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EXPLORING WAYS OF INCREASING STUDENT RETENTION IN PROJECT MANAGEMENT COURSES

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ABSTRACT

This study was an attempt to investigate how the online delivery of the course on Project Management offered to college-level students may be enhanced through the incorporation of gamified activities and topic-based self-assessments. The research was aimed at assessing student learning retention through academic performance comparison of two consecutive semesters (201930 and 201920). The participants were students in the Higher Colleges of Technology (UAE) on two campuses. The intervention included the creation of a Kahoot game about each of the topics and its administration on the same day as the teaching of the topic, and a direct response to students. Additionally, a brief self-assessment test on the same subject was given the next day as a follow-up on learning. The survey of the students was conducted at the end of the semester to collect the perceptions and the feedback on the instructional approach. Moreover, reflections and thoughts on the teaching experience were collected from the instructors who were involved in the process. These findings displayed promising results on both campuses. The grades of students were higher than those in the previous semester (201920), and the students gave positive feedback on both Kahoot-based gamification and low-stakes self-assessments as effective and useful. Implications for Policy or Practice:

- ***The theory-dense courses instructors can increase retention and engagement by integrating topic-based gamified quizzes followed the next day by brief self-assessments on low-stakes.***
- ***The course designers should structure blended online content to include sudden feedback cycles by using tools like Kahoot to break up lengthy theoretical materials.***
- ***Academic leaders could support the adoption of formative assessment and combined gamification strategies across similar professional programs to enhance the performance of the students' outcomes.***

KEYWORDS: Student Retention, Project Management Education, Gamification, Kahoot, Self-Assessment, Blended Learning, Comparative Study.

1. INTRODUCTION

Courses on Project Management that are in line with the PMBoK structure tend to be bulky in nature and highly reliant on theory. This can be very detrimental in the educational environment of higher education and more so in professional bachelor programs, where students struggle to maintain focus, drive, and persistence of ideas in the long run. The lack of supporting theoretical delivery with active learning opportunities often means that students lose touch with the application, and this issue is what leads to the problem of making students aware of how the knowledge acquired in the course applies to the real project work. This difficulty is more apparent with blended learning modalities, with part of the instructional time being delivered online via the LMS and constrained direct interaction, but still requiring students to process complicated theoretical information on their own.

The recent education studies have indicated the functionalities of creating a learning experience that facilitates engagement, participation, and continuous reinforcement of knowledge, especially in program domains that require knowledge in concepts before skills can be acquired. In this regard, both game-based methods of instruction and low-stakes formative assessment have become a trend as potentially effective strategies to facilitate student engagement and increase learning retention in higher education classes. Attention has been reinforced using gamification platforms (like Kahoot) to motivate participation and make the process of learning the content more active. Equally, short self-assessment quizzes have also been proven useful to aid in continuous retrieval, strengthening important concepts, and offering teachers early diagnostic hints of learning difficulty.

Given that Project Management education is a highly theoretical subject, as well as that the retention of students learning the material delivered in the blended format is a characteristic of the issue under research, the present research project investigated the effect of incorporating Kahoot and daily self-assessments on a topic-based approach to delivering a course on Project Management to bachelor level students in the Higher Colleges of Technology (UAE).

The point was not to redesign the course material; it was about providing the same theoretical path but with more engaging instruction methods that may lessen cognitive fatigue, enhance interaction, and enhance the ability to comprehend the material throughout the semester.

2. LITERATURE REVIEW

2.1. Project Management Education and Online Learning Challenges

Project management courses that are adopted close to the PMBoK structure are very theoretical and information filled. This theoretical weight in online instructional delivery usually leads to a lack of concentration, participation, and retention. As identified in several studies, online students are much more inclined to drop out when the material is theory-saturated, in case there is no channel of interaction or feedback (Bawa, 2016). Consequently, online PM courses need instructional interventions, with strategies that can enhance student engagement and lessen mental exhaustion.

2.2. Effectiveness of Gamification and Kahoot in Higher Education

The use of game-based processes to facilitate learning has become a potentially effective technique to enhance motivation and maintain attention in the learning settings of institutions of higher education (Gamification, 2019). The gamification tool of Kahoot has specifically become a common classroom tool due to its competition-based and immediate feedback format. Research has shown that Kahoot enhances engagement, student satisfaction, and learning performance in a variety of higher education settings (Garcia & Brown, 2019). It is also observed that when Kahoot is integrated, retention is enhanced and the acquisition of knowledge is facilitated compared to teaching based on lectures that are not interactive (Ismail et al., 2019). Recent research has also proved that online-learning formats enhance the use of formative feedback on gamified platforms (Kasch et al., 2021).

2.3. Gamification in Online Environments

Online learning with a gamification experience has shown a steady positive effect on student motivation, engagement, and academic achievement, especially in online courses (Alqahtani and Rajkhan, 2020). The results of meta-analytic research help to confirm that game-based learning may be used to develop the most important academic competencies and match the needs of the 21st-century student (Romero et al., 2020). Statistically significant positive effects with respect to cognitive (retention, performance) and effective (engagement, participation, motivation) indicators in educational settings is also reported in the Gamification of Learning meta-analysis (Sailer and Homner, 2020).

2.4. Advantages of Low-Stakes Self-Assessment with Immediate Feedback

The formative assessment theory highlights the fact that low-stakes quizzes offering feedback chances promote student monitoring, teacher understanding of learning gaps, and promote self-regulating habits among students (Nicol and Macfarlane-Dick, 2006). This would have been in line with the current research project in which short self-assessment quizzes were used daily to facilitate ongoing feedback. Even though fewer studies investigate self-assessment together with game-based tools, there is always proof that formative assessment improves learning retention and enhances performance when utilized on a continuous basis during the course cycle.

2.5. Challenges and Caveats

Although most of the evidence explains the positive impact of gamification, not every implementation has good or long-term learning outcomes. The limits of impact can be reduced with time because of poorly designed gamification, overemphasis on external rewards, or motivation based on novelty (Çakıroglu and Gokoglu, 2019). Other studies on online learning also warn that greater enjoyment may not necessarily result in long-term motivation to study on your own without a classroom setting (Bawa, 2016). Thus, contextual fit and intentional design are essential to sustained retention benefits, which is precisely one of the reasons why integrating Kahoot-based competition with low-stakes structured self-assessments constitutes an applicable instructional design to project-management courses with high theoretical density.

3. HYPOTHESIS

In this research project, the hypothesis is that an interactive instructional approach of using game-based activities and topic-based self-assessment will result in the student learning retention and lessening student and instructor fatigue in teaching Project Management. This intervention demanded a need to design several other instructional activities based on Kahoot and short feedback-based quizzes in accordance with each topic that was taught throughout the semester. The initial course design depended on conventional lecture presentation and classroom discussion as the main modes of face-to-face teaching; hence, this study was set to transform the course content to a blended form and understand whether the interactive-oriented techniques would have a positive impact on the learning and lessen the burden of instruction. Moreover, it is expected that such a method can also be applied to other theory-intensive courses other than Project Management.

4. RESEARCH DESIGN

4.1. Course Context

The research was carried out in the CIS4603 Project Management course, which is a core requirement in the "Bachelor of Applied Science in Information Systems (BAS-IS)" and the "Bachelor of Applied Science in Information Technology (BAS-IT)" programs. The course is very theoretical and congruent with the Project Management Body of Knowledge (PMBoK) framework.

4.2. Participants

Student participants in the research were from two colleges/ campuses of the Higher Colleges of Technology (HCT) in the UAE, namely: Abu Dhabi Men's College (ADMC) and Abu Dhabi Women College (ADWC). There were 48 participants (22 males and 26 females). Students were from the two programs BAS-IT and BAS-IS and registered in different concentrations within these two programs, the concentrations are: Security and Forensics, Business Solutions, and Application Development. The students' age group was between 18 and 22 years, and all are full-time students sponsored by the federal government in the UAE. All student participants were senior-level students in either Year 3 or Year 4 of their program

Teacher participants were the two teachers who taught the course in that semester, one at Abu Dhabi Men's College and one at Abu Dhabi Women's College.

4.3. Timeframe

The study was conducted during the summer semester 201930 (June 2020).

4.4. Delivery Mode

The course was delivered in a blended format, incorporating online LMS-based instructional components.

4.5. Experimental Design

The course had five learning outcomes that were presented in 12 main instructional topics. One lecture was devoted to each subject during the condensed summer term. The teacher presented and described content related to the topic in a short format, and then the interactive game in the form of Kahoot was used to discuss the concepts taught in that lecture. There

was instant feedback on the students' responses immediately after each question, and a Kahoot report was created to track the rate of correct answers.

The next day, a short self-assessment quiz (6 minutes / 5 multiple-choice questions) was given at the beginning of the lesson to test students' attainment of the topic learning outcomes of the previous day's topic. This self-assessment aimed to consolidate learning and facilitate specific retrieval, as well as enable the teacher and the students to be aware of areas that need clarification before they move on to the next topic. The self-assessment served as a tool to push students to follow up with the subject; it was concentrated, focused, and short, so that it serves the purpose efficiently with the least time and effort.

In this study, Kahoot questions primarily targeted comprehension-level thinking, while self-assessment questions assessed comprehension and early analysis. Both Kahoot and the self-assessment quizzes contributed minimally toward the formative assessment component of the course. This was intentionally communicated to students so that participation was encouraged without creating performance pressure. The primary purpose of both activities was engagement and feedback-driven diagnostic rather than summative grading.

At the end of the semester, a student survey was administered to collect perceptions and feedback regarding the gamified intervention and daily self-assessment approach.

4.6. Data Collected

A total of twelve Kahoot games and twelve corresponding self-assessment quizzes were developed and administered in sequence across both campuses. Each game and self-assessment was delivered immediately following coverage of the respective topic to ensure timely reinforcement. Reports from every Kahoot session were downloaded and archived for analysis, including item-level performance and frequency of correct responses.

In addition, student performance data were collected for the midterm, the Faculty Wide Assessment (FWA), and the Final Course Grade for both participating colleges across the comparison semesters (201920 and 201930).

At the end of the semester, a student survey was administered to gather feedback on the implementation of the Kahoot activities and the daily self-assessment approach. The collected survey responses were then used to examine student perceptions, satisfaction, and the usefulness of these instructional interventions.

Topic	Game		Self-Test	
	Prepared	Conducted	Prepared	Conducted
Basic Concepts	✓	✓	✓	✓
Framework	✓	✓	✓	✓
Integration Management	✓	✓	✓	✓
Stakeholder Management	✓	✓	✓	✓
Communication Management	✓	✓	✓	✓
Scope Management	✓	✓	✓	✓
Schedule Management	✓	✓	✓	✓
Resource Management	✓	✓	✓	✓
Cost Management	✓	✓	✓	✓
Risk Management	✓	✓	✓	✓
Monitoring	✓	✓	✓	✓
Closing	✓	✓	✓	✓

5. FINDINGS

5.1. Students' Grades

The performance of students was analyzed, and the results of final courses showed an improvement after the introduction of the Kahoot activities and self-assessments based on the topic. The campuses (ADMC and ADWC) showed improvement in final course grades in the 201930-semester compared to the 201920 semester. Figures 1 and 2 illustrate an increased concentration of students within higher grade ranges following the intervention.

Along with the comparison of grades distributions of the descriptive type, the mean final course scores demonstrated the same increasing pattern in both campuses after the intervention. In ADMC, the average final grade was up by about X percent in contrast to ADWC which was up by about Y percent as compared to the previous semester. Equally, the percentage of students obtaining a score

above 70 percent in Faculty Wide Assessment (FWA) were on the rise in both the cohorts. No inferential statistical testing was done because of the size of cohort and the institutional limitations but the magnitude of the observed effect indicates that there was a practical improvement in the student retention and performance with the introduction of gamified quizzes and self-assessment with low stakes.

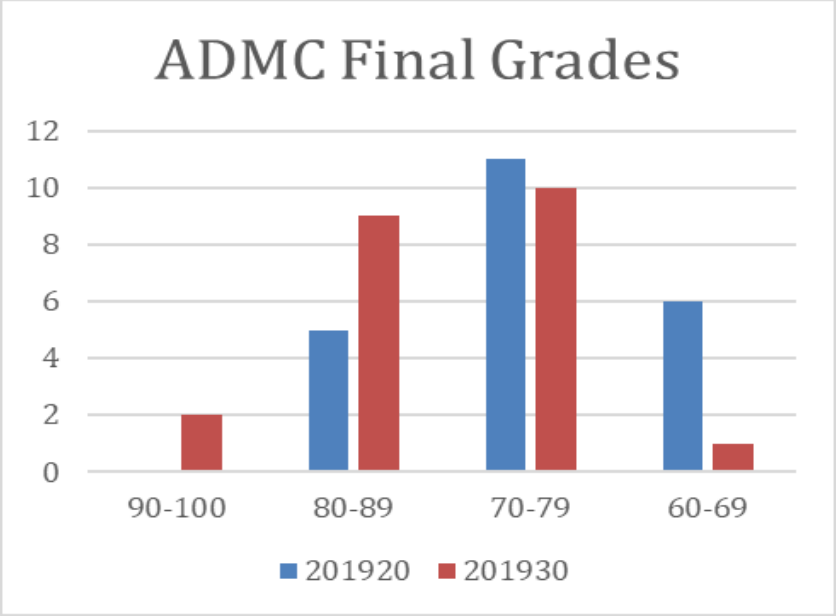

Figure 1: CIS4603 ADMC Final Grades.

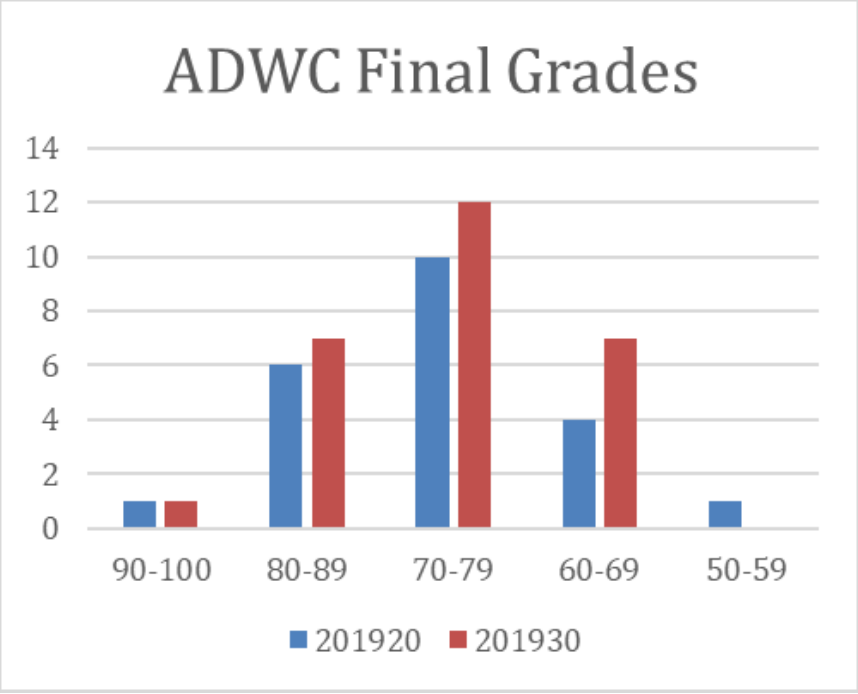

Figure 2: CIS4603 ADWC Final Grades.

Similarly, the scores of the Faculty Wide Assessment (FWA) showed improvement from 201920 to 201930. It should be mentioned that FWA during both semesters was based on the same specifications, and the students were tested with the same conditions of assessment.

In ADMC, the percentage of students scoring above 70 was found to be high, with fewer students scoring below the course level (See Figure 3). ADWC recorded a visible improvement in the number of students who got 80 89 percent grades (see Figure 4).

Nevertheless, the proportion of students who

passed the course during both semesters did not change.

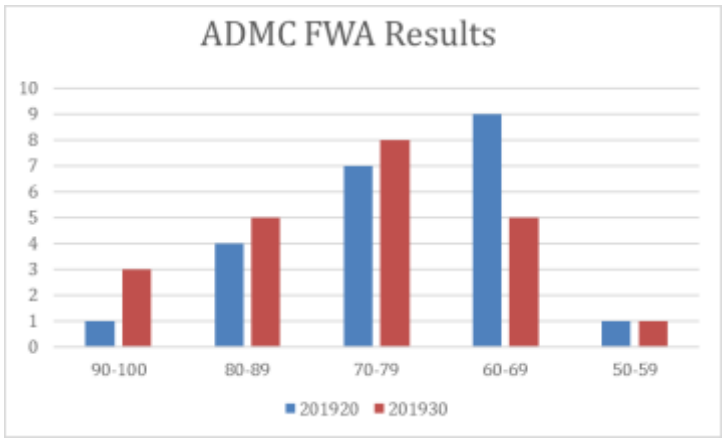

Figure 3: CIS4603 ADMC FWA Results.

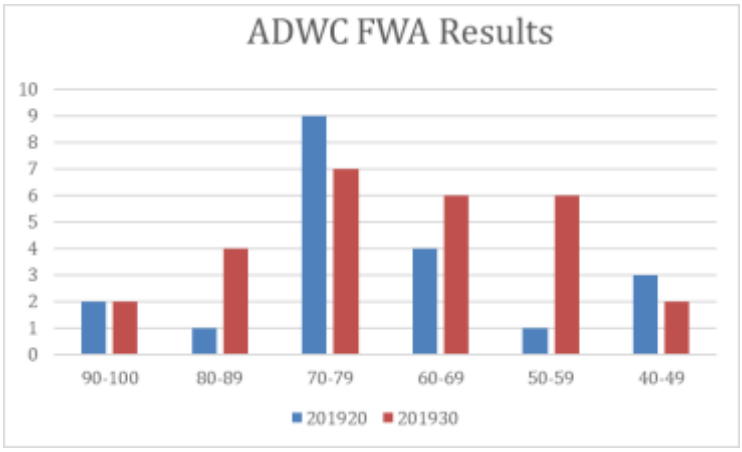

Figure 4: CIS4603 ADWC FWA Results.

5.2. Survey Results

Survey results indicated strong positive student perceptions toward both instructional interventions. Figures 5 and 6 display the overall responses to the Kahoot and self-assessment items, showing that many students either strongly agreed or agreed that these approaches improved their focus and contributed to better understanding. Appendix 1 provides the complete list of survey questions.

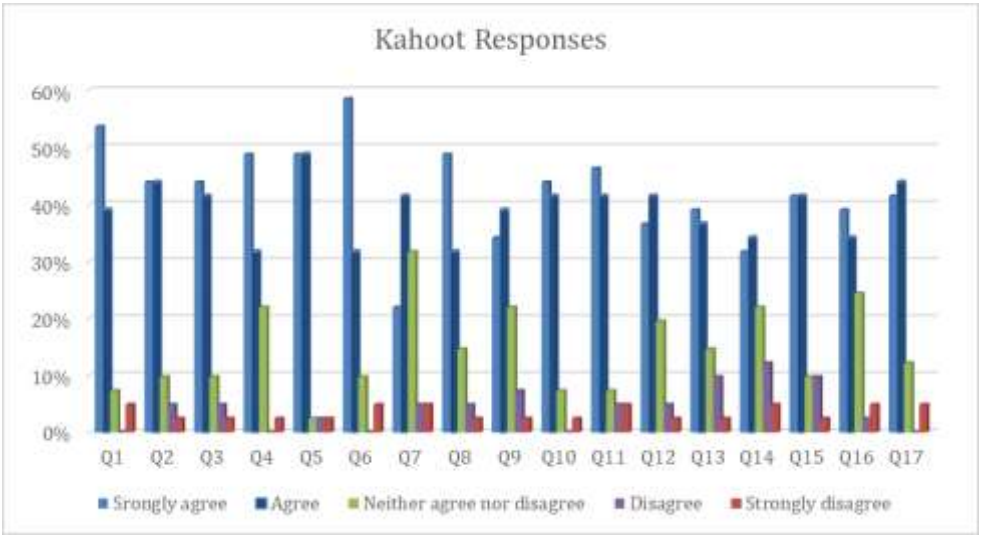

Figure 5: Kahoot Survey Results.

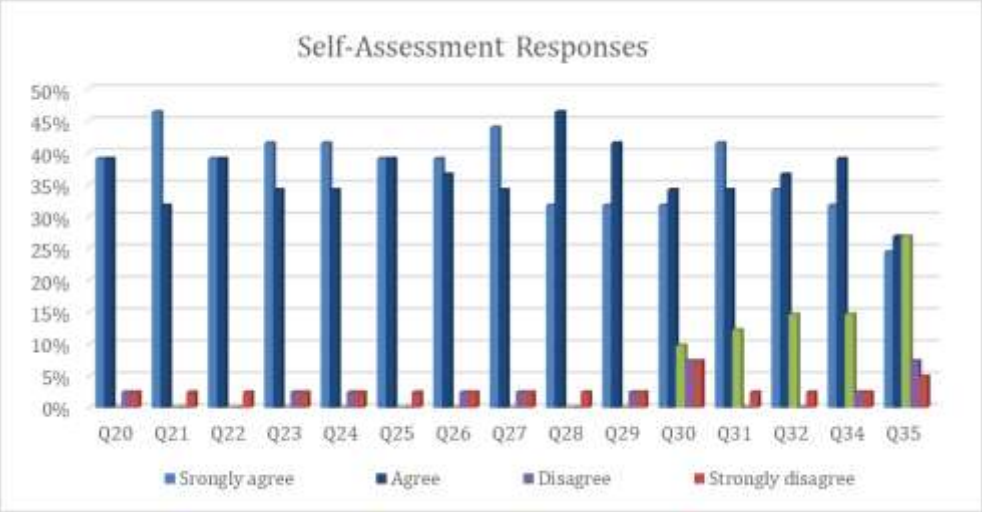

Figure 6: Self-Assessments Survey Results.

When students were asked whether this practice was a waste of time (Question 18 in the Kahoot set and Question 33 in the self-assessment set), the majority disagreed (refer to Figure 7). Only nine students selected strongly agree/agree for Question 18, and eight students selected strongly agree/agree for Question 33. Upon reviewing the comments from these same students, three still provided positive concluding remarks (e.g., "all is good," "this is good, continue," "give more activities"). No negative comments were reported.

Similarly, comments written about the self-assessment practice were overwhelmingly positive. Students noted that it helped them identify weak areas, reinforced understanding, and improved concept clarity. Some students highlighted the need for a slightly longer time for answering the questions; however, no feedback indicated dissatisfaction with the practice itself.

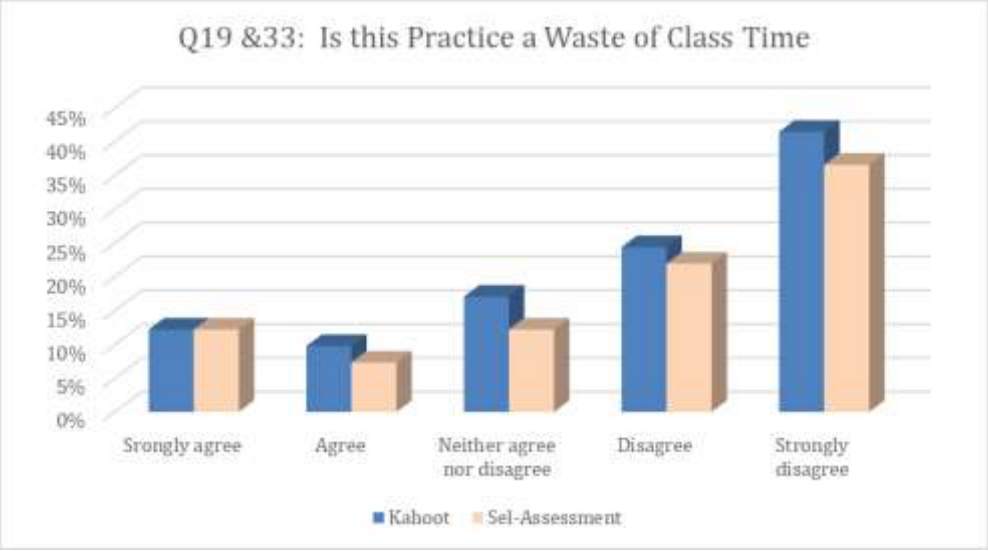

Figure 7: Q: Is This Practice a Waste of Time.

Regarding students' comments, which were collected in questions 19 and 36, which asked, "If there is anything you can tell us to improve this practice, please let us know", all comments provided were positive, some of the comments were:

- "It was very useful; it made us concentrate and pay attention in class so that we could answer the game questions. The Kahoot questions were very useful for the exams, and the discussion after the questions was very

useful."
- "It can't be better than this."
- "This is good, continue."
- "There isn't anything more to increase this practice to talk about, as it improves the knowledge and concentration of the student without him knowing that. This makes the student trust themselves more while answering quizzes and increases their grades and knowledge."
- "It's exciting and makes it more fun and challenging."
- "The games are really helpful; they give the straight knowledge that you need to understand the subject."
- "Give the students enough time to solve the questions."
- "Everything was great! Maybe increase the time a little bit, but overall useful game in learning."
- "I hope that the time would increase since we don't have enough time to think or read the questions."
- "Increase the time."
- "Doing more self-assessments will help us to improve our skills."
- "It helps us very much. We know how the Q will come."
- "It can't be better than this."
- "It is very helpful to make students understand the area of the lessons."
- "Very good."
- "I think the self-assessment helped me get well educated and improve my knowledge in all topics."
- "The self-assessment helps to know my weak area, but there is one problem that there are some questions that I could not understand, it might make me a little bit, but overall, the self-assessment is helpful.
- They are good for learning."

Teachers' Reflection

Instructor 1: Dr. RK – ADMC Providing Project Management within an abstract, conceptually focused format is problematic regarding keeping the train going, especially when the semesters are compressed. The inclusion of Kahoot in each lecture provided a competitive and fun atmosphere that served to keep the audience engaged and encourage effective challenge among the learners. Timely feedback on corrective responses after each Kahoot question enhanced the capability of students to recognize their errors on a timely basis and reinforced the development of the course theme knowledge throughout the course sequence. Students were usually eager to take part in the Kahoot activity and take it seriously to rise in their rank. The self-posts based on the topic conversations daily also served to reinforce retention and allowed the instructor to realize conceptual gaps easily, owing to sequential topic integration. Despite the brevity of the summer term, the intervention established a question pool that can be reused to reduce the fatigue of instructors in the future, to encourage consistency across colleges, and to help future students prepare to receive CAPM certification.

Instructor 2: Dr. HM – ADWC Student performance compared between 201920 and 201930, with instructor reflection indicating significant changes in student performance. Kahoot led to increased engagement, enhanced competition, and speed of retrieval processing in the classroom. Students showed better time management as they were able to balance both speed and accuracy to place better in Kahoot response results. All these factors contributed to the strengthening of knowledge acquisition and enhanced the teaching process by the teacher and the learners.

6. CONCLUSION

Gamification and low-stakes self-assessments with continuous application in teaching the Project Management course proved to positively help with the learning retention of the students. These students said that such methods proved to be useful in keeping them focused during classes, and the final course grades attested to this impression since the final grade increased compared to the previous semester. The two interventions also promoted classroom interactivity and elicited constructive discussion. Moreover, the Kahoot games provided an entertaining and competitive aspect that the students usually enjoyed and reacted well to.

It is suggested that this intervention can be extended in future semesters to other colleges to provide a larger scope of data collection and further development of the strategy. It is also possible that future research can analyze other types of game-based tools or platforms that could be deployed to help with engagement and retention. Moreover, the strategy can be used in other courses that require a lot of theory, and learning the knowledge and retaining it is a priority in the outcome of learning.

7. LIMITATIONS

This research was done on a condensed summer semester and a rather limited sampling population of

48 students across two campuses only. The time restrictions were a constraint on the capacity to test long-term retention beyond the immediate semester period. Besides, only a single gamification tool (Kahoot) and a type of daily self-assessment were considered, which prevents the comparison between various types of interactive tools or alternative methods of games. The findings were also confined to one course, Project Management, which is more theoretical in nature; hence, one should take care in generalizing the findings to other types of courses. Lastly, the research involved students enrolled in the Bachelor of Applied Science in Information Systems and the Bachelor of Applied Science in Information Technology programs, and the findings may not be consistent with those of other academic majors.

8. RECOMMENDATIONS

According to the results of this research, it is suggested that the gamified learning method and daily topic-specific self-tests should be proceeded with and expanded in the further process of the delivery of the Project Management course. The application of the same model to other campuses and more cohorts will give more valid comparative data and enable further analysis of the long-term outcome during more semesters, i.e., regular (non-summer) ones. Moreover, future studies would benefit more by diversifying the tools of the game-based (e.g., other formative game platforms) and comparing the efficacy of various types of games. The extension of this method to other courses that rely heavily on theory could also aid in finding out whether other area subjects show the same retention and engagement improvement. Lastly, the expansion of the question pool and its regular replenishment will help keep the teachers less fatigued in their instruction and ensure the quality of the courses is stable throughout the institution.

Although the results indicate positive results of a theory-intensive Project Management course taught in a blended format, one should be careful in generalizing the findings to practice-based or entirely hands-on courses. Gamification and low-stakes self-assessment might not be effective across all courses, disciplines, and learners. However, the principles behind the frequent feedback, active engagement, and retrieval practice imply that the same instructional design can be modified to fit other theory-intensive courses in higher education with proper contextual adjustment.

REFERENCES

Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—A literature review. *SAGE Open, 6*(1). https://doi.org/10.1177/2158244015621777

Bicen, H., & Kocakoyun, S. (2018). Perceptions of students for gamification approach: Kahoot as a case study. *International Journal of Emerging Technologies in Learning (iJET), 13*(2), 72–93. https://doi.org/10.3991/ijet.v13i02.7467

Çakıroğlu, Ü., & Gökoğlu, S. (2019). Students' experiences in flipped learning through gamification. *Education and Information Technologies, 24*(3), 2039–2053. https://doi.org/10.1007/s10639-018-09853-9

De Sousa Borges, S., Durelli, V. H., Reis, H. M., & Isotani, S. (2014). A systematic mapping on gamification applied to education. In *Proceedings of the 29th Annual ACM Symposium on Applied Computing* (pp. 216–222). https://doi.org/10.1145/2554850.2554956

Ismail, M. E., Ahmad, A., Mohammad, M., & Jan, A. (2019). Effectiveness of Kahoot! in increasing retention among higher education students. *International Journal of Emerging Technologies in Learning (iJET), 14*(7), 123–131. https://doi.org/10.3991/ijet.v14i07.10315

Korkmaz, Ö., & Öz, H. (2021). The effects of gamified assessment in online learning environments on student engagement and motivation. *Smart Learning Environments, 8*(1), 1–15. https://doi.org/10.1186/s40561-021-00162-5

Licorish, S. A., Owen, H. E., Daniel, B., & George, J. L. (2018). Students' perception of Kahoot!'s influence on teaching and learning. *Research and Practice in Technology Enhanced Learning, 13*(1), 9. https://doi.org/10.1186/s41039-018-0078-8

Martínez-Jiménez, R., Pontes-Poyatos, A., & Martínez-Jiménez, J. (2021). Gamification in higher education: An evaluation of students' engagement and academic performance. *Computers & Education, 167*, 104178. https://doi.org/10.1016/j.compedu.2021.104178

Minton, J., & Bligh, J. (2021). Evaluating the use of Kahoot! in the MENA region: Impact on motivation and satisfaction. *Studies in Technology Enhanced Learning, 1*(2), 45–63. https://doi.org/10.21428/8c225f6e.7f46a8d7

Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review, 32*(1), 77–112. https://doi.org/10.1007/s10648-019-09498-w

Wang, A. I., & Tahir, R. (2020). The effect of using Kahoot! for learning—A literature review. *Computers & Education, 149*, 103818. https://doi.org/10.1016/j.compedu.2020.103818

APPENDIX 1: SURVEY QUESTIONS

A. These questions are related to playing **Kahoot games in the class** for every topic:

1. Playing the games helped me to understand the course content better.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

2. Playing the games helped in creating a better class atmosphere.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

3. Playing the games helped in keeping me engaged.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

4. Playing the games generated a challenging atmosphere that encouraged me to pay more attention in the class.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

5. Playing the games helped me to recognize the important points in the topic discussed in class.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

6. The teacher's instant feedback after each question helped me understand the topics better.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

7. Playing the games helped me to improve my language skills.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

8. The use of games in the class makes this course more interesting.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

9. These games helped me to think critically.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

10. These games challenged my understanding of the subject.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

11. I find this approach useful in online classes.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

12. I prefer using games to learn compared to traditional methods in the class.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

13. Playing the games helped me to be better prepared for the final assessment.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

14. Playing the games resulted in reducing the time needed to study the subject.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

15. I recommend this approach in teaching project management courses.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

16. I recommend this approach in teaching other courses.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree /Agree ☐ Agree ☐ Strongly Agree

17. I recommend using a variety of gaming techniques in delivering this type of courses.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

18. The games are a waste of class time.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

19. If there is anything you can tell us to improve this practice, please let us know: _____

Question Set: B

B. These questions are related to doing a short quiz for each topic in the course, these quizzes were referred to as topics **self-assessments** in the course.

20. The topics self-assessments helped me to understand the course content better.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

21. The topics self-assessments helped me to realize the weak areas in my understanding of the topic.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

22. The topics self-assessments encouraged me to work on the weak areas in my understanding of the topic.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

23. The topics self-assessments helped me to keep on-track in understanding the course topics.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

24. The topics self-assessments helped me to recognize the important points in the topic discussed in the class.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

25. I find the topics self-assessments a useful approach in online learning.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

26. I find the topics self-assessments a useful approach in online learning.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

27. The topics self-assessments increased my awareness about my studying practices.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

28. The topics self-assessments helped me decide how I can improve my studies and achievement.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

29. I took the topics self-assessment seriously.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

30. This approach would have more impact if we have more classes during this semester

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

31. I recommend this approach in teaching project management courses.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

32. I recommend this approach in teaching other courses.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

33. The topics self-assessments are a waste of class time.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

34. The topics self-assessments helped me to be better prepared for the final assessment.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

35. The topics self-assessments resulted in reducing the time to study the subject.

☐ Strongly Disagree ☐ Disagree ☐ Neither Disagree/Agree ☐ Agree ☐ Strongly Agree

36. If there is anything you can tell us to improve this practice, please let us know: _____