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# Gamification and Learners' Cognitive Engagement

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**ABSTRACT:** The integration of gamification into educational settings has emerged as an innovative instructional approach aimed at enhancing learners' engagement and motivation. This study examined the impact of gamification on learners' cognitive engagement. It aimed to determine the extent of gamification, the level of learners' cognitive engagement, the significant relationship between the variables, and identified dimensions of gamification predict the learners' cognitive engagement. The study employed correlational and causal research designs. The survey was conducted in the Division of Misamis Oriental to 124 Grade 6 learners through stratified random sampling using Select Statistical Services Calculator. An adapted survey questionnaire which passed the validity and reliability tests was utilized. Statistical tools like Mean, Standard Deviation, Pearson Product Moment Correlation, and Multiple Linear Regression were employed. Findings revealed that the extent of gamification in terms of rewards, competition, and feedback is very high and the level of learners' cognitive engagement in terms of attention, memory retention, and learning skills is also very high. There is a significant positive relationship between gamification and learners' cognitive engagement. Among the determinants of gamification, rewards and competition significantly predict learners' cognitive engagement. The study concludes that gamification significantly contributes to enhancing learners' cognitive engagement. Thus, it is recommended that teachers may continue integrating gamification strategies and school administrators may continue conducting trainings and seminars to strengthen teachers' skills in gamification and instructional approaches for learners.

**KEYWORDS:** cognitive engagement, gamification, learning skills, rewards

## I. INTRODUCTION

The integration of gamification into educational settings has emerged as an innovative instructional approach aimed at enhancing learners' engagement and motivation. Teachers continuously seek strategies to make learning more enjoyable and meaningful for learners. As a pedagogical approach, gamification offers creative pathways for fostering interest and improving academic engagement, addressing the growing concern of learner disengagement in traditional classroom settings.

In the global context, cognitive engagement plays an essential role in learners' ability to process, absorb, and retain information, which ultimately influences academic achievement. Gamification has been increasingly recognized for its potential to enhance cognitive engagement by promoting active participation and sustained attention. This mechanism is particularly valuable in educational contexts where resources are limited and teachers must rely on innovative strategies to capture and maintain learners' interest (Anderson & Dill, 2020).

Learners' cognitive engagement refers to the degree of mental effort, attention, and strategic thinking that learners invest in the learning process. It encompasses active information processing, meaningful interaction with learning materials, and the application of problem-solving skills to comprehend and retain knowledge. When learners are cognitively engaged, they are more likely to demonstrate persistence, curiosity, and higher-order thinking, which ultimately enhances learning outcomes. Research indicates that gamification can stimulate these cognitive processes by creating immersive and interactive learning experiences that require learners to focus, analyze, and synthesize information (Fredricks et al., 2023; Pioquinto & Oco, 2025).

Alim and Rauf (2021) highlighted that learners engaged in game-based learning environments demonstrate more dynamic cognitive processing, facilitating the transfer of information into long-term memory. The repetitive and interactive nature of gamified activities supports deeper learning and strengthens memory retention, addressing common difficulties associated with passive learning methods. By integrating gamification into classroom instruction, teachers can offer more hands-on and cognitively stimulating experiences that enhance learners' engagement and understanding.

Moreover, competitive elements such as leaderboards and time-bound challenges have been shown to increase learners' attention and improve memory retention. In diverse classroom settings, competition can motivate learners to set personal learning goals while benefiting from peer-driven engagement. When learning is framed as a dynamic and interactive process, competitive gamification transforms conventional classroom environments into more stimulating and goal-oriented learning spaces (Lee & Hammer, 2020).

However, learners often encounter challenges such as large class sizes, limited instructional materials, and varying levels of learning support. Within these conditions, gamification can serve as an effective motivational tool that encourages focused participation and persistence in learning tasks. The sense of accomplishment derived from earning rewards promotes sustained attention and improved retention of learning content. Rewards also function as external recognition of effort, reinforcing positive learning behaviors among learners (Huang & Soman, 2021).

Despite the growing studies supporting the effectiveness of gamification in enhancing learner engagement, most studies have focused on motivation and behavioral engagement, with relatively little attention given to specific dimensions of cognitive engagement. Recent reviews indicate that although gamification is widely implemented, empirical evidence on how particular gamification elements affect learners' cognitive processes remains limited and fragmented. This gap is especially evident at the elementary level (Sailer & Homner, 2023).

Moreover, most gamification studies are concentrated in higher education or technology-rich learning environments, resulting in a lack of context-sensitive research in basic education settings, particularly in developing countries. In the Philippine context, empirical studies examining the impact of gamification on learners' cognitive engagement remain scarce, despite ongoing challenges such as large class sizes, limited instructional resources, and varying learner readiness. This gap indicates a need for localized research that examines how gamification functions within real classroom constraints (Bernardo & Mendoza, 2023).

Thus, this study aimed to examine gamification on learners' cognitive engagement. Specifically, it focused on how rewards, competition, and feedback influenced learners' attention, memory retention, and learning skills. The study addressed existing gaps in empirical research on gamification within elementary education. By doing so, it sought to provide evidence that could inform instructional decision-making and support the effective integration of gamification in elementary classrooms.

This study was anchored on Self-Determination Theory (SDT) by Ryan and Deci (2021), which emphasizes the role of motivation in fostering engagement and learning outcomes. According to SDT, individuals are most motivated and cognitively engaged when their basic psychological needs for autonomy, competence, and relatedness are met. This theory provides a strong foundation for understanding how gamification elements, such as rewards, competition, and feedback, can influence learners' cognitive engagement.

Gamification, which involves the integration of game-like elements into non-game contexts, directly connects to SDT's principle of autonomy. Recent research suggests that gamification's interactive and participatory elements allow learners to feel a sense of control over their learning, which fosters intrinsic motivation and cognitive engagement. By providing choices, challenges, and rewards, gamification can enhance learners' intrinsic motivation, leading to sustained attention, improved memory retention, and a greater desire to learn. The autonomy granted by gamified experiences aligns with SDT's assertion that motivation is highest when learners perceive themselves as active participants in their learning process, rather than passive recipients of information (Baldomero et al., 2023).

Rewards and feedback, as components of gamification, play a role in influencing learners' cognitive engagement by satisfying their need for competence. Competence, according to SDT, refers to the feeling of mastery or effectiveness in one's actions. Research has shown that feedback, especially when it is timely and constructive, helps learners gauge their progress and adjust their strategies, which leads to higher levels of cognitive engagement. Furthermore, rewards that recognize achievements, such as points or badges, reinforce positive behavior and encourage continued effort. This increased competence directly influences cognitive processes such as attention and memory retention, as learners are more likely to engage actively in tasks when they feel confident in their abilities (Jones & Whitton, 2024).

The motivational aspect of gamification is important in understanding its impact on learners' cognitive engagement. SDT underscores that motivation plays a key role in not only fostering engagement but also in sustaining it over time. In the context of gamification, the incorporation of extrinsic rewards such as badges or points may initially motivate learners, but the ultimate goal is to transition them toward intrinsic motivation. The shifting of motivation from extrinsic rewards to intrinsic satisfaction mirrors SDT's emphasis on fostering autonomy and competence, which in turn enhances cognitive engagement. Recent studies show that when gamification is designed thoughtfully, it supports both extrinsic and intrinsic motivations, leading to sustained attention, better memory retention, and a higher level of motivation to learn (Papastergiou, 2024).

## II. METHODOLOGY

The study employed both correlational and causal research designs to examine the impact of gamification on learners' cognitive engagement. The correlational design was utilized to determine the strength and direction of relationships between the independent and dependent variables without any manipulation, allowing the researchers to explore natural associations in the data (Creswell & Creswell, 2023). This approach helped in understanding whether variations in gamification dimensions, such as rewards, competition, and feedback, were related to changes in learners' attention, memory retention, and learning skills.

In addition, the causal research design was applied to investigate the influence of specific factors on learners' cognitive engagement. This design allowed for the identification of cause-and-effect relationships by manipulating one or more dimensions of independent variable and observing their effects on the dependent variable (Mertler, 2021). By using this approach, the study aimed to provide a more precise understanding of how gamification interventions directly predict learners' cognitive processes, ensuring that observed changes could be attributed to the implemented strategies.

The collected data underwent appropriate data analysis. Problems 1 and 2 utilized the Mean and Standard Deviation to describe gamification and cognitive engagement of learners. Problem 3 employed the Pearson Product Moment Correlation because the statistical assumptions were met. Moreover, Problem 4 used Multiple Linear Regression to determine which independent variable predicted the learners' cognitive engagement.

## III. RESULTS AND DISCUSSION

**Problem 1.** What is the extent of gamification in terms of:

1.1. rewards;
1.2. competition; and
1.3. feedback?

Table 1 presents the summary result of gamification as perceived by learners across the dimensions of rewards, competition, and feedback. The overall Mean of 4.35 with SD=0.64, qualitatively described as Very High, indicates that gamification strategies are consistently integrated into the learning process. This finding suggests that learners are regularly exposed to game-based elements that support engagement and motivation in classroom activities. Moreover, the consistently high ratings across dimensions imply that gamification creates a stimulating learning environment that sustains learners' interest and participation. This further indicates that well-designed gamified strategies can enhance not only motivation but also learners' active involvement and persistence in completing academic tasks.

**Table 1. Summary Result of Gamification**

| Dimensions | Mean Range | SD | Qualitative Description |
|---|---|---|---|
| Rewards | 4.31 | 0.67 | Very High |
| Competition | 4.36 | 0.64 | Very High |
| Feedback | 4.40 | 0.62 | Very High |
| **Overall** | **4.35** | **0.64** | **Very High** |

**Note:** 4.21-5.00 Very High; 3.41-4.20 High 2.61-3:40 Moderate; 1.81-2.60 Low; 1.00-1.80 Very Low

According to Pappas (2024), the success of gamification lies in its alignment with learners' interests and the appropriate level of challenges. The study emphasized that personalized and adaptive gamified elements can continuously engage learners by providing them with tasks that are neither too easy nor too difficult. This balance of challenge and skill can foster a state of flow, a psychological state where learners are fully immersed and cognitively engaged in the task at hand.

In the same table, Feedback has the highest rated dimension. It has a Mean of 4.40 with SD=0.62, highlighting its prominent role in gamified learning environments and is qualitatively described as Very High. This result indicate that timely and meaningful feedback is a core component of gamification practices, as it consistently supports learners in monitoring their performance and understanding their learning progress. The high emphasis on feedback suggests that learners benefit from clear guidance and reinforcement within gamified activities, which may enhance self-regulation, sustain engagement, and encourage continuous improvement in learning tasks. Moreover, this indicates that feedback serves as a driving force in maintaining learners' motivation and direction during learning activities. This further implies that integrating immediate and personalized feedback mechanisms can maximize the effectiveness of gamified instruction and deepen learners' cognitive engagement.

Consequently, feedback's role in maintaining focus and motivation in learning is significant. As noted by Kluger and DeNisi (2025), feedback provides learners with a clear sense of direction, helping them stay aligned with their learning goals. When feedback is timely and relevant, it enables learners to adjust their strategies and stay on track with their objectives. This process of feedback-driven goal adjustment strengthens learners' motivation to continue progressing, making them more engaged and committed to their learning journey. Therefore, feedback acts not only as a guide for academic improvement but also as a source of sustained motivation.

Meanwhile, the lowest rated dimension is Rewards. The dimension obtained the lowest Mean of 4.31 with SD=0.67, qualitatively described as Very High. While it yielded the lowest mean among the three dimensions, it still falls within the Very High range, indicating that rewards remain a strong and consistent feature of gamified instruction. The data imply that although rewards are widely used and appreciated by learners, they may be perceived as slightly less influential than feedback or competition in driving engagement. This suggests that while extrinsic motivators such as points, badges, or prizes effectively support learning, combining them with elements like constructive feedback and healthy competition may further enhance motivation and sustained participation in gamified learning environments. Moreover, this finding indicates that overreliance on rewards alone may not fully sustain learners' interest without meaningful learning interactions. This further implies that integrating intrinsic motivators alongside rewards can foster deeper engagement and promote long-term learning outcomes.

Moreover, the potential for receiving rewards often adds an element of excitement to the learning experience. Studies have demonstrated that the anticipation of rewards can enhance learners' intrinsic excitement about learning tasks. Henderlong and Lepper (2022) highlighted that the prospect of rewards serves as a source of excitement, making the learning process feel more dynamic and enjoyable. The possibility of receiving rewards makes learning more exciting.

**Problem 2.** What is the level of learners' cognitive engagement in terms of:

2.1 attention;
2.2 memory retention; and
2.3 learning skills?

**Table 2. Summary Result of Learners' Cognitive Engagement**

| Dimensions | Mean Range | SD | Qualitative Description |
|---|---|---|---|
| Attention | 4.26 | 0.70 | Very High |
| Memory Retention | 4.12 | 0.72 | High |
| Learning Skills | 4.48 | 0.59 | Very High |
| Overall | **4.28** | **0.67** | **Very High** |

**Note:** 4.21-5.00 Very High; 3.41-4.20 High 2.61-3:40 Moderate; 1.81-2.60 Low; 1.00-1.80 Very Low

Table 2 presents the level of learners' cognitive engagement across attention, memory retention, and learning skills. The overall Mean score of 4.28 with SD=0.67, qualitatively described as Very High, indicates that gamification actively enhances learners' engagement in multiple aspects of learning. The data suggest that learners consistently maintain focus during lessons, demonstrating high levels of attention. Gamification encourages them to retain information effectively, as reflected in the high memory retention scores. Moreover, it strengthens their learning skills by motivating them to explore concepts independently and participate actively in class activities. The results show that gamification not only captures learners' interest but also fosters a self-driven and sustained cognitive involvement in the learning process. Moreover, this finding highlights the holistic impact of gamification in supporting various dimensions of cognitive engagement simultaneously. This further implies that integrating gamified strategies can lead to more meaningful, active, and learner-centered educational experiences.

This aligns to the study of Zainuddin et al. (2020) that the role of gamification in promoting cognitive engagement has received increasing attention. The researchers highlighted that the use of game elements in educational contexts, such as points, leaderboards, and challenges, can significantly boost cognitive engagement by making learning more enjoyable and interactive. Their study demonstrated that learners participating in gamified activities exhibited higher levels of focus and effort, suggesting that these game-like features could act as motivational tools to encourage learners to invest more cognitive effort in their learning processes.

In the same table, Learning Skills is the highest rated dimension. It obtained the highest Mean of 4.48 with SD=0.59 and is qualitatively described as Very High. The data suggest that learners actively demonstrate motivation, curiosity, and eagerness to acquire new knowledge. The findings further suggest that gamification strongly enhances their ability to apply problem-solving

strategies, participate in classroom activities, and maintain consistent interest in learning tasks. By integrating game-based elements, teachers foster an environment that encourages self-directed learning and promotes sustained enthusiasm for academic challenges. Moreover, this indicates that gamification plays a crucial role in developing learners' independent learning habits and critical thinking skills. This further implies that well-designed gamified instruction can support long-term academic growth and adaptability in diverse learning situations.

This supported to the finding of Williams and McCoy (2024) that learners who look forward to learning opportunities in the classroom are more likely to participate actively and invest effort into their studies. The anticipation of engaging with new material and the potential for intellectual growth serve as motivational drivers, making learners more eager to attend class and engage in discussions. Creating an environment that fosters these expectations can significantly enhance learners' motivation.

Meanwhile, Memory Retention is the lowest rated dimension. The dimension obtained the lowest Mean of 4.12 with SD=0.72 and is qualitatively described as High. The data suggest that learners generally retain information over time, but their ability to recall prior lessons is slightly less consistent compared with other engagement indicators. The results suggest that while gamification supports memory retention, additional reinforcement strategies may further strengthen learners' ability to encode and consolidate lesson content. Overall, gamification still positively influences retention, but its impact is less pronounced than its effect on learning skills. Moreover, this indicates that retention requires more sustained and structured practice beyond immediate engagement. This further implies that integrating strategies such as review sessions, retrieval practice, and spaced repetition can enhance learners' long-term memory retention.

This aligns with Chandra and Kumar (2025) that short-term memory retention plays a significant role in learners' cognitive engagement. Learners who can recall information presented in class shortly after the lesson exhibit effective working memory, which facilitates the immediate application of newly learned material. The ability to retain information for brief periods, as seen in learners who easily remember new content after class, is essential for learning in dynamic classroom environments, where new material is frequently introduced and quickly built upon.

**Problem 3.** Is there a significant relationship between the extent of gamification and the level of learners' cognitive engagement?

Table 3 presents the correlation between gamification and learners' cognitive engagement. The Rewards dimension shows a strong positive correlation with an r-value of 0.772 and a p-value of 0.000. This indicates that the use of rewards in gamified learning activities significantly enhances learners' cognitive engagement. The high positive relationship suggests that when teachers implement reward-based gamification, learners become more motivated, attentive, and actively involved in the learning process. Moreover, this finding highlights the effectiveness of rewards as a key driver of engagement in gamified instruction. This further implies that strategically designed reward systems can reinforce positive learning behaviors and sustain learners' participation in academic tasks.

**Table 3. Test of Correlation Between Gamification and Learners' Cognitive Engagement**

| Dimensions of Independent Variable | r-value | p-value | Description | Decision on Ho | Interpretation |
|---|---|---|---|---|---|
| **Rewards** | 0.772** | 0.000 | High Positive | Reject | Significant |
| **Competition** | 0.631** | 0.000 | Moderate Positive | Reject | Significant |
| **Feedback** | 0.532** | 0.000 | Moderate Positive | Reject | Significant |

**. Correlation is significant at the 0.01 level (2-tailed).

This aligns in the previous study of Schunk and DiBenedetto (2024) that rewards are essential in helping learners maintain focus on their tasks, even when they are difficult. Rewards guide learners' attention and effort toward the tasks they engage in. Also, rewards actively motivate learners to initiate tasks and sustain their perseverance during challenging moments. Learners reported that receiving rewards increased their concentration and engagement, enabling them to complete tasks more effectively and persistently. These findings suggest that integrating rewards in learning activities enhances learners' cognitive engagement and strengthens their task-focused behavior.

The Competition dimension demonstrates a moderate positive correlation, with an r-value of 0.631 and a p-value of 0.000. This finding indicates that competitive elements in gamification moderately increase learners' cognitive engagement. By introducing healthy competition, learners tend to focus more, challenge themselves, and strive to perform better, which contributes to deeper learning and participation in classroom activities. Moreover, this suggests that competition can stimulate effort and persistence when structured in a supportive and balanced manner. This further implies that incorporating collaborative and fair competitive strategies can enhance engagement while maintaining positive learning experiences among learners.

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This aligns to the study of Perez et al. (2023) that learners' focus on learning can be significantly enhanced when competition is introduced into educational activities. They explain that the element of competition activates learners' competitive instincts, drawing their attention more intensely toward the task at hand. The pressure to perform well in a competitive setting often leads to heightened concentration, as learners become more aware of their performance relative to others. This focus can create deeper engagement with learning, as learners aim to meet or exceed the expectations set by both themselves and their peers. The feedback dimension also shows a moderate positive correlation, with an r-value of 0.532 and a p-value of 0.000. This suggests that providing timely and constructive feedback through gamified strategies effectively supports learners' cognitive engagement. Learners respond by reflecting on their learning progress, identifying areas for improvement, and actively applying knowledge, which reinforces understanding and memory retention. Moreover, this indicates that feedback serves as a guiding mechanism that helps learners regulate their learning processes. This further implies that integrating immediate and meaningful feedback within gamified activities can enhance both engagement and overall learning

This is true to the study of Hattie and Timperley (2020) that feedback plays a significant role in enhancing pupil learning by providing clear and specific information about performance. Their research highlights that feedback not only helps learners identify areas for improvement but also enables them to appreciate their progress, fostering a sense of achievement. As learners recognize their growth, they are more likely to be motivated to continue their educational journey, echoing the importance of appreciating feedback as a tool for learning progress.

**Problem 4.** Which of the dimensions of independent variable predicts singly or in combination the level of learners' cognitive engagement?

**Table 4. Multiple Linear Regression on Gamification and Learners' Cognitive Engagement**

| **Dimensions Independent Variable** | **Unstandardized Coefficients** | | **Standard Coefficient Beta** | | |
|---|---|---|---|---|---|
| | **B** | **Std. Error** | | **T** | **Sig.** |
| (Constant) | 0.748 | 0.247 | | 3.023 | 0.003 |
| Rewards | 0.515 | 0.057 | 0.591 | 9.110 | 0.000 |
| Competition | 0.233 | 0.065 | 0.262 | 3.609 | 0.000 |
| Feedback | 0.070 | 0.064 | 0.077 | 1.097 | 0.275 |
| | | R=0.814 | $R^2$=0.663 | F=78.523 | Sig=0.000 |

a. Dependent Variable: Learners' Cognitive Engagement

b. Predictors: (Constant), Rewards, Competition, Feedback

Table 4 shows the multiple linear regression on gamification and learners' cognitive engagement. The regression analysis identified rewards and competition as significant predictors of learners' cognitive engagement, while feedback did not emerge as a significant predictor when combined with the other variables. This result suggests that while feedback is highly valued by learners, its influence may be indirect or mediated by rewards and competition. More importantly, the $R^2$ value of 0.663 shows that 66.3% of the variance in learners' cognitive engagement is explained by rewards, competition, and feedback included in the model, indicating that these instructional elements play a substantial role in shaping learners' learning behavior. Moreover, this finding highlights the stronger predictive power of extrinsic and interactive elements in influencing engagement. This further implies that combining rewards and competition with supportive feedback mechanisms can optimize the overall effectiveness of gamified learning environments.

This aligns with Deci et al. (2020) that rewards are essential in creating intrinsic motivation, especially in environments where learners may struggle to maintain focus or enthusiasm. In particular, the feeling of motivation during learning activities can be heightened when rewards are involved. As learners perceive rewards as incentives for their efforts, they are more likely to engage with the tasks at hand. Learners are motivated when they receive rewards during learning activities.

Competition also significantly influences learners' cognitive engagement, albeit to a lesser extent than rewards. The unstandardized coefficient is 0.233, with a standardized beta of 0.262. The t-value of 3.609 and a p-value of 0.000 indicate that this predictor is statistically significant. These findings suggest that structured competitive activities motivate learners to perform better, enhance focus, and sustain engagement. The results align with previous research showing that moderate competition encourages learners to challenge themselves while remaining cognitively involved in the learning process. Moreover, this indicates

that competition can effectively stimulate effort when it is well-balanced and goal-oriented. This further implies that incorporating fair and supportive competitive structures can enhance engagement without causing unnecessary pressure among learners.

This is true to the study of Liu et al. (2022), who investigated competitive modes in gamified learning and found that competition mechanisms enhance learners' learning motivation and engagement**.** Learners exposed to competitive conditions demonstrated greater motivation and more active participation**,** showing that structured competitive elements stimulate cognitive involvement in learning tasks. The study revealed that competitive learning environments encourage learners to invest more effort than non-competitive settings. Overall, their findings emphasized the positive role of competition in sustaining engagement and focus during learning activities.

Feedback does not significantly predict learners' cognitive engagement in this model. Its unstandardized coefficient is 0.070, with a standardized beta of 0.077, a t-value of 1.097, and a p-value of 0.275. This indicates that while feedback may contribute to learning, its effect on cognitive engagement is not strong enough to reach statistical significance in this context. The finding highlights that learners' engagement depends more on motivational mechanisms like rewards and competition than on feedback alone. Moreover, this suggests that feedback may function more as a supportive or reinforcing element rather than a primary driver of engagement. This further implies that integrating feedback alongside rewards and competition can create a more balanced and effective gamified learning environment. The findings can be summarized with the following regression equation:

$$Y=0.515X_1+0.233X_2+0.748$$

Where: 0.748 = Constant

Y = Learners' Cognitive Engagement

$X_1$ = Rewards

$X_2$ = Competition

$X_3$ = Assessment

According to Mory (2022) positive feedback not only affirms learners' efforts but also provides a psychological boost that encourages continued engagement with the learning process. The study emphasized that when learners feel appreciated and supported through feedback, they are more likely to stay engaged and persevere through challenges. This highlights the link between positive reinforcement and sustained motivation in educational settings.

Moreover, the value of constructive feedback in fostering improvement cannot be understated. As noted by Nicol and Macfarlane-Dick (2023), constructive feedback provides learners with clear guidance on what needs to be improved and how they can make those improvements. Unlike general feedback, which may simply praise or criticize, constructive feedback offers actionable advice that learners can apply to enhance their skills. This type of feedback not only clarifies learners' strengths and weaknesses but also empowers them to take control of their learning, thus improving both their skills and self-confidence.

## IV. CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. Gamification stimulates motivation and active participation.
2. Learners consistently maintain focus during lessons, demonstrating high levels of attention
3. Gamification supports cognitive processes such as focus, memory retention, and skill development.
4. Even if feedback is highly valued by learners, its influence may be indirect or mediated by rewards and competition.

## V. RECOMMENDATIONS

Based on the findings and conclusions of the study, it is recommended that the:

1. Teachers may continue integrating gamification strategies such as rewards, competition, and feedback to sustain learners' motivation and participation.
2. Schools may promote instructional approaches that enhance learners' attention, memory retention, and learning skills.
3. Teachers may support the use of gamification as an effective strategy for improving learners' cognitive engagement.
4. School administrators may continue conducting trainings and seminars to strengthen teachers' skills in gamification and instructional approaches for learners.

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