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ROLE OF AI-ENABLED GAMIFICATION IN ENHANCING LEARNING MOTIVATION AMONG UNIVERSITY STUDENTS

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ABSTRACT

Artificial Intelligence and Gamification has emerged as a new trend in the education sector. They have transformed the learning style and pattern of students. In the past, students learned through traditional methods in which they feel boredom and less interest in participation. The evolution of learning and teaching methods in which AI and Gamification has integrated drives innovation and modernization in the sector. This research study aims to evaluate the role of AI-enabled Gamification in enhancing the learning motivation of students in higher education. Along with this, the study also finds that these modern technologies help in increasing participation of students and keep them more engaged and motivated towards learning. The research study follows a quantitative research design in which data is collected from university students and analyzed. The data and facts make the research more accurate. Various past research has done the AI integration in learning and gamification in learning, but the phenomenon of AI-Enabled Gamification remains unexplored. This research study highlights the role of AI-Enabled Gamification in learning in higher education and evaluates how they improve the learning experience of students and keep them motivated towards learning.

Keywords: Learning, Motivation, Engagement, Artificial Intelligence (AI), Gamification, Gamified, Higher education, Students, Participation

1. INTRODUCTION

1.1. BACKGROUND OF AI IN EDUCATION

In these rapidly growing technological advancements in every sector, the educational sector can be one of the prominent sectors which integrated AI-enabled technologies in higher education. The term AI was coined by John McCarthy in 1956. Artificial Intelligence (AI) can be referred to as the ability of computers and machines to mimic human intelligence. It is a system that performs tasks which normally require human intelligence (McCarthy et al., 1955; Russell & Norvig, 2021). Information technologies, mainly artificial intelligence, are revolutionizing the modern education system. In today's world, AI algorithms and educational robots are integral parts of learning management and training

systems (Costa et al., 2017; Garcia et al., 2007). A large number of applications for AI in education (AIED) have emerged. There are real life examples of these applications such as AI tutor harnessing GPT-4 capabilities, delivering personalized learning support, and intelligent feedback in various subjects. Similarly, Duolingo, a language learning application, uses AI- enabled technology to improve learning experiences (Bicknell et al., 2023). The applications of AIED are Fastly evolving and reshaping the overall teaching and learning landscape (Popenici & Kerr, 2017). AI-powered learning management systems (LMS), like Absorb LMS and Docebo, provide multiple AI capabilities to support teaching and learning activities. (Leh, 2022). The era of generative AI technologies has introduced further opportunities, which attracts investment into the development of AIED industry. The global AIED market, valued at USD 1.82 billion in 2021, is projected to grow at a compound annual rate of 36% from 2022 to 2030 (Grand-View Research, 2021).

1.2. CONCEPT OF GAMIFICATION IN LEARNING

Gamification refers to the strategic application of game design principles, mechanisms, and elements into non-game environments. It is mostly facilitated using digital platforms which aim to solve problems, increase engagement, and motivate individuals towards their goals. This technology enhances a gameful and interactive experience, which enhances perceived autonomy, competence, and relatedness among users. Gamifications has its roots in fields like education, business, marketing, and services and is a versatile tool that provides enhanced user experience and creates value in a multitude of settings. The broad impact of gamification across various sectors can be seen as a transformed traditional method of engagement, notably in education.

The term "gamification" was first coined in 2008 by Shirky and Terrill. The word gamification stems grammatically from the verb gamify, which was probably first used by Richard Bartle in his work on the first Multi-user Dungeon (MUD), which was one of the first computer-generated gameful and social virtual worlds (Deterding S., 2015). Gamification (or gameful design) is one of the popular motivation enhancement methods (4). The integration of gaming technology into various sectors of the economy and society has been a commendable trend. A systematic review has revealed that the sector of education and training evolves as a primary area where gamification is both implemented and researched extensively. (10). In the educational context, gamification's potential for transformative impact exceeds beyond only making learning 'fun'. Research concludes that well-designed, gamified environments can encourage a range of cognitive and emotional benefits like enhanced problem-solving abilities, collaborative skills, and resilience in the face of challenges (11). As an instructional phenomenon, it extends to various disciplines (science, technology, engineering, mathematics, arts). In each of them, it employs unique mechanisms and reward systems tailored to the learning outcomes of the discipline (14). There are examples that include point-based grading systems (15); leaderboards for academic achievements (16); and game-based learning platforms that simulate real-world situations (17).

There are various game technologies and AI-enabled gaming applications which make learning more interactive and engaging. Some of them are Duolingo, Prodigy Math, Quizlet, Minecraft, DreamBox Learning, and Kahoot! AI. These games help create an interactive digital classroom with enhanced student learning experience by engaging them in interesting games. These games also help them in knowing their educational performance by scores, leaderboards, and provide personalized and customized learning experience. This technology also helps educators to make interactive classrooms and summarize wide data of students. In traditional classrooms, students may sometime feel less interest in lengthy lectures, theoretical summaries, or repetitive tasks. Gamification helps overcome these challenges by transforming learning experiences into more dynamic and stimulating. For example, students can earn points for completing assessments, unlock new levels after completing one topic, and compete with their classmates in educational quizzes. These types of strategies create a sense of achievement and progress, which directly or indirectly motivates learners to continue improving. Gamification also supports the development of skills such as problem solving, critical thinking, collaboration, and teamwork. When the students participate in gaming tasks, they must do experiments, make decisions, and learn from their mistakes in a supportive environment.

Past research findings indicate that gamified learning environments can enhance students' engagement by 30-60% in comparison with traditional teaching methods. Several educational platforms such as Kahoot, Duolingo, and Classcraft have shown measurable results through gamification. In addition, past surveys conducted in universities reveal that around 70% of students feel more motivated in gamified learning than in traditional classrooms. Overall, empirical evidence highlights that AI-enabled gamification makes learning more interactive and motivates students to learn and increase their academic performance in modern education systems.

1.3. LEARNING MOTIVATION IN HIGHER EDUCATION

Student Motivation is a broadly recognized term as it is one of the most crucial predictors of academic success and persistence in higher education (18, 19). However, many traditional teaching approaches still not be enough to foster sustained academic engagement, which contributes to consistent dropout rates in tertiary education systems worldwide (20, 21). Many meta-analyses have highlighted that active learning methodologies can considerably improve student outcomes. For example, Freeman et al. (22), through a meta-analysis of 225 STEM studies, found that active learning minimizes failure rates by over 50% and maximizes average academic performance. Likewise, Wijinia et al. (23) verified through a meta-analysis that problem-, project-, and case-based learning apply small-to-moderate positive impact on students' motivation.

Learning motivation is an important factor in higher education. Motivation is an internal concept which drives a person to take action. Motivation is a driving force towards taking any action or doing any work. Motivation can be intrinsic or extrinsic. Intrinsic motivation comes within the person, from his feelings, emotions, mindset, etc., While Extrinsic motivation comes from external factors that can be environmental, time, place, work settings, etc. factors. There are some popular theories for motivation. Maslow's Hierarchy is one of them, which defines five stages; each one of them is a motivational factor. In a student's life, motivation is a crucial factor that drives their positive actions towards success. Learning is also a psychological term. 'Learning is a continuous process', which starts from the birth of a child and remains continue till death. Learning is a cognitive process.

1.4. PROBLEM STATEMENT

In today's environment, where everything is digitized, the education sector also witnesses a commendable growth of digital technologies in higher education. Students feel boredom in traditional classrooms and feel less motivated. Traditional learning platforms do not much attract the students, and their engagement ratio is less than digitized platforms. However, Gamification or Gamified Learning such as Scores, Badges, Leaderboards, Points etc., makes the learning more interesting but there are very few specifications about Integration of AI-enabled technology in these games and what amount of impact will be on the students. Especially in the higher education sector and in universities there is less research into it. So, it is worth studying AI-enabled gamification in the context of university students and finding out the motivational impact of it.

1.5. PURPOSE OF THE STUDY

The core purpose of the study is to understand how AI-enabled gamification will impact the learning motivation of the students. The research is done to find out that "To what extent gamified features such as points, badge, leaderboards and AI-enabled personalized feedback will help in gauging students' interest and motivate them to actively take part. Along with this, this research study aims to find out the experiences and perceptions of students to understand their learning motivation and examine the role of AI-enabled gamification in higher education in making learning fun and interesting.

1.6. RESEARCH QUESTIONS

The research study aims to seek insights from the following research questions

- How do AI-Enabled Gamified Learning Platforms affect the learning capacity of university students?
- What is the perception of students about the gamification learning features such as Points, Scores, Badges and Leaderboards?
- To what extent does AI-powered personalized feedback and adaptive learning features enhance the participation and interest of students?
- How does AI-based gamification help in overall learning experience in higher education?

2. LITERATURE REVIEW

The use of digital and modern technology is rapidly growing in the educational sector. This makes learning more interactive, more engaging, and more interesting. It drives students' motivation towards learning new concepts, enhancing their knowledge and understanding critical knowledge by making it easier through AI and Gamifications. Various past research has conducted on this topic to seek insights about how AI and Gamification help in generating students' self-participation in learning, enhancing their motivation and making a positive perception about learning and technologies. In this section, we review past research studies on this topic.

Adi, P.N., Köhler, T., Triyono, M.B. et al. (2026), finds in their study that there is positive effect of AI-enhanced gamification on learners' motivation and engagement. Gamification alone has the power to enhance students' interest and participation. Integrating AI into gamification has created new opportunities for learning analytics, design, and educational decision making. (24)

Patel, C. R. et al. (2026) highlights that AI powered gamification created commendable improvement over traditional e-learning. Technological familiarity was found as a mediating variable between gamification and engagement. They further conclude that learners valued autonomous motivation and adaptive feedback. (25)

Kassenkhan, A. et al. (2026) highlights that Gamification integrated with theoretically grounded and architecturally coherent instructional systems can support cognitive engagement, sustained motivation, and higher-level skill development. Improvements have been seen in learners' engagement, motivational activation, executive functions, and critical thinking outcomes. (26)

Saldivar, J. M. (2026) revealed that AI-enabled gamification is reshaping higher education through transforming educators into adaptive designers, facilitators, and moderators of intelligent systems for instruction. The integration of artificial intelligence and gamification encourages personalized, engaging, data-driven learning while aligning with Sustainable Development Goal 4 (SDG 4): access to quality education. (27)

Alwakid, W. N., et al. (2026), finds that motivation of students is most strongly impacted by perceived enjoyment, followed by points and badges, and collaboration. They found that leaderboards, rewards, and feedback do not have a significant effect on motivation. (28)

Zang, Z. (2025), through his study, revealed that critical design elements - clear goals and rules, diagnostic feedback, adaptive challenge, and the balance between autonomy and control which do not operate in isolation, but they function through supportive and progressive interactions. These elements increase learners' flow/immersion and cognitive engagement, by which facilitation of comprehension and transfer improved. (29)

Ahmed, F. E. Y., et al. (2026) highlights that the usage rates of AI-enabled games for teaching vocabulary went through Quizlet, Kahoot, and Wordwall in which Quizlet was the most frequently used. These usage rates and preferences for Quizlet show that teachers value intuitive systems that are broadly available and adaptable across different educational settings. (30)

Aluko, H. A., et al. (2026) revealed that adaptive VR environments boost learning through minimizing task difficulty, providing real-time feedback, and enabling sensory interaction. VR supports students' deeper understanding and higher engagement in learning tasks. Overall, AI-VR enhances adoption levels, learning engagement, and problem–solving skills. (31)

Long, D. Y., et al. (2026), finds that AI powered tools like chatbots, adaptive systems, and predictive analytic fosters engagement most effectively when integrated within interactive teaching practices such as flipped classrooms, project-based learning, and scaffolded feedback loops. They introduce the PMAISE model (Pedagogical Mediation of AI for Student Engagement), which maps the alignment between AI technologies, pedagogical strategies, and the affective, behavioral, and cognitive dimensions of engagement. (32)

Kalaivani, N., et al. (2026), while evaluating the role of AI powered games in the fields of Engineering and technology for enhancing quality education finds that AI-powered educational games facilitate fictional understanding, complex thinking and engagement of students. These tools help personalize learning experiences, making complex engineering and technical concepts more understandable and interactive. (33)

Khan, M. K. S., et al. (2026) finds that AI-based groups acquire a higher increase in proficiency and motivation through adaptive feedback and task personalization. They also identified the challenges related to teacher preparedness

and data privacy. The study suggests integrating AI within established pedagogical frameworks and strengthening institutional support. (34)

Ren, W., et al. (2026) finds that all the antecedents, including intrinsic motivation, immediacy, and feedback, immensely impacted flow, excluding telepresence and competition and suggest theoretical understanding into digital learning engagement and provide practical implementations for designing AI-powered educational platforms that enhance sustained learner commitment through optimized user experiences, personalized feedback mechanisms, and instructional strategies that promote flow. (35)

Alqurni, J. (2026), while exploring the role of agentic AI in enhancing self-efficacy, autonomy support, and self-learning motivation in higher education, finds that students' perceived agency of AI meaningfully predicts usefulness, ease of use, and autonomy supporting, while ease of use meaningfully fosters AI-enabled self-efficacy. (36)

Shaharom, N. B. et al. (2026) finds that perceived AI affrordances positively forecast behavioral, cognitive, and emotional engagement indirectly through enhanced need satisfaction. AI self-efficacy slightly boosted the relationship between perceived affordances and need satisfaction, which suggests a meaningful boundary condition in the motivational process. They highlight the key role of psychological need satisfaction in transforming contextual resources into sustained classroom involvement. The study also highlights the importance of designing learning environments rather than technologies that effectively support students 'autonomy, competence, and relatedness. (37)

Potluri, R. M., et al. (2026) finds that system-related factors, especially usability, engagement, content quality, accessibility, and perceived instructional quality, impact students' assessments of AI-driven learning environments. Students' trust in AI-based instruction enhanced further when they had access to high-quality, reliable content. (38)

3. RESEARCH METHODOLOGY

The research study on "Role of AI-Enabled Gamification in Enhancing Learning Motivation Among University Students" is basically an empirical study, in which primary data is collected and analyzed through software. From this research study, we want to measure the Role of AI-Enabled Games in grabbing and generating students' attention and motivation. To measure the effect and their relationship, some tests have been applied and results were generated.

3.1. RESEARCH DESIGN

The research study uses quantitative research design. To analyze the role of AI enabled gamification in enhancing students' motivation among university students, the research design was chosen. The quantitative data is collected and analyzed through software to generate results.

3.2. AREA OF THE STUDY

The area of this study includes higher education students at university. The university students are in the research area and data was collected from them.

3.3. SAMPLING

The sampling population was university students. The sample size was 110 students. Convenience Sampling Technique was used to identify samples. The students took part voluntarily.

3.4. VARIABLES OF THE STUDY

The study has these following variables:

IV: AI-Enabled Gamification

This is the independent variable which influences and causes change. This variable includes these sub-variables:

1) Make learning interesting
2) Personalized Learning Experience
3) Points, Badges, and Rewards

4) Leaderboards
5) Interactive gaming features
6) AI Feedback
7) Gaming Educational Applications
8) Simplified learning

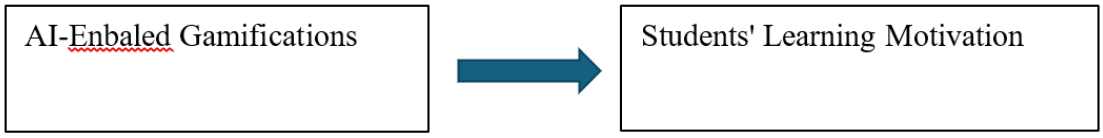
DV: Students' Motivation

This is the dependent variable which is the effect of the cause - AI-enabled gamification. This variable includes these sub-variables:

1) Learning Motivation
2) Learning Engagement
3) Encouragement to Task Completion
4) Continuous Learning
5) Increasing Interest
6) Self-learning Encouragement
7) Improved Focus
8) Satisfaction by achieving goals, and rewards

3.5. CONCEPTUAL DIAGRAM

Here is the Conceptual diagram for the research study



Source: Curated by the author

3.6. HYPOTHESIS

H1: There is a significant positive impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education.

H0: There is no significant impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education.

3.7. DATA COLLECTION METHODS

Data was collected through questionnaires by google forms. Close-ended Questions were asked by a 5-point Likert scale. The questionnaire was divided into 3 sections, first was Demographic, second was AI-Enabled Gamification in Learning and the last section was Learning Motivation.

3.8. DATA ANALYSIS

The data analysis is conducted by the Jamovi Software. Descriptive analysis has been done to understand the population's mean and standard deviation. Reliability was checked by Cronbach's alpha.

4. DATA ANALYSIS AND INTERPRETATION

In this section, the data have been analyzed through Jamovi software. Reliability tests, Descriptive analysis, and hypothesis testing have been conducted. The data was collected through google forms. The data analysis section comprises three parts: Reliability analysis, Descriptive analysis, and Hypothesis testing. Reliability analysis is done by

using Cronbach's alpha through software. Data, which is collected, coded through excel, and then imported into Jamovi Software and analyzed.

4.1. RELIABILITY ANALYSIS

Reliability Analysis has been conducted by jamovi software and the test which is used is Cronbach's alpha. The test has been applied on two variables: AI-Enabled Gamification (Independent) and Student's Learning motivation (Dependent).

4.1.1. AI-ENABLED GAMIFICATION

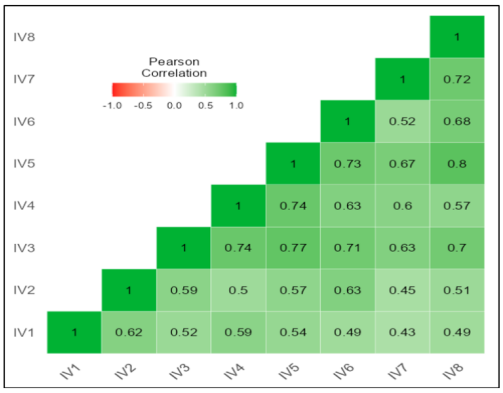
The reliability analysis of AI-Enabled gamification variable is as follows:

Table 1

Table 1 Reliability Analysis of AI-Enabled Gamification

	Mean	SD	Cronbach's α	McDonald's ω
scale	3.56	0.765	0.923	0.928

Interpretation: The value of Cronbach's alpha is 0.923, which shows that the data is highly reliable. The reliability analysis is done through the jamovi software. The analysis includes variable-related AI-enabled gamification. The mean value is 3.56 and SD is 0.765, which shows the data variate 0.76 approx., from its mean. The variation is moderate to low, which shows that the data points are close to mean. This shows less fluctuations in the data. The value of Cronbach's alpha shows that the data is excellent and reliable. The value of Cronbach's alpha suggests that the data collected has a high reliability because it is greater than 0.7, which shows the excellency of the data. The analysis checks the internal consistency of the data. Internal consistency means that the items or variables are interconnected and hence evaluates the same fundamental concept and generates a consistent result.



Source: Curated by the author

Interpretation: The correlation heatmap further shows moderate to strong positive inter-item correlations, within each construct. The figure shows high positive correlations which suggest that the variables move in the same direction. The variables are highly correlated to each other. The heatmap is generated by the software and shows that the items are highly corelated within.

4.1.2. STUDENT'S LEARNING MOTIVATION

The reliability analysis of Students' learning motivation Variable is as follows:

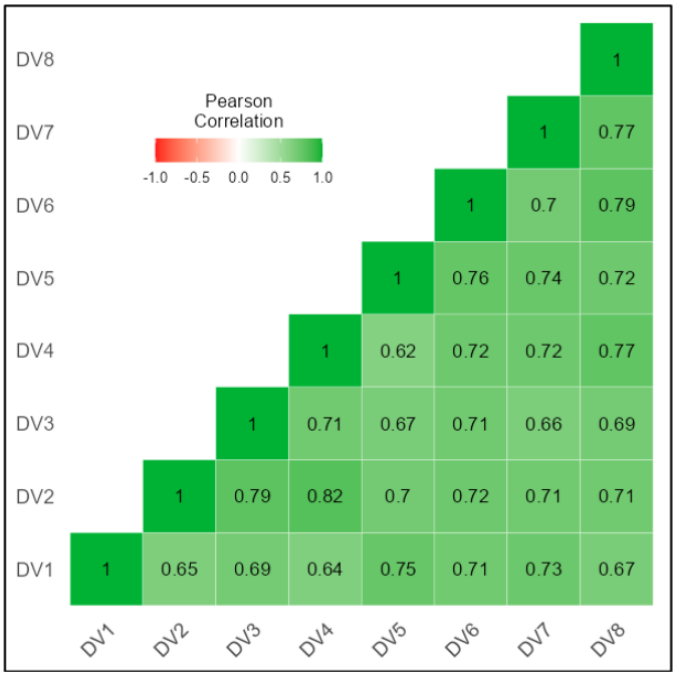
Table 2

Table 2 Reliability Analysis of Student's Learning Motivation

	Mean	SD	Cronbach's α	McDonald's ω

scale	3.59	0.761	0.952	0.953

Interpretation: The value of Cronbach's alpha is 0.952, which shows that the data is highly reliable. The reliability analysis is done through the jamovi software. The analysis includes variable-related Student's learning motivation. The mean value is 3.59 and SD is 0.761, which shows the data variate 0.76 approx., from its mean. The variation is again moderate to low, which shows that the data points are close to mean. This again shows less fluctuations in the data. The value of Cronbach's alpha shows that the data is excellent and reliable. The value of Cronbach's alpha suggests that the data collected has a high reliability because it is greater than 0.7, which shows the excellency of the data. The analysis checks the internal consistency of the data. Internal consistency means that the items or variables are interconnected and hence evaluates the same fundamental concept and generates a consistent result.



Source: Curated by the Author

Interpretation: The figure shows high positive correlations which suggest that the variables move in the same direction. The variables are highly correlated to each other. The heatmap is generated by the software and shows that the items are highly corelated within.

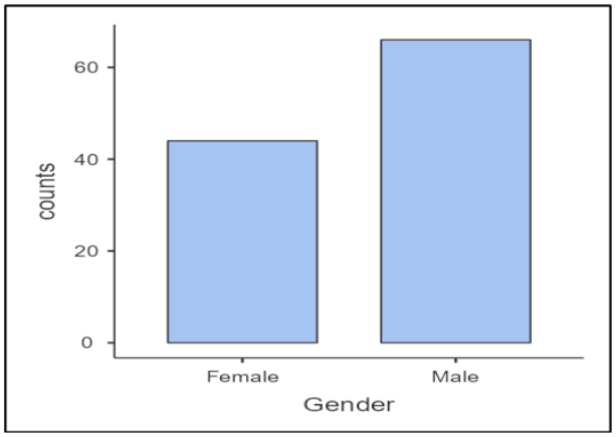
4.2. DESCRIPTIVE ANALYSIS

The descriptive analysis was also conducted by Jamovi software. Descriptive analysis of data shows the features of data. The mean value and standard deviation of each variable have been analyzed. The characteristics of nominal data also have analyzed through descriptive analysis

4.2.1. GENDER

Table 3

Table 3 Gender Descriptives		
Total	**110**	**100%**
Female	44	40%
Male	66	60%



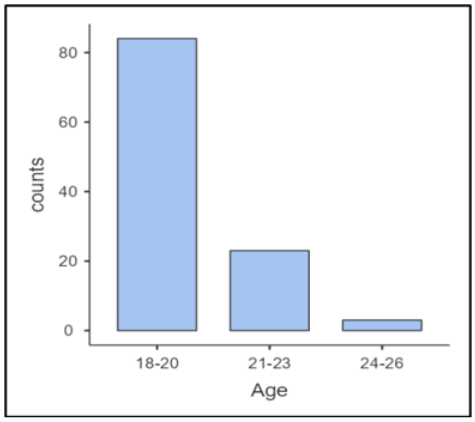
Source: Curated by the Author

Interpretation: There is total 110 respondents, from which 40% are female and 60% are male. The figure shows the number of male and female that is 60 and 40 respectively.

2.2 Age

Table 4

Table 4 Age Descriptives		
Age	**Counts**	**%of Total**
18-20	84	76.40%
21-23	23	20.90%
24-26	3	2.70%



Source: Curated by the Author

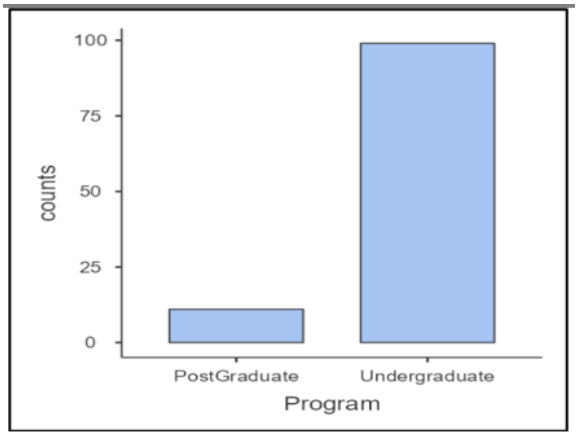
Interpretation: There is a total of 110 respondents with different age groups. 76.40% of students lie between 18-20, whereas only 20.90% of students lie between 21-23 and very few students that is 2.70% of students age lie between 24-26. This shows that major respondents are from the 18-20 age group. Only 3 students are from 24-26.

4.2.2. PROGRAM OF STUDY

Table 5

Table 5 Program Descriptives		
Program	**Counts**	**%of Total**

PostGraduate	11	10.00%
Undergraduate	99	90.00%



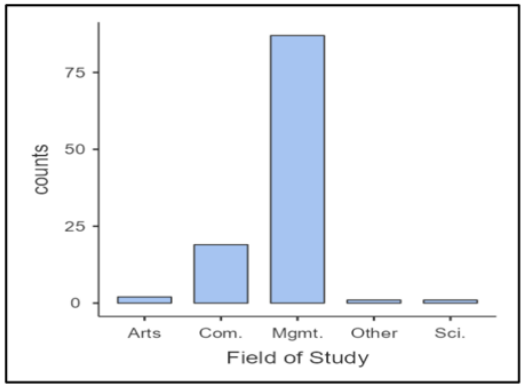
Source: Curated by the Author

Interpretation: The graph and table show that 90% of students belong to the undergraduate program and only 10% of students are from the post-graduate program. From the total respondents, 99 students are pursuing undergraduate courses and only 11 students are pursuing post-graduate study.

4.2.3. FIELD OF STUDY

Table 6

Table 6 Descriptives of Study Field		
Feild of Study	**Counts**	**%of Total**
Arts	2	1.80%
Com.	19	17.30%
Mgmt.	87	79.10%
Other	1	0.90%
Sci.	1	0.90%



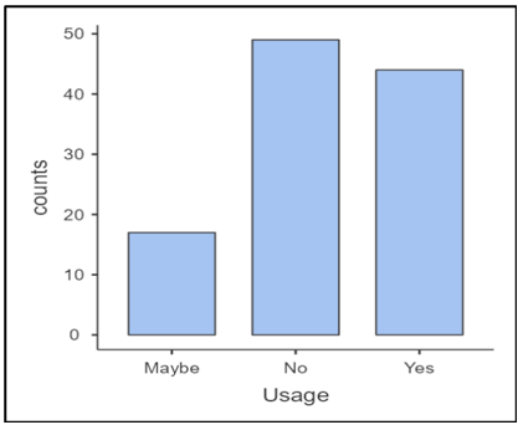
Source: Curated by the Author

Interpretation: There is a total of 110 respondents with different streams like arts, commerce, management, science, and other. There are 2 arts students, 19 commerce students, 87 management students, 1 science student and 1 from other streams. This shows that major respondents are from the management stream. So, the results of study will be more based on management students.

4.2.4. USAGE OF AI-ENABLED GAMES

Table 7

Table 7 Usage Descriptives		
Used	**Counts**	**% of Total**
Maybe	17	15.50%
No	49	44.50%
Yes	44	40.00%



Source: Curated by the Author

Interpretation: This graph shows the number of students who have used AI-enabled games. There are 40% of students who said yes that they used these games, 17 said may be, means they are not sure about it. 44% of students said no that they don't used these games.

4.2.5. AI-ENABLED GAMIFICATION VARIABLES

Table 8

Table 8 Descriptives of AI-Enables Gamification variables (IVs)								
	IV1	**IV2**	**IV3**	**IV4**	**IV5**	**IV6**	**IV7**	**IV8**
N	110	110	110	110	110	110	110	110
Mean	3.47	3.62	3.64	3.61	3.63	3.56	3.51	3.53
Standard deviation	1.11	1	0.946	1.01	0.866	0.883	0.875	0.875

Interpretation: This table shows the mean and standard deviation of the independent variables. This section comprises of AI-Enabled Gamification variables such as: Make learning interesting, Personalized Learning Experience, Points, Badges, Rewards, Leaderboards, Interactive gaming features, AI Feedback, Gaming Educational Applications, and Simplified learning. Most of the variables mean is above 3 and close to 4, so this shows that major respondents agreed to the questions asked them about AI-enabled gamification. Which shows positive responses to these types of games. The variable IV3 which is about Points, Badges and Rewards has the highest mean, which is 3.64, showing a high level of agreement to this variable. The Standard deviation of variable IV1 is 1.11 which suggests high variability in the data, showing less consistency among participants. The S.D of IV2 is 1, and IV3 is 0.946; both show moderate variability. The S.D of IV4 is 1.01 showing moderate to high variability. The S.D of IV5 is 0.866, IV6 is 0.883, IV7 is 0.875, and IV8 is 0.875; they all show low to moderate variability.

4.2.6. STUDENT'S LEARNING MOTIVATION

Table 9

Table 9 Descriptives of Student's Learning Motivation								
	DV1	DV2	DV3	DV4	DV5	DV6	DV7	DV8
N	110	110	110	110	110	110	110	110
Mean	3.52	3.58	3.59	3.55	3.58	3.6	3.56	3.65
Standard deviation	0.81	0.961	0.87	0.954	0.892	0.826	0.873	0.894

Interpretation: This table shows the mean and standard deviation of the dependent variables. This section comprises of Students Learning Motivation Variables such as: Learning Motivation, Learning Engagement, Encouragement to Task Completion, Continuous Learning, Increasing Interest, Self-learning Encouragement, Improved Focus, and Satisfaction by achieving goals, rewards. The mean score of these variables is 3.52, 3.58, 3.59, 3.55, 3.58, 3.6, 3.56, and 3.64, respectively. The mean score is above 3 and close to 4 of all variables, showing agreement. The variables Satisfaction by achieving goals and rewards (DV8) has the highest mean 3.65 among all of them, showing high-level of agreement to this variable. The S.D. of these variables is 0.81, 0.961, 0.87, 0.954, 0.892, 0.826, 0.873, 0.894 respectively; they all are less than 1, showing low to moderate variability. The items show consistency but not a higher level.

4.3. HYPOTHESIS TESTING

The hypothesis testing has been conducted by Jamovi Software, using Linear regression. The hypothesis is as follows:

H1: There is a significant positive impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education.

H0: There is no significant impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education.

Table 10

Table 10 Linear Regression (Model Fit Measures)		
Model	R	R^2
1	0.633	0.401

Table 11

Table 11 Linear Regression (Model Coefficients – DV Mean)					
Predictor	Estimate	SE	t	p	Stand. Estimate (β)
Intercept	1.308	0.2732	4.79	< .001	
IV Mean	0.636	0.0749	8.5	< .001	0.633

Interpretation: In table 10, the value of 'R is 0.633, which suggests a moderate to strong positive relationship between AI-enabled gamification (IV) and Students learning motivation (DV). The value of 'R2' is 0.401, which means 40.1% of the variance in the DV (Dependent variable) is explained by the IV (Independent Variable)

In table 11, the value of Intercept estimate is 1.308, which means, when the independent variable is 0, the predicted value of the dependent variable is 1.308. The estimate of IV mean is 0.636, which means 1 point increase in IV mean leads to a 0.636 increase in dependent variable. The $p < .001$ in both Intercept and IV mean suggests high statistically significant results. The t value of IV means 8.5, showing a strong effect. The standard estimate (β) is 0.633, which shows that IV means have a strong impact on dependent variable.

The Linear regression analysis results suggest that AI-Enabled Gamification has a significant positive impact on Student's Learning Motivation. The standard estimate (β) is 0.633 and $p < .001$, confirms this relationship. Therefore, the

null hypothesis is rejected, and the alternate hypothesis is accepted. This indicates that increasing use of AI-enabled gamification will positively influence students' learning motivation.

5. RESULTS AND FINDINGS

The research study Impact of AI-Enabled Gamification on students' learning motivation in higher education conducted to understanding the effect of these AI –games, as in todays' digital era, from universities to schools, everyone has integrated AI powered learning platforms such as games, chatbots etc. So, this becomes important to know the effect of these games on students' learning motivation, classroom engagement, self-study encouragement. To understand this, the data have been collected and analyzed through software by various tests such as descriptive analysis which determine mean and standard deviation, linear regression for hypothesis testing. Through data analysis, the results, and findings, it can be interpreted that increasing use of AI-enabled gamification will positively influence students' learning motivation. The results reject the null hypothesis and select the alternate hypothesis. Hence, this can be suggested that AI-enabled games help in motivating students in learning and increase their engagement and encouragement towards studying. Points, Badges, Rewards keep students motivated in learning. There is a significant positive impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education. These games provide personalized learning experience which helps students in self-learning.

6. CONCLUSION

The evolution of learning and teaching methods in which AI and Gamification has integrated drives innovation and modernization in the sector. This research study aims to evaluate the role of AI-enabled Gamification in enhancing the learning motivation of students in higher education. Along with this, the study also finds that these modern technologies help in increasing participation of students and keep them more engaged and motivated towards learning. Increasing use of AI-enabled gamification will positively influence students' learning motivation. The results reject the null hypothesis and select the alternate hypothesis. Points, Badges, Rewards keep students motivated in learning. There is a significant positive impact of AI-Enabled Gamification on Student's Learning Motivation in Higher education. These games provide personalized learning experience which helps students in self-learning. These games also help them in knowing their educational performance by scores, leaderboards, and provide personalized and customized learning experience. This technology also helps educators to make interactive classrooms and summarize wide data of students. Overall, it can be concluded that AI-Enabled gamification should be integrated into classroom learning so that it can keep students motivated and encourage them.

CONFLICT OF INTERESTS

None.

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