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Transforming Management Education through Artificial Intelligence: Opportunities, Challenges, and Implications

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Abstract: The study explores the role of Artificial Intelligence in influencing the learning and teaching process in business schools by through quantitative technique of Interpretive Phenomenological Analysis. The outcome shows that analytical capabilities and making of decisions are enhanced through AI. However, it also develops doubts about superficial engagement, cognitive dependency, and ethical ambiguity. The paper advocates the requirement of using AI in a manner where it acts as a catalyst to management learning by enhancing critical thinking.

***Keywords*:** *artificial intelligence, cognitive dependency, decision-making, ethics, management education, pedagogy*

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[1]. INTRODUCTION

Slowly and steadily, AI is dominating the teaching and learning in business schools. Its use may be debatable but it is certain that no business school can thrive without its use. Undoubtedly it has made information available on the fingertips. Both teachers and students can get the any information through a single prompt (Brynjolfsson & McAfee, 2017; Dwivedi et al., 2023). AI is used to develop higher-order managerial competencies such as problem-solving, predictive analysis, and scenario planning. The business education is highly related with the actual happenings in the world, by using AI the gap between the real world scenarios and classroom teaching can be reduced to a great extent through AI-driven simulations, adaptive learning platforms, and automated feedback systems. This in turn improves engagement of business students and enhance their decision-making (George et al., 2021; Luckin et al., 2022). Moreover, AI provides support in analyzing large scale data of the learners which supports the educators to provide customized interventions so that their learning is as per the expectations of the industry

However, AI is a double edged sword for management education as its integration raises ethical and pedagogical concerns. Without doubt AI can enhance learning efficiency, there is a rising apprehension that excessive dependency on algorithmic support may dilute important managerial attributes such as ethical judgment, critical thinking, and reflective decision-making. Particularly, generative AI puts originality, authenticity, and cognitive engagement under doubt. It occurs because students become over dependent on automated outputs rather than engaging in deep analytical reasoning (Floridi et al., 2018; Mollick, 2024). It creates a fundamental question, can we consider AI as an enabler of intellectual growth or a substitute for cognitive effort?

In management education it is more important as it is more related to identification of problems and devising solutions. Since the introduction of AI, it has motivated the researchers to focus the implication of AI in higher education. Even though the literature on the subject has grown but specific focus on management and emerging economies is limited. Specifically in the business school (Dwivedi et al., 2023; Ransbotham et al., 2020). Existing studies explores adoption of technology and its outcome in isolation without bringing out their over-dependence and skill development. To address this gap this quantitative study explores within management education settings the relationship between AI usage, student engagement, and learning outcomes.by conducting a structured survey of the students of management colleges and the professors involved in teaching, the study identifies whether AI integration enhances engagement and academic performance. It also explores the dependency perception and its impact on the skill formation.

2. LITERATURE REVIEW

Since the introduction of business schools where art of management was transpired, case based pedagogy was essential just like law and medical science. But today rather than exploring going through different business cases and brainstorming them, the students are dependent on the AI to identify, create, analyses , synthesis and project the cases (Kolbjørnsrud et al., 2017; Luckin et al., 2022). AI makes the learning is more customized, which makes it more adaptive. It generates interest and loop of learning. As

it is more accessible learners find it more convenient and engaging (OECD, 2021; Strielkowski et al., 2022). In business schools collection of data and information is very important. Based on this the mangers develops strategies and take decisions (Simon, 1976; Kahneman, 2011). AI is an influential tool in this regards as it analyses the data and provide strategies along with the recommendations (Orlikowski, 1992; Bostrom & Heinen, 1977). Present research claims that AI acts as a motivator and at time a detrimental factor to achieve learning objectives of the management education. Brynjolfsson & McAfee (2017) claim that the efficiency of business students increases in analysis and interpretation which furthers second by Wilson and Daughtery (2018) confirming that it helps them to make decisions. However Mollick 2024 acertained that real world management is subjective and circumstantial, and cannot be analyzed by AI. The literature identifies cognitive dependency as one of the important danger associated with AI in management education as critical thinking is missing. (Carr, 2010; Bennett et al., 2020). Privacy of data and lack of transparency further aggravate the situation (Floridi et al., 2018; O'Neil, 2016). Accessibility of quality management education at remote areas is an advantage of AI (World Bank, 2022) but technical readiness and infrastructure will remain as a challenge (UNESCO, 2023; Joshi, et al., 2020). Most of the research on the selected topic dwindles on short period (Dwivedi et al., 2023) and discusses management education only in developed economies. Moreover, ethics which is an important concept of management education is not explored in depth.

3. METHODOLOGY

Interpretive Phenomenological Analysis (IPA) is used to conduct this study as management education is dynamic and a personalized activity, the technique is best suited. (Smith et al., 2009). 20 participants were shortlisted through purposive sampling from the following population in Jakarta's management college:

- Undergraduate and postgraduate management students (e.g., BBA/MBA)
- Faculty members who actively integrate AI tools into their teaching

In depth semi structured interviews for 50 to 60 minutes were conducted on the following areas:

- Experiences of using AI tools in learning and teaching
- Perceived impact on decision-making and problem-solving
- Feelings of dependency or autonomy when using AI
- Ethical and academic concerns related to AI usage

Interviews were conducted either face-to-face or through online platforms. Before taking the interview consent from the participant was taken.to maintain accuracy and proper analysis all interviews were recorded and transcribed verbatim to ensure accuracy. the stages involved in the analysis were based on the following criteria(Lincoln & Guba, 1985):

- Credibility: Achieved through prolonged engagement with the data and validation of interpretations where possible
- Dependability: Ensured by maintaining a clear and transparent record of the research process
- Confirmability: Supported through reflexive practices to minimise researcher bias

4. RESULTS AND FINDINGS

4.1. AI as a Cognitive Enhancer

Cognitive enhancer was identified as the most important theme. Which influences understanding and efficiency. The participants claimed that AI helps them to structure their thoughts and learning activities. One participant stated ' AI is a boon for me. I am able to structure my answers, refine the language and can solve multiple questions at one time'. Professors teaching in management also agreed that with help of AI students are able to address the higher level of questions.

4.2. Decision-Making and Problem-Solving Processes

Decision making was another theme that erupted after the analysis. Many of the participants agreed on that AI has expanded their thinking process as it provides them many solutions and options. Thus the thought process has transited from single options to multi options. Tools of AI proves to be handy when looking for alternatives and during evaluation of the decisions. One participant student elaborated, *"I* look for many alternatives using AI before concluding on one option. After each answer, I find a question from the answer thus leading to a continuous and related discussion. I don't follow only one idea but keep striving for best alternatives."

4.3. Emergence of Cognitive Dependency

The discussion revealed that there was a doubt on the over dependency on AI for every action that the teachers and students in the business school are taking. They agreed on its importance but had a serious submission of over reliance on it. According to a

participant, '*as soon as I am delegated any work which could be as simple as writing a leave application i will ask the ChatGPT to do it. I am so much dependent on the AI that I don't prepare for anything, earlier I use to read a lot to make myself acquit of the knowledge, frankly speaking now I just type a prompt and get all my assignments and work completed, all I have to do is cut, copy paste.*' The cognitive dependency was common for both students and teachers, even-though they realize that in management critical and individual thinking is of prime importance, they continue to use AI exclusively.

4.4. Ethical Ambiguity and Academic Integrity

Inappropriate use of AI was a common phenomenon which was agreed by both business students and faculty. Having no boundaries and control the AI can be used to a great extent. One participating faculty member responded, '*initially I was reluctant to use AI for my daily work, but soon I realized I could shelve my work and delegate to AI, and it could do it in a blink of a second. Today, all my assignments are created by AI, all my evaluations, feedback on students and review of scholarly work is done by AI.*' Similar issues were transpired by the students. This theme clearly signified that ethical concern is deep rooted while using AI in management education.

4.5. Personalization and Engagement in Learning

All the participants under study unanimously agreed that while using AI they felt engaged as they would receive instant feedback. From general approach they experienced personalization while using the AI. A Participating student shared that, '*in marketing classroom many times it had happened we were unable to pose questions either due to lack of time or because of self-consciousness as I was not sure whether the question is correct. Moreover rebuttal in the classroom is also not possible. These problems are eluded when using AI to satisfy my queries. I can ask question numerous times without being judged.'* It proves that AI was engaging and customized as per the need of the stakeholders of management education.

4.6. Redefinition of the Role of Educators

AI in management education has demanded to redefine the role of educators. They were earlier lecturers but now they are required to be facilitators. One faculty member briefed, '*we don't carry books in the classroom, each topic with elaborated and consolidated also is available with the management students.so now our role does not demand us to stop asking the students from using the AI, rather our role is to teach them how to use AI in business education ethically and effectively.'* The analysis brought out that it is utmost the need for the educators to redefine their approach, interaction and pedagogy.

5. DISCUSSION

5.1. AI as a Driver of Augmented Learning and Cognitive Extension

According to the research AI serves as a cognitive extension that helps student's process vast amounts of data more effectively and systematically. This is consistent with the notion that by serving as external support systems digital technologies can increase human cognitive capacity (Jarrahi 2018 Raisch and Krakowski 2021). This ability is especially useful in management education where students must deal with ambiguity uncertainty and complicated datasets. AI frees up learners to concentrate more on interpretation and strategic thinking by cutting down on the amount of time spent on routine processing. But this change also adds a subtle tension. Although efficiency increases there is a chance that the level of engagement may be compromised which raises significant concerns about whether quicker learning always results in greater comprehension

5.2. Reconfiguration of Managerial Decision-Making

Making every other essential perception is the transformation of decision-making techniques. Individuals defined shifting toward an extra iterative, AI-supported technique, in which choices are refined through more than one rounds of interplay with AI gear. This remark is regular with research suggesting that AI reshapes selection environments via introducing state of affairs-primarily based reasoning and probabilistic wondering (Shrestha et al., 2019). Rather than depending entirely on inner judgment, freshmen more and more interact in human–AI collaboration, wherein ideas are generated, examined, and subtle in partnership with generation. whilst this expands the scope of evaluation, it also increases concerns about the capacity decline of intuitive judgment, which remains a critical factor of managerial information. The findings therefore recommend that AI is not only changing how decisions are made but additionally redefining what constitutes effective decision-making in management contexts

5.3. Cognitive Dependency and the Paradox of Convenience

Participants unanimously agreed that whilst AI makes responsibilities less complicated and quicker, it is able to also lead to over-reliance. This reflects what has been defined within the literature as "automation bias," wherein people generally tend to location immoderate accept as true with in algorithmic outputs (Logg et al., 2019). Within the context of control education, this creates a paradox. The same tools that enhance productiveness might also lessen the want for independent questioning. Over time, this can

weaken middle competencies along with essential analysis and trouble-fixing. the convenience provided through AI may discourage beginners from fully enticing with complicated problems, probably proscribing the development of deeper strategic talents. This highlights the want to cautiously do not forget how AI is incorporated into mastering environments to avoid unintentional cognitive consequences (Bhaskar et al. 2023).

5.4. Ethical Complexity and Responsible AI Use

The concern of overuse without any ethical boundaries are clearly brought out by the study. Business education demand leadership qualities like thinking critically, quick decision makers with validation, depending on AI results in dependency and transparency issues. To use AI in management curriculum its ethical use should be imbibed in a similar way as rules and regulation of any institute are stated and implemented (Dignum, 2019)

5.5. Enhanced Engagement and the Illusion of Learning Depth

In accordance with the research which exist on AI claiming that it pays a consistent student engagement and customized as per the personal use of the management students of higher education (Bond et al., 2020).On the contrary the study also explores that using AI for knowledge may be good but it does not provide in depth knowledge of the concept. In many cases AI is used to just complete the task rather than gaining knowledge thus seriously affecting the intellectual capabilities of learners (Joshi & Semwal, 2026).

5.6. Redefining Pedagogical Roles and Institutional Responsibility

Role of business teachers have been elaborated after the introduction of AI. They are now not required to provide knowledge. They have to ignite in the current scenario a dynamic classroom to develop critical thinking amount the business students (Selwyn, 2021). A management institute requires knowledge, deep understanding and decision making. Thus the facilitators need to integrate the technology with learning in an effective manner by providing the guidelines (Joshi & Bhaskar, 2022).

5.7. Implications for Theory and Practice

The practical implications for the institutions are:

- Designing assessments that encourage original thinking and minimize over-reliance on AI
- Embedding AI ethics and governance within management curricula
- Promoting reflective and critical use of AI tools
- Supporting educators in adopting AI-integrated teaching strategies

These steps are essential to ensure that AI enhances, rather than undermines, the development of managerial competence.

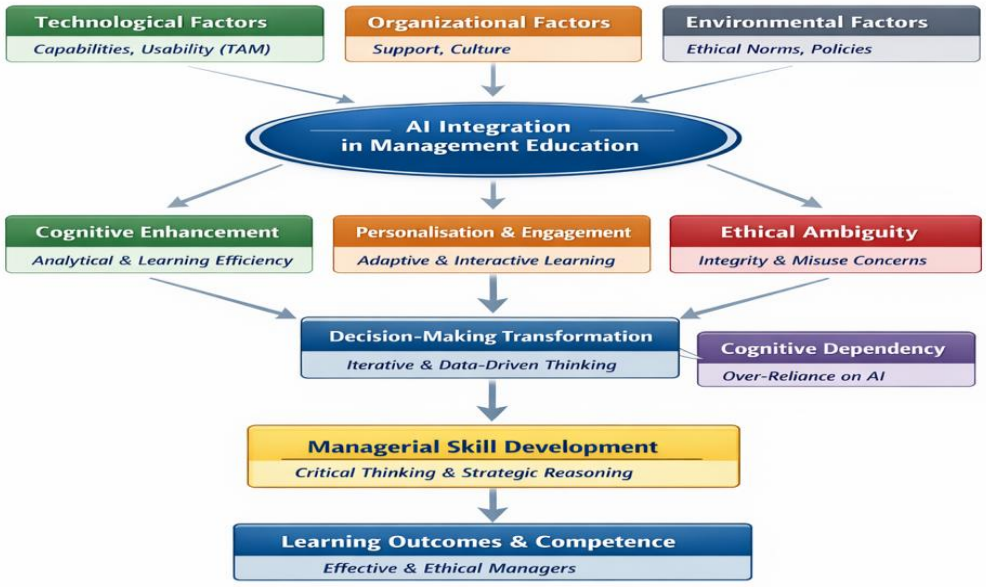

Figure 1: AI Driven Transformation in Management Education

Framework of integrated TOE–TAM is shown in diagram 1, it demonstrates the transition of education in management with the use of AI

The factors which effect adoption of AI are:

- Technological factors (TAM) – perceived usefulness and ease of use
- Organizational factors (TOE) – institutional support and culture
- Environmental factors (TOE) – policies, ethics, and external pressures

These factors collectively shape the integration of AI in management education. The level of process AI influences learning which include:

- Cognitive enhancement and personalised engagement (positive pathways)
- Ethical ambiguity (a moderating influence)

The use of AI in management education leads to the following learning outcomes:

- Managerial skill development (critical thinking, strategic reasoning)
- Ultimately leading to learning outcomes and competence

6. CONCLUSION

AI is an individual with all the possible information but it lacks clarity on cross questioning and specific need. Therefore, it must be wisely infused with well-designed pedagogical frameworks that prioritize inquiry, reflection, and application to enhance the depth and relevance of learning. However, if professionals cannot guide AI with clear structure and purpose, it may encourage superficial engagement and produce ambiguous outputs. There should be a well-defined structure to guide and govern the use of AI. Management education aims to develop leadership qualities among students so that they can thrive in today's increasingly digital and data-driven organizations. Training must go beyond technical aspects, as there is a clear need to integrate ethical reasoning, accountability, and responsible decision-making skills into the curriculum. This will provide students with stronger tools to handle the broader implications of AI in organizational contexts. However, studies also reveal that qualitative design and specific contexts suggest that outcomes are not broadly applicable to organizations. Research should address this limitation by adopting longitudinal approaches aimed at studying multiple institutional structures to develop a better understanding of management development over time with AI tools. We can conclude that AI can be a powerful opportunity to advance management education if implemented thoughtfully. AI should be used to enhance human intelligence as a supportive tool. Therefore, it is very important to maintain a balance between leveraging technological capabilities and preserving the central role of critical thinking, judgment, and ethical awareness in developing effective leaders. If this balance is not maintained, human intelligence may be completely replaced by artificial intelligence.

REFERENCES

[1]. Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, 610–623. https://doi.org/10.1145/3442188.3445922
[2]. Bennett, R., McWhorter, R., & Kuyoro, S. (2020). Artificial intelligence and student cognition in digital learning environments. *Educational Technology Research and Development, 68*(6), 1–18.
[3]. Bhaskar, P., Bhaskar, P., Anthonisamy, A., Dayalan, P., & Joshi, A. (2023). Inhibiting factors influencing adoption of simulation-based teaching from management teacher's perspective: prioritisation using analytic hierarchy process. International Journal of Learning and Change, 15(5), 529-551.
[4]. Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2020). Mapping research in student engagement and educational technology. *Educational Technology Research and Development, 68*(6), 1–38.
[5]. Carr, N. (2010). *The shallows: What the internet is doing to our brains*. W. W. Norton & Company.
[6]. Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review and future research directions. *IEEE Access, 8*, 75264–75278. https://doi.org/10.1109/ACCESS.2020.2988510
[7]. Chiu, T. K. F., Xia, Q., Zhou, X., Chai, C. S., & Cheng, M. (2023). Systematic review of generative AI in education. *Computers & Education: Artificial Intelligence, 5*, 100185.

[8]. Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2023). Chatting and cheating? Student perceptions of AI tools and academic integrity. *Assessment & Evaluation in Higher Education, 48*(6), 1–15.
[9]. Dignum, V. (2019). *Responsible artificial intelligence: How to develop and use AI in a responsible way*. Springer.
[10]. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., … Williams, M. D. (2023). So what if ChatGPT wrote it? Multidisciplinary perspectives on generative AI. *International Journal of Information Management, 71*, 102642.
[11]. Eubanks, V. (2018). *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press.
[12]. Ferguson, R. (2012). The state of learning analytics in education. *Journal of Educational Technology & Society, 15*(3), 88–95.
[13]. Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U., Rossi, F., Schafer, B., Valcke, P., & Vayena, E. (2018). AI4People—An ethical framework for a good AI society. *Minds and Machines, 28*(4), 689–707. https://doi.org/10.1007/s11023-018-9482-5
[14]. Hennekeuser, J., Müller, T., & Schmidt, L. (2024). AI-driven adaptive learning systems and student academic performance: A meta-analytic review. *Computers & Education: Artificial Intelligence, 5*, 100145.
[15]. Holmes, W., Bialik, M., & Fadel, C. (2019). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
[16]. Holmes, W., Persson, J., Chounta, I. A., Wasson, B., & Dimitrova, V. (2022). Artificial intelligence and education: A critical view through the lens of human rights, democracy and the rule of law. Council of Europe.
[17]. Huang, R., Spector, J. M., & Yang, J. (2023). Artificial intelligence in education: A review of recent advances and future directions. *Educational Research Review, 38*, 100456.
[18]. Ifenthaler, D., & Yau, J. Y.-K. (2020). Utilising learning analytics for student support: A review of research. *Educational Technology & Society, 23*(2), 1–15.
[19]. Jarrahi, M. H. (2018). Artificial intelligence and the future of work. *Business Horizons, 61*(4), 577–586.
[20]. Joshi, A., & Semwal, M. (2026). Employing ChatGPT: is artificial intelligence a benefit or threat to international schools?. *International Journal of Smart Technology and Learning*, *5*(1-2), 138-157.
[21]. Joshi, A., & Bhaskar, P. (2022). Qualitative study on critical traits of teacher for effective teaching in higher education institutions. *International Journal of Learning and Change*, *14*(4), 390-408
[22]. Joshi, A., Vinay, M., & Bhaskar, P. (2020). Online teaching amidst COVID-19 in India: An outlook. Asian Journal of Distance Education, 15(2), 105-111.
[23]. Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389–399. https://doi.org/10.1038/s42256-019-0088-2
[24]. Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., … Kasneci, G. (2023). ChatGPT for good? *Learning and Individual Differences, 103*, 102274.
[25]. Kulik, J. A., & Fletcher, J. D. (2016). Effectiveness of intelligent tutoring systems: A meta-analytic review. *Review of Educational Research, 86*(1), 42–78.
[26]. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
[27]. Logg, J. M., Minson, J. A., & Moore, D. A. (2019). Algorithm appreciation. *Organizational Behavior and Human Decision Processes, 151*, 90–103.
[28]. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.
[29]. Ma, W., Adesope, O. O., Nesbit, J. C., & Liu, Q. (2020). Intelligent tutoring systems and learning outcomes: A meta-analysis. *Journal of Educational Psychology, 112*(2), 470–497.
[30]. O'Neil, C. (2016). *Weapons of math destruction*. Crown Publishing.
[31]. Piaget, J. (1952). *The origins of intelligence in children*. International Universities Press.
[32]. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. *Academy of Management Review, 46*(1), 192–210.
[33]. Selwyn, N. (2021). *Education and technology: Key issues and debates* (3rd ed.). Bloomsbury.
[34]. Shrestha, Y. R., Ben-Menahem, S. M., & von Krogh, G. (2019). Organizational decision-making structures in the age of artificial intelligence. *California Management Review, 61*(4), 66–83.
[35]. Siemens, G. (2013). Learning analytics. *American Behavioral Scientist, 57*(10), 1380–1400.
[36]. Skinner, B. F. (1953). *Science and human behavior*. Macmillan.
[37]. Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretive phenomenological analysis*. Sage.
[38]. Strielkowski, W., Wang, J., & Madden, K. (2022). Digital transformation in education systems. *Education and Information Technologies, 27*, 1–15.
[39]. Tlili, A., Burgos, D., Huang, R., Mishra, S., Sharma, R. C., & Bozkurt, A. (2023). Artificial intelligence in education: A critical review. *Smart Learning Environments, 10*(1), 1–20.
[40]. UNESCO. (2023). *Global education monitoring report: Technology in education*. UNESCO.
[41]. VanLehn, K. (2011). The relative effectiveness of human tutoring and ITS. *Educational Psychologist, 46*(4), 197–221.
[42]. Vygotsky, L. S. (1978). *Mind in society*. Harvard University Press.
[43]. Williamson, B. (2020). *Big data in education*. Sage.

[44]. Xu, W., & Ouyang, F. (2022). AI in personalized learning. *Smart Learning Environments, 9*(1), 1–20.
[45]. Yan, L., Jiang, H., & Li, X. (2023). Cognitive effects of AI-assisted learning. *Computers in Human Behavior, 138*, 107–120.
[46]. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). AI in higher education. *International Journal of Educational Technology in Higher Education, 16*(1), 39.
[47]. Zhang, K., & Aslan, A. (2024). AI-enhanced learning and cognition. *Computers & Education, 210*, 104905.