.

To ensure the validity and reliability of the research, the researcher applied source triangulation and triangulation techniques. Source triangulation is carried out by comparing data from students with data from teachers, while technical triangulation is carried out by matching the results of interviews with findings during class observation. The use of ATLAS.ti in this process also serves as an audit trail, allowing an outside party to retrace the analysis process from the raw data to the conclusion.

## RESULTS AND DISCUSSIONS

### Determination of the Number of Respondents (Informants)

In qualitative research, the principle of Data Saturation (Data Saaturation).

Teacher: 1 person (as a key informant/triangulation).

Students: For a total population of 94 students, take 8 to 12 students as informants.

Sampling Technique: Use Purposive Sampling. Choose students with a variety of abilities (high, medium, low) or the most active/passive use of AI to make the data rich and diverse to compare on ATLAS.ti.

### Interview Guide

This question is designed so that students' answers can be directly grouped into codes on ATLAS.ti.

**Table 1.** Interview Guide and Coding Objectives

<b>Problem Formulation</b>	<b>Interview Questions (Students)</b>	<b>Coding Objectives (ATLAS.ti)</b>
<b>Interaction Experience</b>	"How did you feel when you first used AI to work on an accounting journal compared to the manual way?"	<i>Initial Emotion, User Experience</i>
<b>Motivational Transformation</b>	"What makes you want to continue practicing the questions while using the AI application?"	<i>Intrinsic Motivation, Engagement</i>
<b>Feature Mechanism (Feedback)</b>	"When you input the wrong balance, how does the AI respond? How do you feel when the AI corrects it right away?"	<i>Instant Feedback, Anxiety Reduction</i>
<b>Career Readiness (Accounting 4.0)</b>	"After trying this AI, do you feel more confident to work in a modern accounting firm later? Why?"	<i>Self-Efficacy, Future Career Readiness</i>

Source: Research Instrument Design, 2025

Findings show that students feel more confident when using AI as a "discussion friends" to solve complicated debit-credit logic. AI removes psychological barriers in the form of "fear of being wrong" that students often experience when dealing directly with teachers.

Learning motivation increases as AI provides instant feedback. Gen Z values efficiency; When they were able to correct the common journal's mistakes right then and there without waiting for next week's meeting, their curiosity was restored. However, the study also found the risk of dependency if teachers did not provide clear boundaries regarding the basic logic of accounting.

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The network analysis visualized in Figure 1 shows the complex relationships between key concepts identified in the study. The instant feedback feature of AI directly correlates with reduced student anxiety, which in turn positively influences intrinsic motivation. Students' self-efficacy is strengthened through repeated successful interactions with AI tools, and this increased confidence contributes to their perception of readiness for the Accounting 4.0 profession. However, the analysis also revealed a potential risk of dependency, where students might rely too heavily on AI without fully understanding the underlying accounting logic.

The findings align with Self-Determination Theory (Ryan & Deci, 2017), which posits that autonomy, competence, and relatedness are basic psychological needs that, when satisfied, enhance intrinsic motivation. AI-based learning media satisfies the need for autonomy by allowing students to learn at their own pace, competence through instant feedback that confirms correct understanding, and relatedness through the AI's role as a non-judgmental "learning assistant."

Compared to previous studies, these findings are consistent with (Zheng et al., 2024), who found that AI-driven personalized learning significantly improves student motivation. However, this study provides deeper qualitative insights into the emotional and psychological mechanisms underlying this motivation enhancement, particularly the role of AI in reducing the "fear of being wrong" that is prevalent in traditional accounting education settings.

## **CONCLUSION**

This study concludes that the integration of AI-based learning media significantly transforms the learning motivation of Gen Z students in vocational schools, as revealed through qualitative analysis using ATLAS.ti software. Rather than functioning merely as an automated calculation tool, AI operates as a "psychological catalyst" that reduces academic anxiety through instant feedback, cultivates intrinsic motivation by fostering students' sense of autonomy and competence, and strengthens extrinsic motivation by providing a tangible preview of the Accounting 4.0 professional ecosystem. Practically, schools are advised to adopt AI not as a replacement for teachers, but as an instructional partner that personalises and enriches the learning experience for the digital generation. Future research could expand on these findings by employing a mixed-methods or longitudinal approach across multiple vocational schools in Indonesia, allowing for a broader and more generalisable examination of how sustained AI integration shapes both motivational trajectories and actual competency outcomes in accounting education over time.

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