

## Original Article

# ChatGPT and Kahoot Quizzes for Enhancing Student Engagement in Ethics Education

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## Abstract

*In an increasingly digitalised higher education landscape, pedagogical innovation is essential to sustain student engagement and learning effectiveness. This study examines the integration of generative artificial intelligence, specifically ChatGPT, into the teaching of a core university course, Ethics and Civilization (MPU3132), through interactive quizzes conducted via the Kahoot platform. The study explores how ChatGPT-supported quiz activities enhance student engagement, interaction, and higher-order thinking in ethics-related learning contexts. Findings indicate that the incorporation of ChatGPT significantly improves student participation, conceptual understanding of ethical and civilisational issues, and knowledge retention. The use of gamified quizzes further fosters intrinsic motivation and healthy competition, contributing to an active and student-centred learning environment. Importantly, this study contributes to the growing body of literature on AI-assisted pedagogy by demonstrating how generative AI can be meaningfully embedded within formative assessment practices to support sustainable education. The proposed approach offers a scalable and adaptable instructional model for ethics and humanities courses, aligning with global educational sustainability goals and the evolving demands of digital learning ecosystems.*

**Keywords:** AI Integrated Learning; ChatGPT; Educational; Gamification; Kahoot.

## Introduction

In teaching the MPU3132 course Penghayatan Etika dan Peradaban, fostering active student participation is crucial for enriching the learning experience and ensuring a deeper understanding of the material. Traditional teaching methods often fall short in capturing and sustaining student engagement, leading to suboptimal learning outcomes.<sup>1</sup> The advent of digital tools has opened up new avenues for addressing these challenges through the creation of dynamic and engaging learning experiences. Among these resources, Kahoot emerges as a promising tool for enhancing student participation and fostering a more interactive classroom environment.<sup>2</sup>

The findings of this study highlight the significant impact that Kahoot and ChatGPT can have on enhancing student participation in the MPU3132 course on Ethics and Civilization. In addition to improving engagement, these digital tools contribute to educational sustainability by fostering personalized learning experiences, enabling students to progress at their own pace while ensuring knowledge retention and deeper comprehension. Leveraging interactive presentation software like Kahoot, educators can transform traditional textbook learning into dynamic and engaging

<sup>1</sup> Waleed Ahmed and others, 'Fostering Students' Ethical Engagement by Employing Online Interactive Platforms for Engineering Ethics Education', *The Journal of Engineering Research*, 22.1 (2025), 34 <<https://doi.org/10.53540/1726-6742.1308>>.

<sup>2</sup> Birgy Lorenz and Kaido Kikkas, 'Innovating IT Ethics Education: The Role of AI in Course Development', *Lecture Notes in Computer Science*, 15806 LNCS (2025), 328–38 <[https://doi.org/10.1007/978-3-031-93564-0\\_20](https://doi.org/10.1007/978-3-031-93564-0_20)>.



conversations, incorporating elements such as word clouds, live polls, quizzes, and real-time Q&A sessions to foster student participation and interaction.<sup>3</sup> Grounded in constructivist learning theory, this study explores how teachers can create a learner-centered environment using Kahoot and ChatGPT to foster engagement, critical thinking, and cooperative learning. (Prince, 2004) This approach aligns with contemporary pedagogical trends that advocate for integrating technology into the classroom to enhance learning outcomes.

Ethics and Civilization education plays a pivotal role in nurturing morally responsible, socially conscious, and critically minded citizens who are capable of contributing to a harmonious and progressive society. <sup>4</sup>Within the Malaysian higher education context, the MPU3132 Penghayatan Etika dan Peradaban course is designed to cultivate ethical awareness, civic responsibility, and appreciation of civilizational values among undergraduates. However, despite the importance of these objectives, fostering active student participation remains a persistent challenge in many MPU3132 classrooms.

Existing studies indicate that conventional, lecture-centered instructional approaches often result in passive learning environments, where students are reluctant to participate due to fear of making mistakes, low motivation, limited confidence, or uninspiring teaching strategies. Such passivity is particularly problematic in Ethics and Civilization courses, which require dialogic engagement, reflection, and critical discussion to internalize moral values and ethical reasoning effectively. Without meaningful participation, students may achieve surface-level understanding rather than the deep comprehension necessary for ethical application in real-life contexts. Furthermore, factors such as large class sizes, cultural inhibitions, and varying levels of student self-efficacy further exacerbate the difficulty of promoting active engagement in Ethics and Civilization classrooms. These challenges underscore the inadequacy of traditional pedagogical methods in meeting the demands of contemporary learners, who are increasingly accustomed to interactive, technology-mediated learning environments.<sup>5</sup>

Recent advancements in educational technology, particularly the integration of artificial intelligence-driven tools such as ChatGPT and gamified learning platforms like Kahoot, present promising opportunities to address these engagement challenges.<sup>6</sup> Prior research has demonstrated the potential of such tools to enhance student participation, motivation, and interaction across various educational disciplines. Nevertheless, empirical investigations specifically examining the effectiveness of ChatGPT and Kahoot within the context of Ethics and Civilization education—particularly in MPU3132—remain limited.<sup>7</sup>

Accordingly, this study seeks to bridge this gap by examining the impact of integrating ChatGPT and Kahoot quizzes on student participation in the MPU3132 Ethics and Civilization course. Employing a quantitative research approach, the study evaluates key learning dimensions, including active learning, motivation, ease of use, and student satisfaction. The findings are expected to contribute valuable insights into technology-enhanced pedagogy for Ethics and Civilization education and support the development of more engaging, sustainable, and student-centered instructional practices.<sup>8</sup>

The rapid advancement of digital technologies has fundamentally transformed educational practices, reshaping how teaching and learning occur in higher education. This transformation is

<sup>3</sup> 'Learning and Collaboration Technologies', ed. by Brian K. Smith and Marcela Borge, *Lecture Notes in Computer Science*, 15806 (2025) <<https://doi.org/10.1007/978-3-031-93564-0>>.

<sup>4</sup> Robin Gauld, 'Using AI LLMs in the Class: The Case of Teaching Business Ethics', *Artificial Intelligence and Academic Integrity*, 2026, 159–69 <[https://doi.org/10.1007/978-981-95-1875-3\\_9](https://doi.org/10.1007/978-981-95-1875-3_9)>.

<sup>5</sup> Laura Burzagli and others, 'Ethical Assessment of a Case Involving the Use of "Conversational Agents" in Education According to EU Principles', *Communications in Computer and Information Science*, 2721 CCIS (2026), 503–14 <[https://doi.org/10.1007/978-3-032-12313-8\\_37](https://doi.org/10.1007/978-3-032-12313-8_37)>.

<sup>6</sup> Aitor Aritzeta, Stephen Swales, and Barbara Senior, 'Belbin's Team Role Model: Development, Validity and Applications for Team Building', *Journal of Management Studies*, 44.1 (2007), 96–118 <<https://doi.org/10.1111/j.1467-6486.2007.00666.x>>.

<sup>7</sup> André C.A. Nascimento and others, 'Exploring the Impact of LLM-Based Scaffolding on Academic Performance and the Mediating Roles of AI Literacy and Prior Knowledge', *Lecture Notes in Computer Science*, 16063 LNCS (2026), 382–96 <[https://doi.org/10.1007/978-3-032-03870-8\\_26](https://doi.org/10.1007/978-3-032-03870-8_26)>.

<sup>8</sup> Omar Boubker, 'From Chatting to Self-Educating: Can AI Tools Boost Student Learning Outcomes?', *Expert Systems with Applications*, 238 (2024) <<https://doi.org/10.1016/j.eswa.2023.121820>>.



particularly evident in courses related to Ethics and Civilization, where interactive technologies offer unprecedented opportunities to enhance student engagement, motivation, and learning outcomes. As ethical education necessitates reflection, dialogue, and critical reasoning, the integration of digital tools provides a conducive platform for fostering active participation and deeper cognitive engagement.<sup>9</sup>

Interactive technologies have emerged as essential components of contemporary Ethics and Civilization instruction due to their capacity to create dynamic, learner-centered environments. By incorporating multimedia elements, real-time feedback mechanisms, and interactive activities, these technologies accommodate diverse learning styles and enable students to engage more meaningfully with ethical concepts, cultural narratives, and civilizational histories. Tools such as interactive whiteboards, multimedia presentations, and web-based applications empower educators to move beyond passive knowledge transmission toward participatory and inquiry-based learning experiences.

Moreover, research indicates that multimedia-enhanced and interactive learning environments can significantly strengthen students' autonomy, self-efficacy, and intrinsic motivation—key factors influencing active participation in Ethics and Civilization education. When learners are given opportunities to interact, reflect, and collaborate, they are more likely to internalize ethical values and develop critical perspectives on societal issues.<sup>10</sup>

Student engagement, encompassing behavioral, emotional, and cognitive dimensions, is widely recognized as a critical determinant of academic success. Interactive technologies have been shown to amplify all three dimensions by aligning instructional tasks with students' needs and leveraging digital affordances that promote collaboration and immediacy. In this regard, gamified platforms such as Kahoot and AI-driven tools like ChatGPT represent powerful pedagogical resources capable of fostering real-time interaction, immediate feedback, and sustained learner interest.<sup>11</sup>

Empirical evidence supports the effectiveness of interactive and gamified tools in enhancing classroom participation. demonstrated that Kahoot significantly increases student engagement and enjoyment in higher education settings. Similarly, studies on interactive polling and real-time response systems reveal improvements in attention, participation, and feedback quality. Emerging research on ChatGPT further suggests its potential to support active learning, critical thinking, and personalized feedback through conversational and adaptive learning interactions.

Although direct empirical studies examining the combined use of ChatGPT and Kahoot in Ethics and Civilization classrooms are still scarce, existing literature on comparable interactive technologies provides a strong theoretical and empirical foundation for their application. These tools align closely with constructivist learning theory, which emphasizes knowledge construction through active participation, social interaction, and collaborative learning. By facilitating real-time dialogue, cooperative learning, and reflective engagement, ChatGPT and Kahoot can contribute to a learner-centered environment conducive to ethical inquiry and moral reasoning.

In summary, the literature consistently highlights the transformative potential of interactive technologies in enhancing student engagement and participation. While the application of ChatGPT and Kahoot in Ethics and Civilization education remains underexplored, existing studies underscore their promise as effective pedagogical tools.<sup>12</sup> This gap in the literature reinforces the need for empirical research investigating their implementation and impact within MPU3132, thereby contributing to the evolving discourse on technology integration and educational sustainability in Ethics and Civilization instruction.

<sup>9</sup> Anna Y.Q. Huang, Owen H.T. Lu, and Stephen J.H. Yang, 'Effects of Artificial Intelligence–Enabled Personalized Recommendations on Learners' Learning Engagement, Motivation, and Outcomes in a Flipped Classroom', *Computers and Education*, 194 (2023) <<https://doi.org/10.1016/j.compedu.2022.104684>>.

<sup>10</sup> Lei Huang and others, 'A Survey on Hallucination in Large Language Models: Principles, Taxonomy, Challenges, and Open Questions', *ACM Transactions on Information Systems*, 43.2 (2025) <<https://doi.org/10.1145/3703155>>.

<sup>11</sup> Hazem Ibrahim and others, 'Perception, Performance, and Detectability of Conversational Artificial Intelligence across 32 University Courses', *Scientific Reports*, 13.1 (2023) <<https://doi.org/10.1038/s41598-023-38964-3>>.

<sup>12</sup> Brian K. Smith and Marcela. Borge, 'Learning and Collaboration Technologies : 12th International Conference, LCT 2025, Held as Part of the 27th HCI International Conference, HCII 2025, Gothenburg, Sweden, June 22-27, 2025, Proceedings. Part I', 2025, 400.



## Method

This study employs a quantitative research design to investigate the impact of integrating ChatGPT with game-based learning (GBL) on student engagement in the MPU3132 Penghayatan Etika dan Peradaban classroom. Specifically, Kahoot is used as the interactive GBL platform to facilitate in-class quizzes and activities. The research examines whether the combined use of ChatGPT for guided learning and Kahoot for interactive assessment enhances students' participation, motivation, and perceived learning outcomes.

The study population consisted of 105 undergraduate students enrolled in MPU3132 at Universiti Malaysia Terengganu (UMT), Malaysia. Participants were randomly selected to ensure representativeness and reduce selection bias. Participation was voluntary, and informed consent was obtained prior to data collection. Data were collected using a structured online survey administered after the implementation of ChatGPT-assisted activities and Kahoot quizzes in the classroom. The survey instrument comprised Likert-scale items designed to measure students' perceptions of engagement, motivation, ease of use, and satisfaction with the learning tools. Additional demographic questions (e.g., age, gender, prior experience with digital tools) were included to contextualize the findings.<sup>13</sup>

The survey was piloted with a small group of students ( $n = 10$ ) prior to the main study to ensure clarity, reliability, and validity of the items. Data analysis will involve descriptive statistics to summarize student perceptions and inferential statistics (e.g., correlation and regression analysis) to examine relationships between the use of ChatGPT, Kahoot and levels of student engagement.

## Results and Discussions

The Chart 1 illustrates the demographic profiles of the respondents involved in this study. A total of 105 students, organized into 21 groups, participated. The demographic information provides context for interpreting engagement levels and quiz performance, as previous studies suggest that demographic factors such as age, prior exposure to technology, and digital literacy can influence students' interaction with game-based learning (GBL) tools and AI-assisted platforms ChatGPT

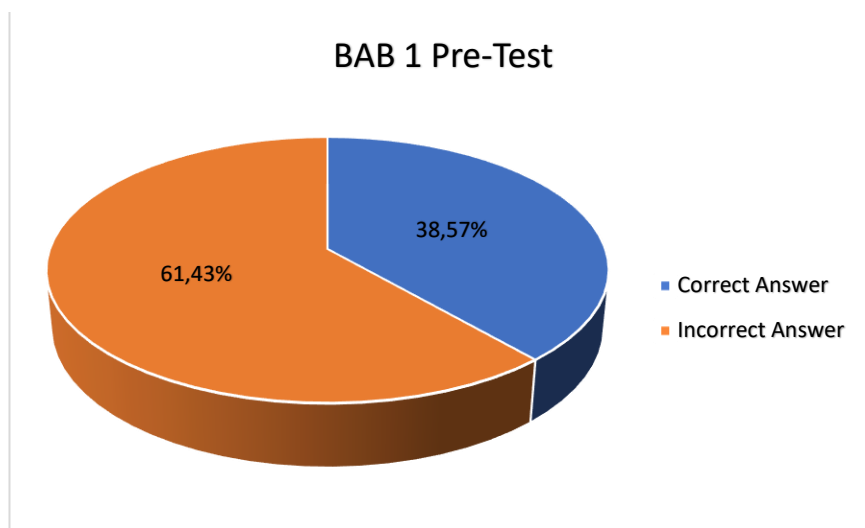


Chart 1. Demographic distribution of respondents ( $n = 105$ ) based on age, gender, and prior experience with digital tools.

*Quiz Performance Using Kahoot*, ten-Question Kahoot Quiz. The initial survey included a 10-question Kahoot quiz designed to evaluate students' understanding of the MPU3132 course content. The descriptive statistics are summarized in Table 1.

<sup>13</sup> Stephen Hutt and Grayson Hieb, 'Scaling Up Mastery Learning with Generative AI: Exploring How Generative AI Can Assist in the Generation and Evaluation of Mastery Quiz Questions', *L@S 2024 - Proceedings of the 11th ACM Conference on Learning @ Scale*, 2024, 310–14 <<https://doi.org/10.1145/3657604.3664699>>.



|     | True | Flase |
|-----|------|-------|
| Q1  | 100% | 0%    |
| Q2  | 38%  | 62%   |
| Q3  | 100% | 0%    |
| Q4  | 67%  | 33%   |
| Q5  | 81%  | 19%   |
| Q6  | 5%   | 95%   |
| Q7  | 52%  | 48%   |
| Q8  | 43%  | 57%   |
| Q9  | 5%   | 95%   |
| Q10 | 14%  | 86%   |

Mean Score for True Responses: 10.6, Mean Score for False Responses: 10.4. Table 1. Percentage of correct (True) and incorrect (False) responses per question in the 10-item Kahoot quiz. The average correct response rate (61.43%) indicates a moderate understanding of the material. Questions Q1 and Q3 were the easiest, with all 21 groups answering correctly, suggesting that the content or format of these questions aligned well with students' prior knowledge or engagement. Questions Q6 and Q9 were the most challenging, with only 1 correct response each, highlighting areas where students struggled.

According to item difficulty theory, items answered correctly by fewer than 30% of respondents are considered difficult and may require instructional reinforcement. The spread of correct and incorrect answers suggests variability in comprehension, which can inform instructors about which concepts need further clarification in the classroom.<sup>14</sup> Future analysis of the discrimination index could determine whether these questions effectively distinguish between high-performing and low-performing students, helping to optimize quiz design for both learning assessment and engagement measurement.<sup>15</sup>

*Twenty-One Question Kahoot and ChatGPT Survey.* The extended survey incorporated 21 questions evaluating students' perceptions of Kahoot and ChatGPT integration. The performance summary is presented in Table 2.

|    | True  | Flase |
|----|-------|-------|
| Q1 | 100.0 | 0.0   |
| Q2 | 100.0 | 0.0   |
| Q3 | 100.0 | 0.0   |
| Q4 | 100.0 | 0.0   |
| Q5 | 95.2  | 4.8   |
| Q6 | 85.7  | 14.3  |
| Q7 | 90.5  | 9.5   |
| Q8 | 90.5  | 9.5   |

<sup>14</sup> Alexandre Hudon and others, 'Using ChatGPT in Psychiatry to Design Script Concordance Tests in Undergraduate Medical Education: Mixed Methods Study', *JMIR Medical Education*, 10.1 (2024), e54067 <<https://doi.org/10.2196/54067>>.

<sup>15</sup> Ahmet Durgungoz and Fatma Canan Durgungoz, 'Exploring Effortless AI-Generated Gamified Quizzes in an Online Special Education Module: Evaluating Question Quality, Student Engagement, and Its Potential to Identify at-Risk Students', *Education and Information Technologies 2025 30:17*, 30.17 (2025), 25335–57 <<https://doi.org/10.1007/s10639-025-13765-5>>.



|     |      |      |
|-----|------|------|
| Q9  | 76.2 | 23.8 |
| Q10 | 95.2 | 4.8  |

Mean Score for True Responses: 93.33%. Mean Score for False Responses: 6.67%. Table 2. Percentage of correct (True) and incorrect (False) responses per question in the 21 item Kahoot and ChatGPT survey. The high average correct response rate (93.33%) indicates that students engaged effectively with the content when ChatGPT and Kahoot were integrated. Questions Q1–Q4 achieved 100% correct responses, suggesting that the combined use of AI-assisted prompts and gamified quizzes reinforced understanding of fundamental concepts (Heung & Chiu, 2025; Mahmudov, 2025). Question Q9, with 76.2% correct responses, emerged as the most challenging, indicating a content area that may require additional scaffolding or review. The minimal spread of incorrect responses (6.67% average) reflects strong overall engagement and supports literature claiming that interactive and gamified learning tools increase participation and motivation (Arjomandi, Paloyo, & Suardi, 2023). These findings suggest that integrating ChatGPT as an AI learning companion with Kahoot for active assessment not only enhances knowledge retention but also encourages self-directed learning and immediate feedback, consistent with the principles of constructivist learning theory.<sup>16</sup>

The combination of AI-driven support (ChatGPT) and game-based assessment (Kahoot) appears to create a synergistic effect: ChatGPT guides understanding, while Kahoot motivates and engages students.<sup>17</sup> Questions with lower correct rates (e.g., Q6 and Q9 in the 10-item quiz) highlight areas for instructional improvement, supporting targeted interventions in future course design. Overall, the data indicate that technology-enhanced learning tools can bridge gaps between theoretical knowledge and practical engagement, aligning with recent findings on AI in education. The findings of this study demonstrate that the integration of Kahoot and ChatGPT significantly enhances student participation and engagement in the MPU3132 Ethics and Civilization course. These results extend existing research on technology-enhanced learning by illustrating how game-based platforms and conversational artificial intelligence can be effectively applied within humanities-based courses, which are often perceived as less interactive.<sup>18</sup>

From a theoretical perspective, the increased student engagement observed in this study aligns with active learning and constructivist learning theories, which emphasize learner interaction, knowledge construction, and meaningful participation. The continuous interaction required by Kahoot quizzes and ChatGPT-facilitated discussions encourages students to actively process information rather than passively receive content. This supports deeper cognitive engagement, which is crucial for the internalization of ethical and civilizational concepts.<sup>19</sup>

Empirical data from this study indicate that immediate feedback plays a central role in reinforcing learning. Students were able to quickly identify misconceptions through real-time quizzes and AI-generated responses, enabling timely reflection and conceptual clarification.<sup>20</sup> This finding corroborates previous studies highlighting the importance of real-time feedback in sustaining motivation and improving learning outcomes. From the researchers' analysis, such feedback mechanisms are particularly valuable in ethics education, where abstract concepts benefit from iterative questioning and reflection.<sup>21</sup>

<sup>16</sup> Ahmet Durgungoz and Ahmed Kharrufa, “‘ChatGPT Is like a Study Buddy, a Teacher and Sometimes Just a Friend’: A Longitudinal Exploration of Students’ Interactions, Perception and Acceptance”, *Interactive Learning Environments*, 2025 <<https://doi.org/10.1080/10494820.2025.2509276>>.

<sup>17</sup> Rubén Abbas, Andrés Sebastián, and Jesús Casanova, ‘Evaluating Classroom Response Systems in Engineering Education: Which Metrics Better Reflect Student Performance?’, *Education and Information Technologies*, 30.1 (2025), 861–79 <<https://doi.org/10.1007/s10639-024-13048-5>>.

<sup>18</sup> Walaa Magdy Ahmed and others, ‘The Quality of AI-Generated Dental Caries Multiple Choice Questions: A Comparative Analysis of ChatGPT and Google Bard Language Models’, *Heliyon*, 10.7 (2024), 1–9 <<https://doi.org/10.1016/j.heliyon.2024.e28198>>.

<sup>19</sup> Duha Ali and others, ‘ChatGPT in Teaching and Learning: A Systematic Review’, *Education Sciences*, 14.6 (2024), 643 <<https://doi.org/10.3390/educsci14060643>>.

<sup>20</sup> Sebiha Balci, Jonathan M. Secaur, and Bradley J. Morris, ‘Comparing the Effectiveness of Badges and Leaderboards on Academic Performance and Motivation of Students in Fully versus Partially Gamified Online Physics Classes’, *Education And Information Technologies*, 27.6 (2022), 8669–8704 <<https://doi.org/10.1007/s10639-022-10983-z>>.

<sup>21</sup> Harun Cigdem, Mehmet Emin Korkusuz, and Caner Karaçaltı, ‘Gamified Learning: Assessing the Influence of Leaderboards on Online Formative Quizzes in a Computer Programming Course’, *Computer Applications in Engineering Education*, 32.2 (2024), e22697 <<https://doi.org/10.1002/cae.22697>>.



In terms of usability, participants perceived both Kahoot and ChatGPT as intuitive and accessible, regardless of their technological proficiency. This finding supports the technology acceptance perspective, suggesting that perceived ease of use is a critical factor influencing students' willingness to engage with digital learning tools. As noted by Zhang, user-friendly interfaces reduce cognitive load, allowing learners to focus on content rather than technical challenges. The researchers interpret this ease of use as a key enabler of inclusive participation, especially for students who may otherwise be reluctant to engage actively.<sup>22</sup>

Furthermore, the data reveal a notable increase in student motivation and satisfaction when interactive technologies were incorporated into classroom activities. The option for anonymous participation through polls and quizzes emerged as an important factor in encouraging contributions from quieter or less confident students.<sup>23</sup> This finding resonates with prior research emphasizing the role of anonymity and low-stakes interaction in broadening classroom participation and fostering psychological safety.<sup>24</sup> The researchers argue that such features are particularly effective in culturally diverse classrooms, where students may vary in their communication styles and confidence levels. Overall, this study contributes to the international literature by demonstrating that the pedagogical benefits of Kahoot and ChatGPT extend beyond technical engagement to support meaningful interaction, inclusive participation, and deeper learning in ethics and civilization education. The integration of these tools offers practical and theoretical insights for educators seeking to modernize humanities teaching while maintaining conceptual rigor and ethical depth.<sup>25</sup>

## Conclusion

This study demonstrates that the integration of Kahoot and ChatGPT within the MPU3132 Ethics and Civilization course offers substantial pedagogical value in enhancing student engagement, participation, and motivation. Beyond improving classroom interactivity, the findings contribute to the growing international discourse on technology-enhanced learning by illustrating how game-based learning and conversational artificial intelligence can be effectively embedded within humanities-oriented courses, particularly those focusing on ethics and civilization.

Despite the challenges associated with technological readiness and pedagogical alignment, the overall findings indicate that Kahoot and ChatGPT function not merely as supplementary tools, but as meaningful enablers of active learning and student-centered pedagogy. Their combined use supports more dynamic classroom interactions, encourages critical dialogue, and promotes inclusive participation among diverse learners. Consequently, this study contributes empirical evidence to the literature on digital pedagogy by highlighting the transformative potential of interactive technologies in cultivating ethically grounded and civically conscious learners in higher education contexts.

Building on the findings of this study, future research should examine the longitudinal effects of sustained ChatGPT integration on students' deeper cognitive engagement, ethical reasoning, and conceptual understanding of civilization-related issues. Long-term investigations would provide valuable insights into whether conversational AI can support higher-order thinking skills, reflective learning, and moral reasoning beyond short-term engagement outcomes.

Additionally, comparative studies involving alternative interactive technologies—such as other gamified platforms or AI-driven learning systems—would help identify the specific pedagogical affordances that most effectively foster student engagement and learning outcomes. Expanding the research across diverse institutional settings, cultural contexts, and student demographics would further enhance the generalizability of the findings. Such cross-contextual investigations could

<sup>22</sup> Yusuf Islam Bolat and Nurullah Taş, 'A Meta-Analysis on the Effect of Gamified-Assessment Tools on Academic Achievement in Formal Educational Settings', *Education and Information Technologies*, 28.5 (2023), 5011–39 <<https://doi.org/10.1007/s10639-022-11411-y>>.

<sup>23</sup> Milagros Torrado Cespón and Patricia Bárcena Toyos, 'An Example of Gamification for Pre-Service Teachers in Online Higher Education: Methods, Tools, and Purpose', *Digital Education Review*, 46.46 (2025), 1–14 <<https://doi.org/10.1344/der.2025.46.1-14>>.

<sup>24</sup> Fatma Canan Durgungoz and Ahmet Durgungoz, 'Interactive Lessons Are Great, but Too Much Is Too Much: Hearing out Neurodivergent Students, Universal Design for Learning and the Case for Integrating More Anonymous Technology in Higher Education', *Higher Education*, 2025 <<https://doi.org/10.1007/s10734-024-01389-6>>.

<sup>25</sup> H Khosravi, A Hellas, J Leinonen, S Sarsa P Denny, 'Can We Trust AI-Generated Educational Content? Comparative Analysis of Human and AI-Generated Learning Resources', *ArXiv Preprint ArXiv*, 2306 (2023), 10509 <<https://doi.org/10.48550/arxiv.2306.10509>>.



inform international best practices for integrating emerging educational technologies into ethics and civilization curricula, particularly in multicultural and interdisciplinary learning environments.

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