

The Effects of Gamified Platforms on Enhancing Learners' Ambition

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Abstract

Gamification represents a novel technological approach that significantly enhances learners' motivation and ambition to advance in their educational pursuits. Gamification represents a significant tool in the advancement of digital platforms and learning management systems. Ambition represents a significant variable within the field of positive psychology, and the enhancement of its indicators has emerged as a crucial requirement for learners in today's context. A significant lack of research exists regarding the effects of gamification. This study investigates the influence of gamification on ambition. The Quasi-Experimental Approach was employed to analyse the differences between the first experimental group utilising gamified platforms (G1-Gamified Platforms) and the second experimental group engaging with the same platform devoid of gamification (G1-Non-gamified Platforms). The sample for this study comprised (80) ninth-grade students from Madinah, who were randomly assigned to the two groups involved in the investigation. A scale for ambition was created, encompassing four dimensions: optimism, goal-setting ability, acceptance of novelty, and resistance to failure and frustration, comprising a total of 35 items. The findings indicated that gamified platforms offer a distinct advantage over their non-gamified counterparts in fostering ambition. The impact of gamification elements on enhancing ambition among students across various educational levels calls for further exploration. The exploration of digital platforms and their integration of gamification strategies reveals a significant relationship with user ambition. This study aims to analyse how these elements interact and influence user engagement and motivation within various contexts.

Keywords: Digital Platforms, Gamification, Ambition.

Introduction

The increasing popularity of gamification has led to the development of gamified educational platforms, including Talent, Kahoot, ClassDojo, Quizizz, and Duolingo. The integration of gamification elements within cross-platform learning processes serves to diversify educational opportunities in an engaging manner. This approach fosters behavioural enhancement, encourages participation, enhances enjoyment, and captures students' interest, ultimately expanding their learning experiences (Alzahrani & Alhalafawy, 2023). Furthermore, the incorporation of gamification and game-based learning represents contemporary trends that leverage game elements to enhance desired behaviours and promote improved learning outcomes (Alzahrani & Alhalafawy, 2013). Numerous studies (Al-Hafdi & Alhalafawy, 2024; Alhalafawy & Zaki, 2022; Alhalafawy & Zaki, 2019; Alrashedi, Najmi, et al., 2024; Alzahrani & Alhalafawy, 2023; Alzahrani & Alhalafawy, 2022; Alzahrani, Alhalafawy, & Alshammari, 2023; Alzahrani, Alshammari, & Alhalafawy, 2022; Zaki, 2019; Zaki, El-Refai, Alharthi, et al., 2024) indicate that the implementation of gamification can facilitate the creation of an interactive and engaging learning environment for students. The implementation of cross-platform learning through gamification presents novel avenues that improve problem-solving abilities, augment knowledge acquisition, and foster student motivation by actively involving learners in the educational experience. The direct influence of gamification on student learning outcomes arises from its ability to enhance the learning process, increase learner engagement with educational materials, and inspire learners to broaden their knowledge and cultivate their ideas. Moreover, the implementation of gamification within educational platforms has the potential to improve students' levels of social engagement and motivate them to offer electronic feedback regarding digital learning resources (Zeybek & Saygi, 2024). A standard approach to gamification design seeks to enhance learners' performance and elevate their

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motivation to engage in learning tasks, as evidenced by their achievement metrics (Sharma, Lim, Kumar, Verma, & Kumra, 2024)

The cultivation of academic ambition in children from an early age is essential due to its significant influence on both individual and collective outcomes. This ambition enhances motivation for positive learning experiences. A learner with high ambition is likely to distinguish themselves through a commitment to personal development and academic improvement, ultimately positioning themselves to contribute effectively to their community and nation. Furthermore, this ambition facilitates progress and success across various domains by enabling individuals to recognise their potential and abilities, leveraging their experiences to attain excellence (Rabou, Alsali, Alakashee, & Moh'd Tarawneh, 2023). The significance and function of this concept are deeply rooted in assessing the extent of the learner's educational objectives, accomplishments, and ambition within the academic setting, which may influence their choices and scholarly outcomes (Jackson et al., 2017; Gungor, 2019; Eric & Benedict, 2015).

Ambition constitutes a significant variable influencing learner behaviour, as it is difficult to envision a learner achieving excellence without a suitable degree of ambition. This drive is crucial in motivating individuals to pursue greater success. Ambition held by individuals play a significant role as they can impact crucial decisions and results, including educational success. Furthermore, they serve as a reflection of societal and individual morale, emphasising the interplay between humans and their environment, surroundings, and community. Numerous investigations suggest that individuals with elevated educational ambition exhibit enhanced motivation and achieve higher levels of educational success compared to their counterparts (Desforges & Abouchaar, 2003).

The research team conducted a thorough review of existing literature on gamification and identified a significant gap in studies focussing on its impact on positive psychology variables, including ambition, hope, and happiness. Consequently, this study aims to contribute to the body of work exploring gamification's role in fostering ambition. The research team undertook an exploratory investigation involving middle school educators in Saudi Arabia, enquiring about the levels of students' ambition in their academic pursuits and the technical strategies employed to enhance these ambition indicators. The educators articulated that the digital resources currently utilised in instruction are inadequate for fostering student ambition, indicating that elevating ambition necessitates supplementary procedures and tools that are potentially lacking in the existing digital resources. This led the research team to consider the redesign of digital platforms and the implementation of gamification tools to enhance ambition indicators among middle school students. Consequently, this investigation seeks to explore a novel influence of gamified platforms on a specific variable within the realm of positive psychology, specifically ambition, by addressing the following primary inquiry:

What is the impact of gaming platforms on fostering educational ambition in ninth grade students?

Within the framework of various studies that have demonstrated the efficacy of gamification in enhancing multiple dependent variables, including well-being (Alhalafawy & Zaki, 2019), engagement (Alzahrani et al., 2022), motivation (Li, Hew, & Du, 2024), and self-regulated learning (Alhalafawy & Zaki, 2022), it is anticipated that the investigation will substantiate the subsequent hypothesis:

A statistically significant difference exists at the 0.05 level between the mean scores of the experimental group, which utilised the gamified platform, and the mean scores of the control group, which employed the same platform without gamification, indicating a favourable outcome for the experimental group in terms of developing ambition.

Literature Review

Gamified Platforms

The concept of gamification is more closely associated with (Games) rather than (Play). This distinction arises from the notion that play encompasses greater freedom and fewer constraints, whereas games are

characterised by limitations, challenges, competition, and specific objectives to be achieved (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011). Gamification represents a strategic approach that incorporates game elements to enhance the learning experience within an educational context. The implementation of gamification within educational contexts has attracted significant interest among scholars, as evidence suggests that components such as points, badges, achievements, leaderboards, and levels positively influence students' ambition to engage in learning activities. This is substantiated by the assertion that gamification enhances not only ambition but also self-efficacy and students' comprehension of educational material. The efficacy of digital platforms as a robust learning tool that enhances learner performance is well-established (Alanzi & Alhalafawy, 2022a, 2022b; Alhalafawy, 2018; Alhalafawy, Najmi, Zaki, & Alharthi, 2021; Alshammary & Alhalafawy, 2022, 2023; Khoshnoodifar, Ashouri, & Taheri, 2023; Najmi, Alhalafawy, & Zaki, 2023; Zohdi, Al-Hafdi, & Alhalafawy, 2024). Furthermore, the integration of digital platforms with gamification into a unified construct known as gamified platforms has considerably enhanced various learning outcomes (Al-Hafdi & Alhalafawy, 2024; Alhalafawy & Zaki, 2022; Alhalafawy & Zaki, 2019; Alzahrani & Alhalafawy, 2023; Alzahrani & Alhalafawy, 2022; Alzahrani et al., 2023; Alzahrani et al., 2022; Zaki, El-Refai, Najmi, et al., 2024). The investigation carried out by Porto and his research team (Porto, Jesus, Ferrari, & Fabbri, 2021) involved a meta-analysis of (101) studies focused on gaming platforms. The findings indicated that such platforms play a significant role in enhancing participation rates and motivating students to engage in tasks. Furthermore, an analysis of the findings from (32) qualitative studies focused on gamified platforms, as examined by Bai and his colleagues (Bai, Hew, & Huang, 2020), revealed that the factors contributing to students' well-being and happiness in relation to gamification stem from its effectiveness as a motivational tool. This is attributed to its ability to foster student engagement by offering immediate feedback and addressing cognitive needs. The findings from the longitudinal study carried out by Putz et al. (Putz, Hofbauer, & Treiblmaier, 2020), involving a sample of (617) students over a two-year period, indicate that gamification enhances engagement with content and improves the retention of knowledge among students. Cheng et al. (2019) conducted an analysis of (70) research papers focused on the development of gamification-based products. The findings revealed that 59% of these studies reported a positive impact of gamification elements on mental health and well-being, as well as an enhancement in user engagement with these products. This underscores the importance of considering digital incentives in the design of digital applications. Educators require integrated tools that significantly enhance their effectiveness in fostering improved learning outcomes. Research indicates that gamification serves as a valuable and dependable approach in this context.

Ambition

Ambition significantly influences an individual's life, acting as a crucial aspect of human personality. It acts as a key indicator of how a person interacts with oneself, his environment, and the broader society. The individual who harbours ambition and a vision for a successful future is driven by this ambition to engage in productive endeavours, thereby enhancing his learning experience. Conversely, an individual with a vision for an unfavourable future may adopt a pessimistic outlook, leading to a tendency towards apathy and avoidance of educational responsibilities. Thus, the greater the individual's ambition, the more pronounced their personal development will be. The engagement of the learner is influenced by an optimal level of ambition, alongside various supportive elements that facilitate achievement and advancement. This engagement reflects the genuine objectives that the learner embraces in life and aspires to attain, which can differ significantly among individuals and contexts. Ambition is shaped by numerous factors, including experiences of both failure and success, as well as reinforcement and punishment, which collectively empower the learner to navigate these challenges effectively.

Furthermore, ambition is characterised by a profound desire or resolve to attain success in educational endeavours and to pursue educational objectives. This ambition can manifest in various ways, including a desire to excel in a specific discipline, earn a degree or certification, or engage in further academic pursuits. This concept is intricately linked to prospective career achievements. Ambition levels are characterised as stable traits that vary among individuals, influencing their preparedness and ability to attain goals depending on factors such as difficulty, responsibility, perseverance, and the inclination to excel. This concept has been defined as an assessment of personal perceptions, serving as a valuable predictor of future behaviours.

Furthermore, the degree of ambition functions as an instrument that aids individuals in evaluating their self-esteem and self-worth. The pursuit of educational goals is frequently influenced by an array of elements, such as individual passions, professional objectives, and societal pressures. For certain individuals, the pursuit of education is driven by the ambition to gain knowledge and skills that will empower them to effect positive change in their respective fields. Conversely, for others, this ambition stems from a quest for personal fulfilment or the attainment of specific career objectives. Moreover, he articulated that ambition encompasses the learner's capacity to achieve excellence and differentiation, underpinned by a motivation for transformation, which is reflected in the intentional behaviours he adopts to foster personal growth and enhancement.

Ambition serves as a fundamental motivator for behaviour, with each success attained by the individual being linked to their ambition. This ambition evolves and matures over time, yet its development can be influenced by external factors. It may experience significant advancement when conditions are favourable, while also being susceptible to decline and stagnation when faced with adverse situations. Ambition denotes an individual's intrinsic motivation to pursue continuous learning, particularly when faced with various challenges. Its significance is evident in assessing the extent of a learner's educational objectives, accomplishments, and future ambition within the academic context. This, in turn, can influence decision-making processes and academic outcomes, as well as bolster the learner's confidence in achieving their educational ambition, which is a critical determinant of academic performance (Høgheim & Federici, 2020). Studies have indicated that the implementation of gamification in educational practices positively influences students' motivation, performance, and perceptions of their learning experiences (Yildirim, 2017). The findings of the study (Bicen & Kocakoyun, 2018) suggest that incorporating gamification into educational lessons positively influences learners by boosting students' interest in the classroom, thereby fostering greater ambition for success among other learners.

Methods

Approach

The present study employed a quasi-experimental approach, deemed most suitable for examining the causal relationship illustrated by the effects of the independent variable of gaming platforms on the dependent variable of ambition. Additionally, a descriptive method was utilised during the study, analysis, and design phases, facilitating the analysis of gaming and the identification of ambition indicators.

Experimental Design

The study employed an experimental design involving two distinct groups. The first group received instruction through gamified platforms, while the second group utilised the same platform devoid of gamification elements. Figure 1 illustrates the experimental design implemented in this investigation.

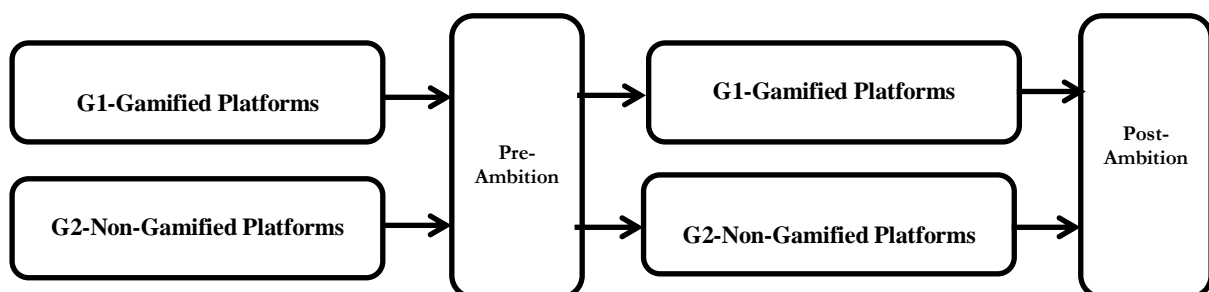


Figure 1. Experimental design of the research variables

The present study employed a quasi-experimental method to elucidate the relationship among the specified variables:

The Independent Variable: Gamified Platforms and Non-Gamified Platforms.

The Dependant Variable: Level of Ambition

Sample

The sample for this study comprised (80) students from Al-Waleed bin Uqba Middle School in Medina. These students were randomly selected from the third intermediate cohort enrolled in the critical thinking course and were categorised into two experimental groups: one group consisting of (40) students utilising a gaming platform and the other group comprising (40) students not utilising a gaming platform.

Measures

To build the ambition scale, a comprehensive review of existing ambition scales was conducted. This process led to the identification of the primary dimensions of the scale formulated for the present study, which are categorised into four key themes: Optimism, goal-setting ability, willingness to new experiences, and resilience in the face of failure and frustration. A panel of experts was convened to evaluate the scale, thereby affirming the validity of the statements presented. Participants were instructed to evaluate each item using a five-point scale (always - often - sometimes - rarely - never). The scale's stability was verified prior to application, yielding a Cronbach's alpha coefficient of (0.858). The mean reliability of the scale was determined to be (0.80). The conclusive iteration of the scale was established, comprising a total of (35) statements categorised into four dimensions. The scale's maximum attainable score was set at (175), with a minimum score of (35), and a neutral score positioned at (105).

Procedures

This study investigates the creation of a digital platform utilising gamification techniques aimed at enhancing the ambition levels of middle school students in Saudi Arabia. The research team conducted an exploratory study revealing a notable decline in ambition among students when relying on traditional educational resources. The Talent LMS platform was selected, accessible via the official website (<https://www.talentlms.com>) or through the Talent LMS application for smart devices (iOS and Android). The research team selected this platform due to its numerous features, including the capability to enable or disable competitive gamification options. It is recognised as one of the most robust learning platforms, notable for its implementation of various gamification elements. Additionally, it encompasses essential tools that can be utilised within the gamification framework, such as points, levels, badges, leaderboards, and other related components.

The course on Critical Thinking was recognised as the medium through which gamification is administered. The curriculum emphasises three primary domains: the various levels of thought, the stages of critical reasoning, and the factors influencing and regulating critical thinking processes. A total of nine learning tasks were developed, comprising three tasks for each of the three levels of learning pertinent to the domain of critical thinking. These tasks were structured to reflect a progressive complexity, ensuring that each educational topic encompasses an assignment that requires students to articulate their opinions on a subject introduced by the instructor via the discussion forum. Alongside an additional task that considered the advancement in complexity from one subject to another, these tasks commenced with the extraction of essential critical thinking abilities and the provision of innovative solutions to various problems.

The three fundamental elements of gamification include points, badges, and leaderboards.

Points: Participants receive (25) points upon accessing the platform and upon the successful completion of a module. Each certificate acquired by the student will yield a total of 100 points. Each test or assignment is allocated a total of (25) points, contingent upon the multiplication of these points by the grades achieved by the student. Participants will receive (25) points for each engagement in a discussion. Ten points will be awarded for each vote.

Badges: Students receive badges as a result of their engagement in a series of activities, which include logging into the platform, completing learning modules, answering quiz questions, submitting assignments, providing comments, obtaining certificates, establishing connections, and participating in surveys. Five badges were created and made available on the platform to align with students' studies and serve as motivational tools, as illustrated in Figure 2.



Figure 2. Badges Created and Implemented to Encourage Student Engagement

Leaderboards: Two distinct leaderboards were established based on the accumulation of points and the attainment of badges.

The initial experimental group engaged with the material and completed the educational assignments utilising the gaming platform. In the case of the second experimental group, the participants engage with the identical content via the same platform—Talent LMS—albeit with the Gamification feature turned off.

Result

To address the primary question and to substantiate the hypothesis concerning the comparison between the initial experimental group utilising the gamified platform and the subsequent experimental group employing the non-gamified platform, a t-test was conducted to ascertain the significance of the differences between the experimental and control groups. The results of the t-test for the participants of the two research groups are presented in Table 1.

Table 1. Mean, Standard Deviation, And T-Value for Ambition

group	N	Mean	SD	t	df	sig
G1-Gamified Platforms	40	160.42	14.32	27.10	78	0.000
G1-Non-gamified Platforms	40	95.20	6.08			

Based on the analysis of the data presented in Table 1, it is evident that the initial experimental group utilising the gamified platform demonstrated a more favourable outcome in the enhancement of ambition when compared to the second experimental group that engaged with the non-gamified platform. Figure 3 illustrates the comparison of the average total skills of ambition between the two experimental groups.

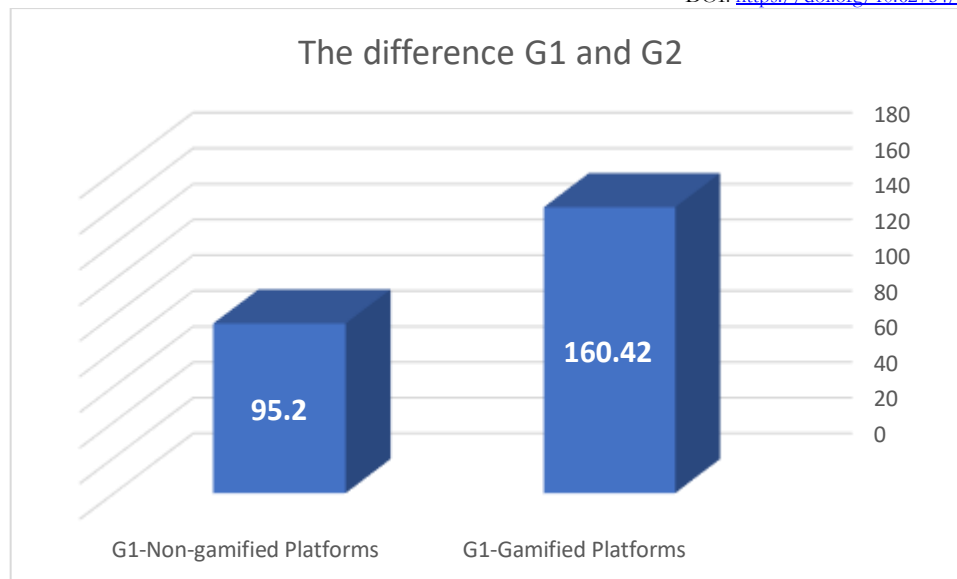


Figure 3. Difference Between the Experimental Groups in The Total Score of Ambition

Discussions

The findings indicate that the efficacy of digital platforms utilising gamification tools in fostering ambition via the Talent LMS platform can be ascribed to the gamification system's role in enhancing learners' ambition levels. This system offered positive reinforcement, thereby encouraging learners to engage actively and remain consistently motivated to undertake their learning tasks autonomously and to navigate the digital platform for the application of learning content. Furthermore, the sequential arrangement of gamification elements throughout the platform, rather than their simultaneous presentation, played a significant role in improving the learner's concentration on attaining the educational goals. The outcome can be ascribed to the implementation of game mechanics, including points, badges, and leaderboards, within the learning platform, which served to enhance student engagement in their educational pursuits. The points element served as a concrete indicator of effort and advancement for the students, providing them with a distinct perspective on their progress and accomplishments. Badges serve as significant markers within the learning platform, recognising individual efforts and achievements through virtual accolades that denote a learner's success. Leaderboards introduce a stimulating competitive element that motivates students to strive for excellence, while the team-oriented leaderboard alternative fosters both personal and group ambition. This finding aligns with research indicating that the incorporation of gamification in learning management systems significantly enhances active learning. Students provided favourable feedback regarding the weekly review activities, and the majority expressed a positive reception towards the use of badges and leaderboards. The findings indicate that the implementation of points, badges, and leaderboards within educational tasks enhances student performance, fosters greater active participation, and serves as a motivational tool, ultimately contributing to heightened ambition and the achievement of goals.

The outcome may also be linked to the structure of challenges and competition facilitated by the utilised learning platform, which engages students' competitive instincts by establishing barriers and tiers, thereby rendering each accomplishment a step towards accessing new educational levels. This facilitated the application of knowledge and skills in a creative and critical manner, alleviating concerns regarding the adverse effects of failure. Consequently, this encouraged learners to pursue higher ambition that align with their educational endeavours. The mechanisms for feedback and the systems of rewards implemented within the learning platform constituted a fundamental aspect of the gamification process, delivering prompt and constructive feedback to acknowledge the efforts and accomplishments of learners. Points and badges served to validate the progress of learners, offering a transparent framework for enhancement and achievement. Incentives significantly enhanced students' motivation, transforming the educational experience into an ongoing and immersive process. This aligns with the findings of Luo, Yang, and Meinel

(2015), which suggest that rewards serve as a dependable mechanism within gamification frameworks, highlighting the importance of learner autonomy, exerting no influence on intrinsic motivations, and maintaining an atmosphere of enjoyment and engagement for the learner.

The Goal Setting Theory elucidates the mechanisms through which gamified platforms enhance ambition outcomes. The theory of goal-setting focusses on the mechanisms through which individuals can be motivated to enhance their performance in content-specific tasks by establishing and tracking objectives. The theory posits that the enhancement of learner motivation is contingent upon their ambition to attain specific goals. These goals provide learners with the ambition and interest necessary to achieve quantifiable outcomes, which can subsequently inform their desired achievements. Goal-setting theory posits that establishing a challenging goal can effectively guide learners towards heightened motivation and improved performance outcomes. Learning environments that incorporate gamification are structured around activities that are orientated towards specific objectives. For instance, the direct presentation of badges to the learner serves as a valuable metric for assessing the learner's progress in relation to their objectives, thereby facilitating awareness of their trajectory and enabling them to monitor their advancement towards achieving these goals. This phenomenon is typically evident in the ambition levels of learners, driven by the pursuit of objectives influenced by gamification components, including points, badges, and leaderboards.

The observed outcome may be attributed to the incorporation of gamification elements within the learning platform, which established a flexible system tailored to the diverse needs of learners. This approach fosters an informal, engaging, and effective educational environment that encourages participation and significantly improves information retention, positioning the learner at the core of the educational experience. The student assumes responsibility for their learning, which in turn influences the realisation of their ambition. This aligns with findings that suggest the incorporation of gamification elements within the educational framework enhances students' understanding of concepts, boosts their engagement during lessons, and fosters motivation for learning in a more interactive and stimulating context. The autonomy of the learner in the educational processes significantly fosters their motivation and directs their attention towards the acquisition of knowledge. As learners' expectations of achievement increase throughout their engagement with the educational platform, the likelihood of success correspondingly enhances. This culminates in elevated degrees of ambition. This aligns with findings that suggest gamification facilitates and improves collaboration and communication among learners, allowing them to engage in discussions about learning tasks and challenges autonomously, thereby fostering cognitive awareness and enhancing achievement rates.

Limitations

The influence of gamification on ambition was associated with the specific gamification elements employed in the study, including points, badges, and leaderboards. This effect may vary if alternative gamification components, such as levels, agents, virtual goods, and others, are implemented. The scale developed for ambition was associated with educational ambition via the utilised learning platform. It is evident that ambition within educational settings can be quantified through various studies conducted on a substantial number of learners to facilitate the execution of factor analyses. The research focused exclusively on male students, indicating a potential avenue for future investigations. This could involve comparing gender differences or assessing whether the same effects of the utilised platforms are observed in female students.

Conclusion

The present study is a significant investigation that examines the potential of gaming platforms to enhance the ambition of middle school students. This study has successfully formulated an instructional design tailored for gamified platforms, enabling their utilization to enhance ambition. The findings of this study enhance the framework of gamified platforms, enabling them to foster ambition effectively. This study articulates a developmental framework for leveraging gamified platforms to enhance educational ambition within digital environments. Future studies may explore the influence of various gamification

elements on enhancing ambition. Additional investigations into the effects of gamification-driven generative intelligence platforms on the cultivation of ambition will be undertaken. Furthermore, the influence of gamification on various positive psychological constructs, including hope and happiness, will be analyzed.

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