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Kahoot and the Classroom: Exploring Faculty Beliefs, Practices, and Active Learning

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ABSTRACT

This study analyzed survey data from 48 higher education faculty members at a public university in the south-central United States to examine the relationship between Kahoot usage, active learning beliefs, and teaching practices. Grounded in Technology Acceptance Model and the scholarship of teaching and learning, the study used a modified version of the 2023 Teaching Practices Survey and items adapted from prior Kahoot research to explore differences in pedagogical beliefs, course structure, and student engagement strategies between Kahoot users and non-users. Independent samples t-tests and Pearson correlations assessed group differences and associations across 3 domains: teaching practices, course structure, and instructional beliefs. Kahoot users were significantly more likely to endorse active learning as effective ($g = 0.79$), structure courses around group work ($g = 0.89$), and discuss well-being topics in class ($g = 0.68$). Composite analyses revealed a significant difference in instructional beliefs between users and non-users ($d = 0.71$), but not in overall teaching practices or course structure. A moderate positive correlation was found between belief in active learning and Kahoot adoption ($r = 0.42$, $p < .05$). These findings suggest that technology adoption is more closely aligned with underlying pedagogical beliefs than with broad structural changes in course design, contributing to research on instructional technology and evidence-based teaching.

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1. Introduction

Gamification has become increasingly common in higher education as instructors look for strategies to create more engaging, student-centered learning environments. At its core, it involves applying game design elements in non-game contexts within a classroom setting. Gamification has been shown to positively impact student participation and motivation, in part by providing immediate feedback that supports active learning and self-assessment (Wang & Tahir, 2020; Licorish et al., 2018).

One tool that has gained widespread use is Kahoot, a game-based student response system that blends formative assessment with interactive gameplay to engage students in real time (Wang, 2015). Unlike platforms such as Anki or Quizlet, which are often used for independent or self-paced learning, Kahoot is designed for shared, in-class experiences built around live participation and competition.

Most research on Kahoot centers on student perceptions and outcomes, showing improvements in engagement and short-term learning, with less attention to how faculty use the tool (Wang & Tahir, 2020; Licorish et al., 2018). To address this gap, this study investigates (1) how faculty who use Kahoot differ from non-users in their implementation of active learning strategies and attention to student well-being, and (2) what differences exist in teaching practices, course structure, and pedagogical beliefs between faculty who use Kahoot and those who do not. This gap is significant, as faculty teaching beliefs influence the adoption of other instructional technologies and active learning strategies. By exploring Kahoot through a faculty-focused lens, this study attempts to move beyond student experience to examine whether its use reflects deeper pedagogical approaches rather than surface level adoption.

2. Literature Review

2.1 Gamification and Motivation in Higher Education

Gamification has become increasingly common in higher education as instructors seek to enhance student engagement and participation (Deterding et al., 2011). Research suggests that gamification can support motivation and interaction when aligned with instructional goals, but its effectiveness depends on pedagogical integration rather than the presence of game elements alone (Codish & Ravid, 2014; Jayawardena et al., 2021). In addition to enhancing engagement, gamified learning environments may also promote deeper cognitive processing by encouraging the use of metacognitive strategies (Kim et al., 2009).

Self Determination Theory (SDT) provides a useful framework for understanding the motivational affordances of gamified learning environments. SDT proposes that motivation is enhanced when learning contexts support autonomy, competence, and relatedness (Ryan & Deci, 2000). Gamified tools that offer immediate feedback, low stakes practice, and social interaction may help meet these needs, particularly when embedded within active learning approaches. From this perspective, gamification functions as a mechanism for supporting student centered pedagogy rather than as an instructional goal in itself.

2.2 Kahoot as a Game Based Student Response System

Kahoot is a widely used game-based student response system that integrates formative assessment with live, interactive gameplay and has been adopted across diverse educational settings globally (Kahoot!, 2025). Unlike platforms such as Quizlet or Anki, which are typically used for independent or self-paced study, Kahoot is designed for synchronous classroom use and emphasizes shared participation, competition, and rapid feedback. These features align closely with active learning environments and are commonly associated with gamification tools used in educational practice (Kharbach, 2023).

Prior research demonstrates that Kahoot increases student engagement, enjoyment, and perceived learning across disciplines (Licorish et al., 2018; Mat Husin & Azmuddin, 2022; Pertegal-Felices et al., 2020; Wang & Tahir, 2020;

Fuchs, 2022). However, Kahoot's effectiveness appears to depend on how it is integrated into instructional practice, highlighting the importance of pedagogical context (Wang, 2015). To date, research has focused predominantly on student outcomes, often treating Kahoot as a discrete instructional intervention. As a result, less is known about how Kahoot use relates to faculty pedagogy, including instructors' beliefs, teaching practices, and course design choices.

To that end, the Technology Acceptance Model serves as a secondary theory to support explanation of why some educators choose gamification in the classroom and why others do not. The Technology Acceptance Model posits that technology adoption is influenced by the user's perceived ease of use and potential benefit to the users' job performance (Davis, 1989). Therefore, this theory could apply to faculty perception of Kahoot and their decision-making process regarding adoption.

2.3 Teaching Beliefs, Practices, and Well-being

Faculty beliefs play a central role in shaping instructional practice. Instructors who endorse student centered and constructivist views of learning are more likely to implement active learning strategies, formative assessment, and collaborative approaches (Ertmer et al., 2012). Technology adoption, in turn, is often enacted in ways that align with these existing beliefs rather than driving pedagogical change on its own.

Research on student well-being further highlights the importance of instructional practices that emphasize feedback, responsiveness, and classroom community. Faculty behaviors such as discussing well-being, providing timely feedback, and creating supportive learning environments are associated with positive academic and emotional outcomes (Boman et al., 2025; Holles, 2023; Zheng, 2022; Hsu & Goldsmith, 2021). These practices frequently intersect with active learning, suggesting that instructors who prioritize engagement may also be more attentive to student well-being.

3. Method

3.1 Participants

A total of 48 higher education faculty members participated in the study (see Table 1). Participants were recruited through a combination of targeted emails, academic social media platforms, and outreach via professional networking groups and listservs relevant to teaching and learning in higher education. This multi-channel recruitment approach was used to ensure a diverse sample representing various disciplines, institutions, and teaching experiences.

Table 1
Use of Kahoot in the Classroom: Do you currently use Kahoot in the classroom, or have you previously used Kahoot in the classroom?

Response	Count	Percentage
No	22	45.8%
Yes	26	54.2%

Note: Responses reflect whether instructors currently use or have previously used Kahoot in the classroom. A response of "No" was coded with "1" and a response of "Yes" was coded with "2" for data analysis purposes.

3.2 Materials

This study used a modified version of the 2023 Teaching Practices Survey, developed by the Centre for Teaching, Learning and Technology at the University of British Columbia (https://ctlt.ubc.ca/resources/teaching-practices-

survey/). The original instrument included 37 items designed to assess various aspects of teaching in higher education. For the purposes of this study, we selected and adapted a subset of items that focused on four key areas: teaching practices, course structure, teaching beliefs, and faculty demographics. We selected these items related to teaching practices, course structure, teaching beliefs, and faculty demographics to better fit the focus of our study and to limit the length of our instrument.

Participants responded to six items that assessed their use of specific teaching practices (see Table 2). The items were rated on a three-point Likert scale indicating their level of implementation: (1) "I currently do not have plans to do this in the near future," (2) "I do not currently do this, but I intend to in the near future," and (3) "I currently do this in the course." These items were intended to capture both actual and intended teaching behavior related to student-centered practices. After reverse-coding negatively worded items, a reliability analysis yielded a Cronbach's alpha of 0.72, indicating acceptable internal consistency.

Table 2

Teaching Practices Survey Questions and Scoring

Survey Questions	Response Options and Scoring
During class time, I discuss well-being topics with my students.	1 = I currently do not have plans to do this in the near future 2 = I do not currently do this, but I intend to in the near future 3 = I currently do this in the course.
During class time, I share resources to help students manage their well-being.	
During class time, I share study strategies for the course with students.	
I communicate to students that they can consult me directly if they need temporary adjustments to course requirements for things not covered by written accommodations, such as short-term illness, life events, etc.	
I intentionally build a culture of community and collaboration among students.	
I provide feedback to students at multiple points in the course.	

Note: Higher scores reflect more frequent or intentional use of well-being-supportive teaching practices.

To measure how faculty structured their courses, six items were included, each rated using a three-point scale: "Not a component," "Optional," or "Required" (see Table 3). This section captured whether specific course components (such as group work, community engagement, or formative assessments) were integrated into course design. A reliability analysis of the teaching practices items yielded a Cronbach's alpha of 0.56, indicating low internal consistency. This suggests that the items do not represent a single cohesive construct but rather reflect distinct choices related to course structure.

Table 3

Course Structure Survey Questions and Scoring

Survey Questions	Response Options and Scoring
Students participate in community engaged learning.	1 = Not a component 2 = Optional 3 = Required
Students participate in fieldwork or field trips.	
Students provide formative teaching feedback during the course.	
Students receive instructor or TA feedback and redo/revise work before submitting for a grade or to improve a grade.	
Students regularly complete an assessment of their understanding before class meetings.	
Students work in groups.	

Note: Higher scores reflect more frequent or intentional use of group work, community engagement, or formative assessments.

Participants rated their level of agreement with nine statements reflecting common beliefs about teaching and learning (see Table 4). These items were rated on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This section was intended to reveal faculty pedagogical orientations and the degree to which they aligned with student-centered or research-informed practices. After reverse-coding negatively worded items, a reliability analysis yielded a Cronbach's alpha of 0.61, indicating modest internal consistency.

Table 4

Teaching Beliefs Survey Questions and Scoring

Survey Questions	Response Options and Scoring
Active learning practices (students solving problems, collaborating with one another, generating knowledge, etc.) are an effective way to promote student learning. I believe that ongoing improvement in teaching is part of my job. I use research about student learning to refine my teaching practice. It is important to provide students with timely feedback on their work. My teaching practices have an impact on student well-being. I find it difficult to incorporate innovative or new teaching practices due to the other requirements of my appointment. (reverse scored) I find it difficult to access course analytics that I'd like to use (learning management system usage statistics, quiz statistics, aggregate course activity, etc.). (reverse scored) Reviewing course analytics (learning management system usage statistics, quiz statistics, aggregate course activity, etc.) is a productive use of my time. Teaching is a priority for me.	1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Note: Higher scores reflect stronger beliefs in active learning, the role of feedback, or technology in instruction

In addition to the core items from the Teaching Practices Survey, we included seven items focused on faculty perceptions of Kahoot (see Table 5). These items were adapted from a validated instrument developed by Pertegal-Felices, Jimeno-Morenilla, Sánchez-Romero, and Mora-Mora (2020), which examined the pedagogical impact of Kahoot in teacher training and computer engineering education. The items assessed participants' views on Kahoot's effectiveness, usefulness, engagement potential, and relevance to their teaching context. Minor wording modifications were made to ensure appropriateness for a higher education faculty audience. Items were rated on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

Table 5

Kahoot Perceptions Survey Questions and Scoring

Survey Questions	Response Options and Scoring
When students play Kahoot, they:	1 = Neither enjoy nor learn, 2 = Enjoy, but don't learn, 3 = Don't enjoy, but learn, 4 = Enjoy and learn
Kahoot helps students strengthen what they learned in the classroom.	1 = Not at all, 2 = Barely, 3 = A fair extent, 4 = A large extent
Playing Kahoot motivates students to learn the subject:	1 = Not at all, 2 = Barely, 3 = A fair extent, 4 = A large extent
Kahoot should be utilized:	Text Analysis: At the middle of class, At the end of class, At the beginning of class
The duration of Kahoot quizzes I give in class are:	Text Analysis: Short (<5 min), Medium (between 5 and 15 min), Long (>15 min)

Theoretical concepts are best explained by:	1 = My oral explanation combined with Kahoot and practical exercises, 2 = My oral explanation combined with Kahoot, 3 = My oral explanation combined with practical exercises, 4 = Exclusively my oral explanation
In general, I consider Kahoot	1 = Useless, 2 = Rarely necessary, 3 = Necessary, 4 = Absolutely essential

Note: Higher scores reflect stronger views on Kahoot's effectiveness, usefulness, engagement potential, and relevance to their teaching context.

Additional items collected background information including years of teaching experience, academic discipline, and self-reported use of Kahoot in their courses.

3.3 Procedure

Participants were invited to take part in the study through a recruitment email that included a link to an online survey hosted on Qualtrics. The email was distributed via academic listservs, social media platforms, and professional networks focused on higher education and teaching development. Upon clicking the survey link, participants first reviewed an informed consent form outlining the purpose of the study, confidentiality protections, and voluntary nature of participation. After providing consent, participants proceeded to complete the survey, which included items related to their teaching practices, course structure, teaching beliefs, perceptions of Kahoot, and demographic background. The survey was designed to take approximately 10–15 minutes to complete and was available for responses over a two-week period.

This study employed a primarily comparative research design using independent samples t-tests to examine differences between faculty who use Kahoot and those who do not. Key variables included teaching practices, course design elements, and professional beliefs. In addition to these group comparisons, Pearson correlation coefficients were calculated to explore associations among constructs such as Kahoot usage, active learning beliefs, and well-being practices. Descriptive statistics were also reported to summarize overall trends in faculty responses. Statistical significance was evaluated using a conventional alpha level of $p < .05$.

4. Results

The results of this study address two primary research questions concerning the relationship between faculty use of Kahoot and their teaching practices, course structure, pedagogical beliefs, and perceptions of Kahoot's instructional value. Independent samples t-tests were conducted to examine group differences between Kahoot users and non-users across domains related to active learning, student well-being, teaching strategies, and structural course elements. In addition, Pearson correlation analyses were used to assess associations between Kahoot usage and faculty perceptions of the tool's effectiveness. Descriptive statistics and domain-level composite scores were also examined to identify broader patterns in teaching orientation.

Additionally, Hedges' *g* was used to interpret group differences. Hedges' *g* is a standardized mean difference effect size that expresses the magnitude of group differences in standard deviation units. Unlike Cohen's *d*, Hedges' *g* includes a correction factor that reduces small sample bias, making it especially appropriate for studies with modest group sizes. Therefore, Hedges' *g* is used in this study due to the relatively small, unequal sample sizes of N = 47; n = 22 non-Kahoot users, n = 25 Kahoot users. Reporting *g* alongside *t* tests and *p* values provides a clearer understanding of not only whether differences are statistically significant but also whether they are practically meaningful (Lakens, 2013). Effect sizes around 0.20, 0.50, and 0.80 are typically interpreted as small, medium, and large, respectively.

The findings reveal several significant differences between users and non-users, providing insights into how instructional technology adoption aligns with evidence-based teaching practices in higher education.

4.1 Research Question One

Three items related to student well-being were selected to assess differences in strategies for addressing student well-being between Kahoot users and non-users, and independent samples t-tests were conducted (see Table 6). Results indicated that Kahoot users were significantly more likely than non-users to use class time to discuss and share well-being resources with students. However, there was no significant difference between the groups in their belief that teaching practices impact student well-being.

Table 6

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Student Well-Being Practices and Beliefs

Question and Category (Practices, Course Structure, or Beliefs)	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
My teaching practices have an impact on student well-being. (Beliefs)	4.32	4.60	22	25	-1.419	0.1628
During class time, I discuss well-being topics with my students. (Practices)	2.14	2.68	22	25	-2.356	0.0229*
During class time, I share resources to help students manage their well-being. (Practices)	1.86	2.48	22	25	-2.547	0.0143*

Note: Higher scores indicate greater agreement with each item. Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

For student wellbeing practices (RQ1), Kahoot users reported discussing wellbeing during class more frequently with $t(45) = -2.36$, $p = .023$, and $g = 0.68$, which demonstrates a medium to large effect. In practical terms, this indicates that instructors who use Kahoot tend to integrate conversations about wellbeing more regularly into their teaching.

Kahoot users also reported sharing wellbeing resources more often, $t(45) = -2.55$, $p = .014$, $g = 0.73$, which points to a large effect. This suggests that the Kahoot using instructors are not only talking about wellbeing but also providing students with tangible tools such as campus services, study strategies, or mental health supports at a meaningfully higher rate than nonusers.

4.2 Research Question Two

Independent sample t-tests were used to examine how faculty who use Kahoot differ from non-users across three domains: teaching practices, course structure, and teaching beliefs. Results from independent samples t-tests revealed that while few significant differences emerged in individual teaching practices or course structures, Kahoot users were notably more likely to discuss well-being during class and incorporate group work into their course design. More pronounced differences appeared in teaching beliefs: Kahoot users expressed stronger endorsement of active learning, timely feedback, course analytics, and using learning research to refine instruction. Overall, a significant difference was found in teaching beliefs, suggesting that Kahoot adoption is linked with a broader commitment to evidence-based, student-centered pedagogy.

To assess differences in strategies related specifically to active learning beliefs, practices, and course structure, five survey items related to active learning were selected, and independent samples t-tests were conducted (see Table 7). Results indicated that Kahoot users were significantly more likely than non-users to report a belief that active learning practices are an effective way to promote student learning and to report a course structure in which students work in groups. However, there were no significant differences between the groups in building

collaboration among students, participation in community-engaged learning, or participation in fieldwork or field trips.

Table 7

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Active Learning

Question and Category (Practices, Course Structure, or Beliefs)	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
Active learning practices (students solving problems, collaborating with one another, generating knowledge, etc.) are an effective way to promote student learning. (Beliefs)	4.36	4.84	22	25	-2.695	0.0099*
I intentionally build a culture of community and collaboration among students. (Practices)	2.91	2.84	22	25	0.592	0.5570
Students participate in community engaged learning. (Structure)	1.64	1.96	22	25	-1.204	0.2349
Students participate in fieldwork or field trips. (Structure)	1.55	1.48	22	25	0.267	0.7908
Students work in groups. (Structure)	2.05	2.72	22	25	-3.036	0.0040*

Note: Higher scores indicate greater agreement with each item. Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

For active learning (RQ2), users endorsed stronger beliefs in the effectiveness of active learning, $t(45) = –2.70$, $p = .010$, $g = 0.79$. This means that users are substantially more convinced that students learn better when actively engaged which is consistent with the kinds of rapid feedback, interaction, and participation that Kahoot facilitates. Results also showed that Kahoot users more frequently required group work, $t(45) = –3.04$, $p = .004$, $g = 0.89$, a large effect. This finding indicates that Kahoot users not only hold stronger beliefs about active learning but also translate those beliefs into concrete pedagogical choices that involve collaboration and peer interaction. Other active learning items showed small, nonsignificant effects.

Independent samples t-tests were conducted to examine differences in teaching practices between faculty who use Kahoot and those who do not (see Table 8). Among the six teaching practices analyzed, two showed a statistically significant difference between groups. Faculty who use Kahoot were significantly more likely to report discussing well-being topics with their students during class time, t(45) = -2.36, p = .023 and share resources to help students manage their well-being, t(45) = -2.547, p = 0.14. No significant differences were found for the remaining practices, including providing study strategies, offering temporary course adjustments, fostering collaboration, or providing multiple points of feedback.

Table 8

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Teaching Practices

Question	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
During class time, I discuss well-being topics with my students.	2.14	2.68	22	25	-2.356	0.0229*
During class time, I share resources to help students manage their well-being.	1.86	2.48	22	25	-2.547	0.0143*
During class time, I share study strategies for the course with students.	3.00	3.00	22	25	1	0

I communicate to students that they can consult me directly if they need temporary adjustments to course requirements for things not covered by written accommodations, such as short-term illness, life events, etc.	2.68	2.68	22	25	0.009	0.9930
I intentionally build a culture of community and collaboration among students.	2.91	2.84	22	25	0.592	0.5570
I provide feedback to students at multiple points in the course.	2.91	2.92	22	25	-0.09	0.9283

Note: Higher scores indicate greater agreement with each item. Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

Independent samples t-tests were conducted to evaluate differences in course structure between faculty who use Kahoot and those who do not (see Table 9). Of the six course structure items analyzed, only one demonstrated a statistically significant difference. Kahoot users were significantly more likely to report that students work in groups as part of their course structure, t(45) = -3.04, p = .004. No significant differences or impactful effects were observed for other structural elements, including opportunities for community-engaged learning, fieldwork, formative feedback, revision opportunities, or pre-class assessments.

Table 9

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Course Structure

Question	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
Students participate in community engaged learning.	1.64	1.96	22	25	-1.204	0.2349
Students participate in fieldwork or field trips.	1.55	1.48	22	25	0.267	0.7908
Students provide formative teaching feedback during the course.	1.82	1.96	22	25	-0.592	0.5569
Students receive instructor or TA feedback and redo/revise work before submitting for a grade or to improve a grade.	1.64	1.64	22	25	-0.016	0.9872
Students regularly complete an assessment of their understanding before class meetings.	1.32	1.56	22	25	-1.069	0.2907
Students work in groups.	2.05	2.72	22	25	-3.036	0.004*

Note: Higher scores indicate greater agreement with each item. Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

Independent sample t-tests were conducted to compare faculty beliefs about teaching and learning between Kahoot users and non-users (see Table 10). Of the nine belief-related items assessed, four showed statistically significant differences. Kahoot users were significantly more likely to agree that active learning practices are effective for promoting student learning, t(45) = -2.70, p = .010; that they use research about student learning to refine their teaching practice, t(45) = -2.66, p = .011; that it is important to provide students with timely feedback, t(45) = -2.42, p = .020; and that reviewing course analytics is a productive use of their time, t(45) = -2.16, p = .037. No significant group differences were observed for beliefs related to the impact of teaching on student well-being, the role of ongoing teaching improvement, perceived barriers to innovation or data access, or teaching as a general priority.

Table 10

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Teaching Beliefs

Question	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
Active learning practices (students solving problems, collaborating with one another, generating knowledge, etc.) are an effective way to promote student learning.	4.36	4.84	22	25	-2.695	0.0099*
I believe that ongoing improvement in teaching is part of my job.	4.82	4.96	22	25	-1.582	0.1207
I use research about student learning to refine my teaching practice.	3.45	4.20	22	25	-2.657	0.0109*
It is important to provide students with timely feedback on their work.	4.55	4.88	22	25	-2.416	0.0198*
My teaching practices have an impact on student well-being.	4.32	4.60	22	25	-1.419	0.1628
I find it difficult to incorporate innovative or new teaching practices due to the other requirements of my appointment. (reverse scored)	3.05	3.28	22	25	-0.673	0.5045
I find it difficult to access course analytics that I'd like to use (learning management system usage statistics, quiz statistics, aggregate course activity, etc.). (reverse scored)	2.82	3.16	22	25	-0.896	0.3750
Reviewing course analytics (learning management system usage statistics, quiz statistics, aggregate course activity, etc.) is a productive use of my time.	3.68	4.32	22	25	-2.154	0.0366*
Teaching is a priority for me.	4.36	4.76	22	25	-1.955	0.0568

Note: Higher scores indicate greater agreement with each item. Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

Kahoot users also reported stronger endorsement of a range of teaching beliefs associated with active, student-centered pedagogy. Users more strongly agreed that active learning practices are effective for student learning, $t(45) = -2.70$, $p = .010$, $g = 0.79$, indicating a substantial difference in attitudes toward engagement-focused instructional methods. They also reported greater use of research on student learning to guide their instructional decisions, $t(45) = -2.66$, $p = .011$**,** $g = 0.76$ which is a large effect suggesting that users are more likely to refine their teaching based on evidence informed practices. Similarly, users placed higher importance on providing timely feedback, $t(45) = -2.42$, $p = .020$, $g = 0.70$, reflecting a meaningful difference in beliefs about feedback as an important component of effective instruction.

Additional belief items showed consistent, though somewhat smaller, differences favoring users. Kahoot users were more likely to view reviewing course analytics as a productive instructional practice, $t(45) = -2.15$, $p = .037$, $g = 0.62$, pointing to greater openness to data informed teaching. Finally, users were more likely to report that teaching is a high personal priority, $t(45) = -1.96$, $p = .057$, $g = 0.56$. Although this item did not reach statistical significance, the medium effect suggests a meaningful trend in which users place somewhat more value on their teaching role.

Finally, items within each domain (Teaching Practices, Course Structure, and Teaching Beliefs) were averaged to examine overall differences between Kahoot users and non-users (see Table 11). Independent samples t-tests

revealed a statistically significant difference only in the Teaching Beliefs domain, t(45) = -3.11, p = .003. No significant differences were found for Teaching Practices or Course Structure.

Table 11

Independent Samples t-Test Results Comparing Kahoot Users and Non-Users on Domain Summaries of Teaching Practices, Course Structure, and Teaching Beliefs

Domain	Mean (No Kahoot)	Mean (Yes Kahoot)	n (No Kahoot)	n (Yes Kahoot)	t-statistic	p-value
Teaching Practices	2.58	2.77	22	25	-1.843	0.0719
Course Structure	1.67	1.89	22	25	-1.700	0.0960
Teaching Beliefs	3.93	4.33	22	25	-3.112	0.0032*

Note: Kahoot use coded as 1 = No, 2 = Yes. Significant results are bolded and identified with an asterisk. *p < .05

At the composite level, Kahoot users showed stronger endorsement of student-focused and evidence-based teaching beliefs, with a significant difference on the Teaching Beliefs composite, $t(45) = -3.11$, $p = .003$, $g = 0.91$, indicating a large and meaningful advantage for users. Differences in both Teaching Practices and Course Structure also favored users, with medium effect sizes ($g = 0.54$ and $g = 0.50$, respectively), though these comparisons did not reach statistical significance. Taken together, the composite results suggest that while the clearest differences appear in instructors' underlying beliefs, Kahoot users also show consistent, moderate tendencies toward more student-centered practices and more structured courses.

5. Discussion

This study examined the relationship between Kahoot usage and 1) how faculty who use Kahoot differ from non-users in their implementation of active learning strategies and attention to student well-being, and 2) what differences exist in teaching practices, course structure, and pedagogical beliefs between faculty who use Kahoot and those who do not. Additionally, this study was grounded in Self-Determination Theory, a theory which explores intrinsic and extrinsic motivation, and the Technology Acceptance Model, which focuses on the perceptions of potential users. The findings contribute to a more nuanced understanding of how game-based response systems fit within broader faculty pedagogical orientations and intrinsic and extrinsic rewards. This study also took into account generally accepted best practices on active learning and teaching pedagogy.

Faculty who use Kahoot differed from non-users in their implementation of active learning strategies. Kahoot users reported significantly stronger beliefs in the effectiveness of active learning, t(45) = –2.70, p = .010, g = 0.79, representing a large effect. This supports the idea that instructors who adopt Kahoot are more convinced that students learn best through active engagement, which aligns with the platform's emphasis on real-time interaction, feedback, and participation. These findings indicate that Kahoot use is associated with instructional approaches that prioritize student involvement and collaborative learning.

Differences were also observed in attention to student well-being. Kahoot users reported discussing well-being during class more frequently, t(45) = –2.36, p = .023, g = 0.68, and sharing well-being resources more often, t(45) = –2.55, p = .014, g = 0.73, both reflecting medium to large effects. In practical terms, this suggests that instructors who use Kahoot are more likely to integrate well-being into their teaching, both through classroom conversations and by providing tangible supports such as campus resources or study strategies. Together, these findings indicate that Kahoot use is associated with a more proactive approach to supporting students' academic and personal well-being.

However, other differences in teaching practices between Kahoot users and non-users were relatively limited. Among the practices examined, the only statistically significant difference was that Kahoot users were more likely

to discuss student well-being during class time. Other teaching practices showed small, non-significant differences, suggesting that while Kahoot use is associated with some variation in classroom behaviors, it does not correspond to broad or consistent differences across all instructional practices. Since the discussion of well-being could be included in both well-being practices and beliefs and teaching practices, we included the results in both categories. Other items within the teaching practices category were not significant.

In terms of course structure, Kahoot users were significantly more likely to incorporate group work into their courses, $t(45) = -3.04$, $p = .004$, $g = 0.89$, indicating a large effect. This suggests that faculty who use Kahoot are more likely to design their courses to include collaborative learning opportunities. However, when course structure items were combined into a composite measure, no overall significant difference was found between users and non-users, indicating that this difference may be specific to certain structural elements rather than reflective of a broader shift in course design.

The most consistent and meaningful differences emerged in pedagogical beliefs. Kahoot users reported stronger endorsement of active learning, timely feedback, the use of course analytics, and applying research on student learning to inform teaching. These differences were statistically significant across multiple items and reflected medium to large effect sizes. Additionally, a significant difference was found in the overall Teaching Beliefs domain, $t(45) = -3.11$, $p = .003$, suggesting that Kahoot users are more aligned with evidence-based, student-centered teaching perspectives. These findings indicate that Kahoot use is associated with a broader pedagogical orientation that emphasizes engagement, feedback, and data-informed instruction.

Together, these results indicate that faculty who adopt Kahoot are more likely to integrate instructional strategies that support students' emotional and academic engagement, report stronger endorsement of active learning, and well as incorporate group work into their course structure.

5.1 Interpretation

Overall, while differences in teaching practices and course structure were limited, Kahoot users demonstrated significantly stronger alignment with student-centered pedagogical beliefs, suggesting that any observed differences may reflect broader instructional orientations rather than isolated teaching behaviors.

However, we would be remiss if we did not acknowledge that faculty self-selected into the Kahoot group versus the non-Kahoot group. While it is true that faculty who used Kahoot tested higher in several areas related to this study, these differences could also be explained with familiarity with difference technology, willingness to adopt new technologies within the classroom, or even differing socioeconomic resources among faculty.

Specifically, faculty who used Kahoot were significantly more likely to use class time to discuss student well-being and to incorporate group work into their courses. This could be because using Kahoot encourages faculty to pause and discuss answers with students, possibly naturally leading to more discussion time or group work time in class since the lecture is paused while reviewing Kahoot results. It is entirely possible and plausible that faculty who do not use Kahoot also incorporate student well-being outside of class time or in ways in which this survey did not assess.

It is not surprising, therefore, that no significant differences were observed in other practice or structure items, such as community-based learning or offering students the chance to revise assignments. This suggests that while certain active learning behaviors may cluster among Kahoot users, the adoption of the tool does not necessarily reflect broad differences in all instructional dimensions.

Interestingly, perceptions of Kahoot's instructional value were generally positive across both users and non-users. Kahoot usage was significantly correlated with stronger agreement on multiple items, including its ability to promote learning, motivate students, and support conceptual understanding. However, the perception item once thought to show a paradox (non-users rating Kahoot as "essential" more highly than users) did not hold in the current analysis. Instead, users were more likely to view the platform as necessary, further reinforcing the alignment between beliefs

and adoption. This aligns with the Technology Adoption Theory perceptive, including both the perception of the technology and the user's expectation of enhancement to their professional position.

5.2 Comparison

These findings align with prior research emphasizing the pedagogical potential of gamification tools like Kahoot to support active learning and student engagement (Jayawardena et al., 2021; Licorish et al., 2018; Mat Husin & Azmuddin, 2022). The significant association between Kahoot usage and student-centered instructional beliefs reinforces earlier work suggesting that gamified platforms are not merely engaging technologies but often reflect deeper pedagogical commitments (Deterding et al., 2011; Codish & Ravid, 2014). Moreover, the greater likelihood of Kahoot users to incorporate well-being discussions and group work supports scholarship connecting gamification with enhanced classroom interaction and emotional engagement (Boman et al., 2025; Holles, 2023). In this way, the current study extends prior findings by illustrating how faculty adoption of gamification tools may serve as both a reflection of and mechanism for enacting evidence-based, student-centered teaching practices.

However, the current findings suggest that Kahoot adoption may function less as a direct driver of instructional change and more as an indicator of an instructor's broader innovation orientation. In other words, a willingness to adopt new tools, integrate evidence-based practices, and prioritize student engagement. In this sense, Kahoot may serve as a proxy for faculty who are already inclined toward reflective, research-informed teaching.

A new finding in this study is that Kahoot usage is significantly associated with faculty pedagogical beliefs, particularly in the domain of student-centered, research-informed teaching. While previous studies have highlighted Kahoot's impact on student engagement and outcomes, this study uniquely shows that faculty who use Kahoot are more likely to endorse beliefs about the importance of active learning, timely feedback, learning analytics, and research-based instruction, even more so than differences in their observable teaching practices or course structures.

5.3 Implications

These findings suggest that Kahoot use is not simply a matter of tool preference but reflects deeper pedagogical alignment. Faculty who adopt Kahoot tend to hold stronger beliefs in student engagement, evidence-based practice, and learning analytics. The statistically significant difference in the Beliefs domain highlights the centrality of pedagogical philosophy in shaping instructional behavior. Conversely, non-users may support the same values conceptually but choose alternative approaches due to time constraints, technological comfort, or perceived misalignment with course needs.

The findings also support the idea that effective teaching can take multiple forms. Kahoot users emphasize active learning, well-being, and data-informed decisions, while non-users may prioritize community-building and relational teaching strategies. These are not mutually exclusive nor hierarchical; rather, they reflect different instructional identities and contexts. Kahoot is a valuable tool for many, but its absence does not imply a lack of engagement or innovation.

Technology adoption is deeply connected to faculty identity. For Kahoot users, the platform appears to serve as a natural extension of their teaching values. Non-users may share similar goals but pursue them through different means. This reinforces the idea that decisions about technology use are not solely practical but also philosophical and identity-driven.

These insights have important implications for instructional development. Support programs should go beyond technical training to help faculty explore how educational tools like Kahoot can align with their values and teaching goals. Additionally, addressing practical barriers, such as unfamiliarity with technology or availability of socioeconomic resources to purchase technology, may support more inclusive adoption. Recognizing that non-use often stems from questions of fit rather than resistance can guide more empathetic and effective support strategies.

An implication for further research is the need to explore causality and directionality between pedagogical beliefs and technology adoption. Specifically, future studies could examine whether faculty adopt tools like Kahoot because they already hold student-centered beliefs, or whether using such tools helps shift their instructional philosophy over time. Longitudinal or mixed-methods research could provide insight into how sustained use of gamification platforms influences faculty attitudes, teaching identity, and broader pedagogical practices.

5.4 Limitations

While the findings of this study offer valuable insights into the relationship between Kahoot usage and teaching practices in higher education, several limitations should be acknowledged. First, the sample size was relatively small (n = 48), which may limit the generalizability of the results to broader faculty populations or different institutional contexts. Second, the data were based on self-reported responses, which are subject to potential biases, including social desirability and inaccuracies in self-assessment. Along with the self-reported responses, there was a lack of observational or behavioral data. Due to these reasons, there could be a risk of a Type 1 error in the interpretation of outcomes associated with faculty Kahoot usage. Finally, the cross-sectional design of the study prevents the establishment of causal relationships between Kahoot usage and teaching beliefs or practices. Future research using longitudinal or experimental designs could provide a deeper understanding of how faculty integrate gamified tools over time and how such integration influences student outcomes.

Another key limitation of this study is that the measurement validity of the survey instrument is unclear due to the absence of reported psychometric analyses. Specifically, the Teaching Practices Survey does not include reliability analyses, such as Cronbach's alpha for individual domains or composite scores, making it difficult to determine the internal consistency of the measures. Additionally, there is no evidence of factor structure validation for the Teaching Practices Survey (such as exploratory factor analysis), which raises questions about whether the survey items meaningfully cluster into coherent constructs. Taken together, these omissions could limit confidence in the validity and interpretability of the findings derived from the survey. To address this, we included Cronbach's Alpha data for the three domains of our survey results (Teaching Practices, Course Structure, and Teaching Beliefs). Future researchers could benefit from using a standardized instrument with reported reliability and validity measures. Additionally, a mixed-method design could provide much-needed observational data.

6. Conclusion

This study examined how faculty in higher education use Kahoot and how its adoption relates to broader teaching practices, beliefs about active learning, and attention to student well-being. The findings indicate that while Kahoot users tend to implement more student-centered strategies, including active learning practices, well-being integration, and the use of learning analytics, the most robust differences emerged in the realm of pedagogical beliefs. In other words, Kahoot users expressed significantly stronger beliefs in the effectiveness of active learning and related instructional strategies than did non-users. At the same time, non-users appear to share similar pedagogical values and pursue these goals through alternative means.

A novel contribution of this study is the strong association between Kahoot use and faculty pedagogical beliefs, particularly those aligned with student-centered and research-informed teaching. Although prior research has primarily focused on Kahoot's effects on student engagement and learning outcomes, these findings suggest that instructors who use Kahoot are more likely to value practices such as active learning, timely feedback, the use of learning analytics, and evidence-based instruction. Notably, these differences are more pronounced at the level of beliefs than in observable teaching practices or course design, highlighting the importance of underlying instructional perspectives.

The results further suggest that Kahoot functions more as a complementary tool rather than as a transformative force. Faculty who adopt Kahoot do so as part of a broader commitment to innovative, student-centered teaching; however, effective teaching practices are evident among both users and non-users. This implies that faculty adoption

of educational technology is influenced not only by core instructional values but also by individual preferences, structural constraints, and course-specific contexts.

Future research should build on these findings using longitudinal designs to track changes in faculty beliefs and practices over time, as well as incorporating qualitative methods to further elucidate the motivations behind technology adoption or avoidance. Additionally, studies that include larger and more diverse samples would enhance the generalizability of these findings and provide a more comprehensive picture of the role of gamification in higher education pedagogy.

Declarations

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Competing Interests

None.

Ethical Approval

Ethical standards were strictly observed throughout the research process to preserve the rights of all participants. The researchers provided explicit information about the study's objective, methodology, and scope, and participants were told that their participation was fully voluntary. All respondents provided informed consent, and they were advised that they could decline or withdraw from the study at any moment with no consequences. To protect confidentiality and anonymity, personal identifiers were not collected. All survey results were strictly confidential and used only for academic purposes. The researchers ensured that questions asked in the survey were respectful, non-intrusive, and age-appropriate.

Author's Contribution

Weinland[1]: Author, Conceptualization, Data curation, Formal analysis, Investigation, Visualization, Methodology, Writing – original draft, Writing – review & editing

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