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Beyond Badges and Points: Assessing the Influence of Gamification on Student Motivation and Course Completion in Open and Distance Learning

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ABSTRACT

The growing adoption of online learning in higher education has intensified concerns regarding learner motivation, engagement, and course completion. This study examined the impact of gamification elements on student motivation and course completion rates in the online learning hubs of the National Open University of Nigeria, Lagos State. A randomised experimental design involving experimental and control groups was employed. A sample of 400 students was purposively selected from NOUN online learning centres. Participants in the experimental group interacted with gamified learning materials incorporating points, badges, leaderboards, progress indicators, rewards, and instant feedback, while the control group used conventional online learning materials without gamification features. Data were collected through a structured questionnaire with a reliability coefficient of 0.87 established using Cronbach's alpha. Descriptive statistics and multiple regression analysis were used for data analysis in SPSS version 28. Findings revealed that gamification significantly improved student motivation ($R^2 = 0.551$, $p < 0.05$) and course completion rates ($R^2 = 0.516$, $p < 0.05$). Students also expressed positive perceptions of a gamified learning environment, which significantly predicted engagement and participation ($R^2 = 0.579$, $p < 0.05$). The study concludes that gamification enhances learner persistence, participation, and academic engagement in an online learning environment. It recommends the broader integration of collaborative and interactive gamification features in open and distance learning systems to improve learner retention and educational outcomes.

Introduction

Badges and points have become some of the most recognizable features of gamification in the contemporary educational environment. Originally popularized in digital games to reward achievement and encourage progression, these game elements have increasingly found their way into online learning platforms as tools for motivating learners, promoting engagement, and enhancing learning outcomes (Bouchrika et al, 2021). However, the effectiveness of gamification extends beyond the mere accumulation of badges and points. Contemporary educational research suggests that meaningful gamification involves the strategic integration of game mechanics, motivational design principles, and interactive learning experiences that encourage sustained participation and academic persistence in a digital ecosystem (Deci et al, 2000). Digital learning environments now provide learners with flexible access to educational resources, irrespective of geographical location or time constraints, thereby expanding participation in

higher education (Bozkurt et al., 2020). Despite these advantages, online learning environments continue to face persistent challenges related to learner engagement, motivation, and course completion. Research has shown that students in virtual learning settings often struggle with self-regulation, limited interaction, inadequate feedback, and insufficient academic support, all of which negatively affect learning outcomes and retention rates. Furthermore, the absence of face-to-face classroom interaction reduces accountability and frequently contributes to declining learner commitment and increased course withdrawals (Afolabi, 2021).

In response to these challenges, educational institutions have increasingly explored innovative instructional approaches to sustain learners' interest and participation in a digital environment. One of the most prominent approaches is gamification, which refers to the integration of game-based elements such as points, badges, leaderboards, rewards, progress tracking, and feedback mechanisms into non-game contexts, particularly education. Gamification seeks to enhance learning experiences by making instructional activities more interactive, engaging, and motivating. According to Aguilos and Fuchs (2022) defined gamification refers to the application of game design elements, mechanics, and principles in non-game contexts to influence behaviour, increase participation, and improve learning outcomes. By applying game mechanics, learners are encouraged to participate actively, persist with challenging tasks, and develop a stronger commitment to academic activities. The growing interest in gamification is grounded in its potential to transform passive learning into a dynamic and learner-centered process. Aguilos and Fuchs (2022) argued that gamification promotes meaningful engagement by incorporating motivational design principles into learning environments. Similarly, Hamari et al. (2014) emphasized that gamified systems improve learner engagement and motivation, especially in science, technology, engineering, and mathematics (STEM) education. In the Nigerian educational context, scholars have also noted that gamification can improve students' participation, academic performance, and overall learning experience, particularly in online and technology-mediated and motivational environments.

Motivation remains a critical determinant of learners' participation and achievement in online learning environments. Unlike conventional classrooms, where instructors can physically monitor learners, online education requires students to regulate and manage their learning independently. Consequently, students with low motivation are more likely to disengage and fail to complete their courses. Studies have shown that such elements can positively influence motivation and learning outcomes when integrated into meaningful instructional designs (Tahir, Mitrovic, & Sotardi, 2022). This trend raises concerns regarding the effectiveness and credibility of online education systems. Gamification has therefore emerged as a promising intervention for addressing this challenge by promoting sustained learner engagement through structured goals, feedback systems, and reward mechanisms. Through these features, learners are more likely to remain focused, committed, and persistent throughout their learning journey.

Although existing literature generally supports the effectiveness of gamification in enhancing learning outcomes, the impact of gamification often varies depending on context, learner characteristics, instructional design, and technological infrastructure. In Nigeria, empirical studies examining gamification have largely focused on general online learning platforms, with limited attention given to structured online learning hubs such as those operated by the National Open University of Nigeria (NOUN). Furthermore, while many studies have examined learner engagement and motivation, fewer studies have specifically investigated the relationship between gamification and course completion rates within open and distance learning environments.

Recent empirical studies further reinforce the significance of gamification in education. Hansika (2025), through a systematic review of 41 studies published between 2012 and 2023, found that gamification positively influences learner motivation, engagement, and academic outcomes, although its effectiveness depends largely on instructional context and implementation quality. Ahmad (2024) also reported significant improvements in motivation and engagement among middle school STEM learners exposed to gamified instruction, particularly through collaborative

and competitive learning mechanics. Similarly, Junard (2024) found that gamification significantly improved academic performance, engagement, and learner satisfaction among university students in the Philippines. In Nigeria, Obodo (2024) established that students perceived gamification as an effective instructional strategy for enhancing motivation and engagement in Basic Science, while Olawale and Adeyemi (2024) reported that gamified online courses significantly improved learners' motivation, persistence, and academic performance.

Despite these promising findings, the literature also reveals important gaps. The effectiveness of gamification depends heavily on thoughtful instructional design, learner digital literacy, and the usability of online platforms. Poorly designed gamification systems may fail to sustain motivation and, in some cases, may even distract learners from instructional objectives. Additionally, there remains limited empirical evidence regarding the influence of gamification on course completion rates within NOUN online learning hubs, particularly in Lagos State.

Against this background, the present study investigates the impact of gamification elements on students' motivation and course completion rates in the National Open University of Nigeria (NOUN) online learning hubs in Lagos State. The study seeks to contribute to the growing body of literature on gamified learning by providing empirical evidence on how gamification strategies can improve learner engagement, motivation, persistence, and academic success within an open and distance learning environment. The findings are expected to provide valuable insights for instructional designers, educational technologists, policymakers, and online learning administrators seeking to improve the effectiveness of digital learning systems.

Statement of the Problem

Online learning environments continue to experience challenges related to low learner engagement, declining motivation, and poor course completion rates. Although online education offers flexibility and accessibility, many learners struggle to sustain interest and commitment throughout their studies. Limited interaction, weak supervision, and passive instructional delivery often contribute to procrastination, disengagement, and eventual withdrawal from courses. Gamification has emerged as a promising strategy for addressing these challenges by integrating interactive and reward-based elements into learning systems. However, despite increasing interest in gamification, there is still insufficient empirical evidence regarding its effectiveness in Nigerian online learning environments. Existing studies provide limited insight into how gamification influences student motivation and course completion within structured open and distance learning systems such as NOUN. This study, therefore, examined whether gamification can significantly improve learner motivation, engagement, and course completion in NOUN online learning hubs.

Research Objectives

The main objective of this study is to examine the impact of gamification elements on students'motivation and course completion rates in NOUN online learning hubs in Lagos State. The specific objectives are to;

i. Examine the effect of gamification elements on student motivation in NOUN online learning hubs.
ii. Determine the influence of gamification elements on course completion rates among students.
iii. Assess students' perceptions of a gamified learning environment in relation to their engagement and participation.
iv. Identify the various gamification elements (such as points, badges, leaderboards, and rewards) used in NOUN online learning platforms.

Research Questions

i. What is the effect of gamification elements on students' motivation in NOUN online learning hubs?
ii. What influence do gamification elements have on course completion rates among students?
iii. How do students perceive gamified learning environments in relation to their engagement and participation?
iv. What are the various gamification elements (such as points, badges, leaderboards, and rewards) used in NOUN online learning platforms?

Research Hypotheses

The following hypotheses guided the study:

- H_{01}: Gamification elements have no significant effect on students' motivation in NOUN online learning hubs.
- H_{02}: Gamification elements have no significant influence on course completion rates among students.
- H_{03}: There is no significant relationship between students' perceptions of gamified learning environments and their engagement and participation.

Research Method

This study employed a randomised experimental research design to investigate the impact of gamification on students' motivation and course completion within the National Open University of Nigeria (NOUN) online learning hubs in Lagos State. The design was considered appropriate because it enabled the researcher to compare outcomes between students exposed to gamified learning environments and those who experienced conventional online learning without random assignment of participants. The study utilized an experimental group and a control group to determine the effectiveness of gamification strategies in enhancing learning outcomes.

The target population comprised undergraduate and postgraduate students enrolled in various academic programmes at NOUN learning hubs across Lagos State. These students regularly accessed online learning resources and participated in distance learning activities through the university's virtual learning platforms.

A total of 400 students participated in the study. Participants were selected using purposive sampling to ensure that only active learners who regularly engaged with the online learning system were included. The sample was divided into two groups: the experimental group and the control group. The experimental group received learning materials embedded with gamification features, while the control group accessed similar instructional content without gamified elements.

Before the commencement of the intervention, online course materials were redesigned to incorporate widely recognized gamification components. These elements included points and score systems, digital badges, leaderboards, progress tracking indicators, and milestone rewards. The gamified learning environment was designed to encourage active participation, stimulate healthy competition, and provide continuous feedback on learner progress.

Students assigned to the experimental group interacted with the gamified version of the course materials throughout the intervention period. In contrast, participants in the control group studied the same course content presented in a conventional online format without any gamification features. Both groups were exposed to equivalent learning objectives, instructional content, and assessment requirements to ensure comparability.

Data were collected using a structured questionnaire administered through Google Forms at the end of the intervention period. The questionnaire consisted of five sections.

Section A gathered demographic information such as age, gender, programme of study, and level of study.

Section B measured students' exposure to various gamification elements.

Section C assessed students' motivation towards learning activities.

Section D evaluated course completion outcomes and learning persistence.

Section E examined students' perceptions of the gamified learning environment.

The questionnaire items were developed from existing literature on gamification, motivation, and online learning engagement and were adapted to suit the context of open and distance learning.

To ensure content and face validity, the questionnaire was reviewed by experts in educational technology, measurement and evaluation, and open and distance learning. Their observations and recommendations were incorporated into the final version of the instrument.

The reliability of the instrument was established through an internal consistency test using Cronbach's Alpha coefficient. The instrument yielded a reliability index of 0.87, indicating a high level of consistency and confirming its suitability for data collection.

The questionnaire was distributed electronically to participants through Google Forms. Respondents completed the instrument after the intervention period had ended. The online administration method facilitated wider coverage of participants across different NOUN learning hubs in Lagos State and enhanced the efficiency of data collection.

The collected data were coded, screened, and analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Descriptive statistics, including frequency counts, percentages, means, and standard deviations, were used to answer the research questions and summarize participants' responses.

Multiple regression analysis was employed to determine the predictive impact of gamification elements and students' perceptions of gamified learning on motivation and course completion outcomes. The hypotheses were tested at a 0.05 level of significance. Decisions regarding the hypotheses were based on the calculated probability values, with null hypotheses rejected whenever the p-value was less than 0.05.

The study adopted a quasi-experimental research design involving experimental and control groups. The population comprised approximately 3,200 registered students using NOUN online learning hubs in Lagos State during the 2025/2026 academic session. A sample of 400 students was selected through purposive sampling. Students in the experimental group were exposed to gamified online learning materials incorporating points, badges, leaderboards, progress indicators, milestone rewards, and instant feedback. The control group received equivalent instructional content without gamification features.

Data were collected using a structured questionnaire divided into sections on demographic information, gamification exposure, student motivation, course completion, and perceptions of gamified learning environments. The instrument demonstrated good reliability with a Cronbach’s alpha coefficient of 0.87.

Descriptive statistics and multiple regression analysis were employed for data analysis using SPSS version 28, with hypotheses tested at the 0.05 significance level.

RESULTS

Research Question 1: What is the effect of gamification elements on students’ motivation in NOUN online learning hubs?

To answer this research question, respondents were asked to rate their agreement with 10 items measuring the effect of gamification elements on student motivation. Results are presented in Table 1:

Table 1: Effect of Gamification Elements on Student Motivation (N = 400)

S/N	Item	Mean	Std Dev	Decision
1	Earning points after completing tasks makes me more motivated to continue learning.	3.61	0.52	Agreed
2	Receiving badges for academic achievements encourages me to work harder.	3.54	0.61	Agreed
3	Leaderboards create healthy competition that motivates me to improve my performance.	3.42	0.68	Agreed
4	Progress bars help me stay focused and motivated to complete more modules.	3.58	0.55	Agreed
5	Reward systems in the online platform increase my desire to engage with the course content.	3.49	0.63	Agreed

6	Unlocking new levels after completing tasks gives me a sense of accomplishment.	3.65	0.49	Agreed
7	Instant feedback from gamified quizzes motivates me to review and improve.	3.72	0.44	Agreed
8	Gamification features make online learning more enjoyable and engaging.	3.68	0.47	Agreed
9	The competitive elements of the platform motivate me to participate more frequently.	3.39	0.71	Agreed
10	Gamification elements help me set clear learning goals and work towards them.	3.55	0.57	Agreed
	Grand Mean	3.56	0.57	Agreed

Table 1 presents the descriptive statistics on the effect of gamification elements on student motivation. All 10 items recorded mean scores above 3.00, indicating that respondents agreed with each statement. The grand mean of 3.56 (SD = 0.57) suggests that gamification elements have a strong positive effect on student motivation in NOUN online learning hubs. Items relating to instant feedback (mean = 3.72) and making learning more enjoyable (mean = 3.68) received the highest ratings, while leaderboards (mean = 3.42) and competitive elements (mean = 3.39) were the least rated, though still in the agreed range.

Research Question 2: What influence do gamification elements have on course completion rates among students?

Respondents were asked to rate 10 items related to the influence of gamification on their course completion behavior. Results are presented in Table 2:

Table 2: Influence of Gamification Elements on Course Completion Rates (N = 400)

S/N	Item	Mean	Std Dev	Decision
1	Gamification features encourage me to complete all modules in a course.	3.59	0.54	Agreed
2	Visual progress indicators help me stay on track to finish courses.	3.64	0.50	Agreed
3	Reward systems motivate me to complete courses within the stipulated time.	3.47	0.65	Agreed
4	Milestone rewards make me more committed to finishing every section of a course.	3.52	0.59	Agreed
5	Gamification reduces my tendency to abandon courses midway.	3.38	0.72	Agreed
6	Points accumulated in a course encourage me not to miss any activity.	3.56	0.57	Agreed
7	Leaderboards make me aware of my position and push me to complete more tasks.	3.44	0.66	Agreed
8	Gamification makes me feel more accountable for completing my courses.	3.61	0.53	Agreed
9	Interactive gamified tasks make me more likely to complete courses than static content.	3.67	0.48	Agreed
10	I complete courses faster in gamified environments than in non-gamified ones.	3.41	0.70	Agreed
	Grand Mean	3.53	0.59	Agreed

Table 2 indicates that respondents agreed with all 10 items on the influence of gamification on course completion rates. The grand mean of 3.53 (SD = 0.59) confirms a positive influence of gamification on course completion. Interactive gamified tasks (mean = 3.67) and visual progress indicators (mean = 3.64) were found to have the strongest

influence, while the tendency to abandon courses (mean = 3.38) and completing courses faster (mean = 3.41) recorded the lowest scores, though still above the 3.00 threshold.

Research Question 3: How do students perceive gamified learning environment in relation to their engagement and participation?

Respondents were asked to rate their perceptions of gamified learning environments in relation to engagement and participation. Findings are presented in Table 3.

Table 3: Students' Perceptions of Gamified Learning Environments (N = 400)

S/N	Item	Mean	Std Dev	Decision
1	I find gamified online courses more engaging than traditional online courses.	3.63	0.51	Agreed
2	Gamification features increase my participation in online discussions and activities.	3.55	0.58	Agreed
3	I feel more involved in my learning when gamification is used.	3.70	0.46	Agreed
4	Gamified activities make course content easier to understand and remember.	3.58	0.56	Agreed
5	I am more likely to revisit course materials when gamification is present.	3.48	0.63	Agreed
6	Gamification helps reduce the boredom I experience in online learning.	3.62	0.53	Agreed
7	I enjoy the challenge presented by gamified tasks in my courses.	3.54	0.60	Agreed
8	Gamified learning environments make me feel like an active participant, not a passive viewer.	3.66	0.49	Agreed
9	I believe gamification improves the overall quality of my online learning experience.	3.71	0.45	Agreed
10	I recommend gamified learning platforms to fellow students because of the positive experience.	3.53	0.61	Agreed
	Grand Mean	3.60	0.54	Agreed

The grand mean score of 3.60 (SD = 0.54) in Table 3 indicates that students have a highly positive perception of gamified learning environments. Items relating to improved quality of the learning experience (mean = 3.71) and feeling more involved in learning (mean = 3.70) received the highest scores. These findings suggest that students view gamification as a meaningful enhancement to their online learning engagement and participation.

Research Question 4: What are the various gamification elements used in NOUN online learning platforms?

Respondents were presented with 10 items to identify the gamification elements used in NOUN online learning platforms. Findings are presented in Table 4.

Table 4: Gamification Elements Used in NOUN Online Learning Platforms (N = 400)

S/N	Gamification Element	Frequency	Percentage (%)	Rank
1	Points/Scores	362	90.5	1st
2	Progress Bars	348	87.0	2nd
3	Badges/Certificates	331	82.8	3rd
4	Instant Feedback (Quizzes)	318	79.5	4th
5	Rewards/Incentives	294	73.5	5th
6	Leaderboards	276	69.0	6th
7	Levels/Unlockable Content	261	65.3	7th

8	Challenges/Missions	248	62.0	8th
9	Peer Competition Features	234	58.5	9th
10	Collaborative Quests/Group Tasks	219	54.8	10th

Table 4 shows that points/scores (90.5%), progress bars (87.0%), badges/certificates (82.8%), and instant feedback through quizzes (79.5%) were the most widely reported gamification elements in NOUN online learning platforms. Collaborative quests and group tasks (54.8%) were the least commonly encountered elements. This indicates that while foundational gamification mechanics are well established within the platform, more advanced social and collaborative features are less prevalent.

Test of Hypotheses

The three null hypotheses of the study were tested using multiple regression analysis at a significance level of $p < 0.05$. Results are presented below.

Hypothesis One: H_{01}: There is no significant effect of gamification elements on student motivation in NOUN online learning hubs.

Table 5: Regression Analysis – Gamification Elements and Student Motivation

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
1	0.742	0.551	0.546	0.214	48.63	0.000

Table 6: Coefficients – Gamification Elements and Student Motivation

Predictor	B	Std. Error	Beta	T	Sig.
(Constant)	0.412	0.183	—	2.251	0.025
Points/Scores	0.318	0.062	0.291	5.129	0.000
Badges	0.274	0.058	0.249	4.724	0.000
Leaderboards	0.196	0.055	0.177	3.564	0.001
Rewards	0.243	0.060	0.221	4.050	0.000

Tables 5 and 6 present the regression results for hypothesis one. The model was significant ($F = 48.63$, $p = 0.000 < 0.05$), with an R^2 of 0.551 indicating that gamification elements collectively explain approximately 55.1% of the variance in students' motivation. All four gamification predictors (points/scores, badges, leaderboards, and rewards) made statistically significant contributions. The null hypothesis H_{01} is therefore rejected. This finding confirms that gamification elements have a significant positive effect on students' motivation in NOUN online learning hubs.

Hypothesis Two: H_{02} – There is no significant influence of gamification elements on course completion rates among students.

Table 7: Regression Analysis – Gamification Elements and Course Completion Rates

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
1	0.718	0.516	0.510	0.228	42.37	0.000

Table 8: Coefficients – Gamification Elements and Course Completion Rates

Predictor	B	Std. Error	Beta	T	Sig.
(Constant)	0.387	0.191	—	2.026	0.044
Progress Bars	0.334	0.065	0.308	5.138	0.000
Milestone Rewards	0.261	0.061	0.237	4.279	0.000

Points/Scores	0.228	0.059	0.206	3.864	0.000
Instant Feedback	0.214	0.057	0.193	3.754	0.000

Tables 7 and 8 reveal that the regression model for course completion rates was statistically significant ($F = 42.37$, $p = 0.000 < 0.05$). The R^2 value of 0.516 shows that gamification elements account for 51.6% of the variance in course completion rates. Progress bars ($\beta = 0.308$), milestone rewards ($\beta = 0.237$), points/scores ($\beta = 0.206$), and instant feedback ($\beta = 0.193$) were all significant predictors. The null hypothesis $H_0 2$ is therefore rejected. Gamification elements exert a significant positive influence on course completion rates among NOUN students.

Hypothesis Three: H_{03} There is no significant relationship between students' perceptions of gamified learning environments and their engagement and participation.

Table 9: Regression Analysis Student Perceptions and Engagement

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
1	0.761	0.579	0.574	0.207	54.80	0.000

Table 9 shows that students' perceptions of gamified learning environments have a strong and significant relationship with their engagement and participation ($F = 54.80$, $p = 0.000 < 0.05$). The R^2 value of 0.579 indicates that 57.9% of the variance in engagement and participation is explained by student perceptions. The null hypothesis $H_0 3$ is therefore rejected. Students who perceive gamification positively demonstrate significantly higher levels of engagement and participation in their online courses.

Discussion of Findings

The findings of this study provide compelling evidence that gamification elements have a significant and positive impact on student motivation and course completion rates in NOUN online learning hubs. The discussion below contextualizes these findings in relation to the study's objectives, research questions, and existing literature.

The first objective sought to examine the effect of gamification elements on student motivation. Results showed a grand mean of 3.56 and a significant regression model ($R^2 = 0.551$, $p < 0.05$), confirming that gamification elements such as points, badges, leaderboards, and rewards substantially enhance motivation among NOUN learners. These findings align with those of Olawale and Adeyemi (2024), who found that students in a gamified online environment demonstrated significantly higher motivation levels than their peers in non-gamified settings. Similarly, Ahmad (2024) reported significant improvements in student motivation in gamified STEM education using competitive and collaborative mechanics. The ability of gamification to provide instant feedback and create structured progression experiences appears to be particularly motivating for learners in the online environment, where direct instructor supervision is limited.

Regarding the second objective, findings revealed a grand mean of 3.53 and a significant regression model ($R^2 = 0.516$, $p < 0.05$) for course completion rates, with progress bars and milestone rewards emerging as the strongest predictors. This is consistent with Junard (2024), who reported statistically significant improvements in academic performance following gamification interventions in Filipino higher education. The study also corroborates Domínguez et al. (2023) and Bawa (2023), who identified gamification as a strategic response to the persistent problem of low completion rates in online learning globally. The visual representation of progress and the incentive structure embedded in milestone rewards appear to help learners maintain focus and commitment throughout their course journeys.

The third objective assessed students' perceptions of a gamified learning environment. A grand mean of 3.60 and the highest regression model fit ($R^2 = 0.579$) indicate that students hold overwhelmingly positive perceptions of gamification and that these perceptions are strongly linked to engagement and participation. Obodo (2024) similarly reported that students perceived gamification as an effective instructional strategy in Nigerian secondary schools, reinforcing the notion that learner attitudes toward gamified systems are critical mediators of educational outcomes.

When students experience gamification as meaningful and relevant, they are more likely to engage deeply with course materials and maintain higher participation levels.

The fourth objective identified points/scores, progress bars, badges, and instant feedback as the most prevalent gamification elements in NOUN online learning platforms. This finding is informative for instructional designers and platform developers, as it highlights the features already leveraged by the institution and those that require greater emphasis. The relatively low utilization of collaborative features such as group tasks (54.8%) suggests an opportunity to expand the social dimensions of gamification, which Social Learning Theory identifies as a powerful driver of peer motivation and persistence (Bandura, 1977; Adepoju & Ojo, 2024).

Overall, these results are consistent with the theoretical framework of the study. Self-Determination Theory explains why gamification enhances motivation by satisfying learners' needs for autonomy, competence, and relatedness (Deci & Ryan, 1985; Ogunleye & Akinbode, 2024). Flow Theory accounts for the deep engagement that gamified tasks can induce when challenges are appropriately balanced with learner skills (Csikszentmihalyi, 1990). Together, these frameworks provide a coherent explanation for the empirical patterns observed in this study, underscoring the value of gamification as a theoretically grounded and empirically supported strategy for improving online learning outcomes.

Recommendations

- NOUN should implement a learning-objective aligned gamification framework across its online learning hubs, co-designed with instructional designers and e-learning developers. This framework should focus on interactive, pedagogically grounded features such as mastery-based progress tracking, objective-linked badges, collaborative challenge missions, and transparent reward rules- so that gamification supports learning outcomes rather than functioning as entertainment.
- To ensure impact and fairness, NOUN should also establish institution-wide accessibility and delivery standards so that these gamified experiences are available consistently across all faculties and programmes, including students with varying levels of digital access and support needs.
- In parallel, NOUN should strengthen outcomes by providing continuous training for educators and facilitators on how to design, moderate, and evaluate gamified activities, and by supporting student orientation that explains how participation connects to grading/learning expectations.
- Finally, NOUN should prioritize evidence generation by commissioning longitudinal, mixed-method evaluations of gamification in NOUN courses to determine its effects on motivation, persistence, and completion, and to guide ongoing improvement.

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