

LITERATURE REVIEW

The application of gamification in education has been widely studied for its potential to enhance student engagement, motivation, and learning outcomes. Specifically, the integration of game mechanics into language acquisition, such as English vocabulary learning, presents an opportunity to overcome challenges related to student engagement, retention, and active participation. Vocabulary acquisition, a fundamental aspect of language learning, often requires repetitive practice, which can be tedious and disengaging for students. However, the use of gamification offers a solution by transforming traditional learning activities into more interactive and enjoyable experiences.

This section of the study aims to explore existing literature on the impact of gamification in education, particularly in the context of language learning and vocabulary acquisition. The review will focus on the effectiveness of game-based learning strategies, such as the use of interactive challenges, rewards systems, and real-time feedback, as seen in educational tools like *Tower of Words*. Through an examination of various studies and theoretical frameworks, the review will highlight the key benefits and potential limitations of gamification in the educational landscape.

1. GAMIFICATION IN EDUCATION

General Impact of Gamification

Gamification has significantly influenced students' academic performance and engagement across various subjects, including social studies, where it fosters positive attitudes and improves outcomes (Öztürk & Korkmaz, 2019). Similarly, in the study “*Can Gamification Influence the Academic Performance of Students?*”, students in a Gamified Learning Environment (GLE) achieved higher final grades than those in traditional settings, underscoring the effectiveness of gamification in academic contexts (Giráldez et al., 2022).

This aligns with *Tower of Words*, which incorporates gamified elements like leaderboards and rewards to enhance vocabulary learning. By offering interactive and competitive features, the game aims to foster engagement, making vocabulary acquisition both enjoyable and effective.

Lampropoulos and Sidiropoulos (2024) further highlighted gamification's superiority over traditional and online learning methods. Among 1,001 higher education students, gamified learning achieved higher retention rates, success rates, and overall engagement, attributed to its ability to promote motivation, independence, and skill development. These findings reflect the design goals of *Tower of Words*, which uses challenges, rewards, and an archive system to sustain student interest and enhance retention of vocabulary skills. (Lampropoulos & Sidiropoulos, 2024)

In mathematics education, a meta-analysis by Tokac et al. (2019) revealed that video games had a slight but statistically significant positive impact on student achievement. Despite varying effects based on grade level and intervention duration, the study affirmed the potential of game-based learning as a supplemental instructional tool. Similarly, *Tower of Words* provides a gamified platform for language learning, offering engaging, game-based experiences that complement traditional teaching approaches (Tokac et al., 2019).

Tagayeva and Maxanova (2023) emphasized gamification as a transformative approach in primary school English education. Interactive techniques like role-playing, storytelling, and group problem-solving not only support academic success but also cultivate a lifelong love for language learning. These principles align with

Tower of Words, where students progress through levels, earning badges and rewards while developing English proficiency. (Tagayeva Umida Ernazarovna & Maxanova Muhayyo Nabijonovna, 2023)

Game Mechanics and Learning Outcomes

Ružic & Dumancic (2023) emphasizes that aesthetics and mechanics shape educational outcomes. Key elements such as sensation, fantasy, and challenge are integral to *Tower of Words*. Through immersive graphics and a tower-based progression system, players engage in dynamic challenges that enhance their vocabulary skills. (Ružic & Dumancic, 2023)

Game mechanics like avatars, points, levels, badges, and leaderboards further motivate players by tracking and rewarding progress. These components align with the "Action/Task" mechanic, where repetitive actions reinforce skill acquisition and retention. By structuring gameplay around these principles, *Tower of Words* provides an engaging environment for students to practice and master their skills.

2. GAMIFICATION IN ENGLISH LANGUAGE TEACHING (ELT)

Enhancing Vocabulary and Spelling Skills

Gamification has proven effective in enhancing vocabulary and spelling proficiency. Saman (2019) revealed significant improvements among third-grade students after participating in gamified spelling lessons. Fast-paced learners achieved the highest accuracy, while slower learners showed more modest gains, highlighting the need for tailored approaches to gamified learning. (Saman, 2019)

Tower of Words addresses these variations by offering flexible gameplay, allowing students to progress at their own pace. The game's archive feature enables learners to revisit challenging words, ensuring gradual skill development. Similarly, Waluyo and Bucol (2021) highlighted that gamification benefits low-competency students by offering alternative learning approaches, though student discipline and engagement remain critical for success. The reward systems and progress-tracking features in *Tower of Words* are designed to foster consistent engagement and motivation, helping students overcome vocabulary challenges. (Waluyo & Bucol, 2021)

Additionally, Salcedo Mosquera et al. (2024) concluded that gamification enhances vocabulary retention, usage, and motivation in English learning. By integrating dynamic elements like leaderboards, badges, and progressively challenging exercises, *Tower of Words* transforms vocabulary learning into an engaging and effective process. (Julian David Salcedo Mosquera & et al., 2024)

Encouraging Student Engagement in ELT

Gamified elements such as points, leaderboards, and instant feedback have been shown to foster achievement and intrinsic motivation in English Language Teaching (ELT) (Putu Wulantari et al., 2023). These strategies, employed in *Tower of Words*, encourage students to improve vocabulary and spelling skills through interactive gameplay.

Language learning often hinges on vocabulary acquisition, yet limited exposure to English remains a barrier for many learners (Thiagarajah et al., 2022). To address this, *Tower of Words* creates an immersive and accessible platform that promotes active participation and engagement. By incorporating captivating gameplay, character-driven narratives, and interactive challenges, the game sustains student interest and facilitates continuous learning.

Moreover, Al-Dosakee and Ozdamli (2021) highlighted gamification's role in enhancing motivation and creating a more enjoyable learning experience. *Tower of Words* integrates these principles, offering an engaging environment where students develop their English skills through dynamic and rewarding activities (Al-Dosakee & Ozdamli, 2021)

3. STUDENT ENGAGEMENT AND MOTIVATION

Influence of Gamified Elements

Gamified components such as badges, rewards, and ranking systems significantly influence student engagement and learning outcomes. For instance, Smiderle et al. (2020) demonstrated that integrating these elements increased student participation and improved accuracy in programming education. Similarly, *Tower of Words* leverages these strategies by rewarding students with currency and badges, motivating them to progress through levels. The game's leaderboard fosters a sense of competition, enhancing engagement and enabling students to track their progress, aligning with findings that competitive elements improve motivation in gamified settings (Smiderle et al., 2020).

Ahmed et al. (2022) also noted that gamification encourages self-study and boosts learners' confidence (Ahmed et al., 2022), while Rozhenko et al. (2021) observed improvements in the psychological climate during lessons, with increased interest and enjoyment (Rozhenko et al., 2021). These findings resonate with the primary goal of *Tower of Words*: making English vocabulary learning both engaging and enjoyable.

Moreover, Nand et al. (2019) highlighted that challenges, feedback, and graphics are particularly appealing to children. *Tower of Words* incorporates these elements through its gameplay mechanics, real-time progress feedback, and visually engaging animations, ensuring sustained student interest. (Nand et al., 2019)

Competitive vs. Cooperative Gamification

Both competitive and cooperative gamification methods offer unique benefits for vocabulary learning. Dindar et al. (2021) emphasized that while competition can motivate learners, cooperative elements provide social benefits. *Tower of Words* incorporates both approaches, using leaderboards to foster competition and room-based games to encourage collaboration among students. This blend ensures sustained motivation and engagement, helping students practice vocabulary and spelling in a dynamic environment. (Dindar et al., 2021)

4. ADAPTING GAMIFICATION TO STUDENT PROFILES

Personality-Driven Engagement

The impact of gamified elements varies depending on personality traits. Smiderle et al. (2020) found that introverted learners prefer individual challenges, while extroverted students thrive in competitive settings. Tower of Words accommodates diverse learner profiles through personalized challenges, progressively difficult tasks, and scoring systems, catering to both contemplative and competitive learners. (Smiderle et al., 2020)

Yen et al. (2022) stressed the importance of integrating mobile learning trends with pedagogy to engage Generation Z learners. Tower of Words aligns with this by leveraging students' familiarity with technology to create a learner-centered and accessible platform for mastering spelling and vocabulary. (Yen et al., 2022)

Denden et al. (2022) found that perceived usefulness significantly influences students' engagement with gamified platforms. Tower of Words prioritizes utility and enjoyment, ensuring students perceive it as both beneficial and entertaining, which enhances their motivation to learn. (Denden et al., 2022)

5. PEDAGOGICAL BENEFITS OF GAMIFICATION

Improving Learning Retention

Lutfi et al. (2023) demonstrated the effectiveness of gamification in improving retention, with students in gamified environments scoring higher and retaining concepts longer than those in traditional settings. Similarly, Tower of Words enhances retention through engaging mechanics like spelling challenges and an archive system, enabling students to revisit and master vocabulary concepts over time (Lutfi et al., 2023).

Creating Engaging Learning Environments

Gamified elements such as badges and ongoing feedback provide students with a clear sense of progress, as noted by (Sadeghi et al., 2022). Tower of Words combines entertainment and education, encouraging students to improve their vocabulary while enjoying the process.

6. FUTURE DIRECTIONS AND ALTERNATIVE APPROACHES

Challenges in Gamification Design

Careful design is crucial to maximize the potential of gamified tools. Whalen et al. (2023) emphasized the need for personalized approaches to address literacy challenges. Tower of Words adopts this approach by combining technology with educational strategies, making it accessible and engaging for diverse learners (Whalen et al., 2023).

Braet (2024) highlighted the importance of incorporating rewards, challenges, and graphics to maintain student interest. Tower of Words reflects these principles through its progressive towers, real-time feedback, and vibrant visuals, fostering an immersive learning experience (Braet, 2024).

Innovate Applications in ELT

Gamification, which fosters critical thinking and skill application through interactive play, is an important phase in the transformation of education (Huseinović, 2023). This aligns with *Tower of Words*, which utilizes gamified methods to improve English language instruction in a way that keeps students engaged and reduces the stress associated with traditional tests. By integrating games and interactive apps like *Tower of Words* into the curriculum, teachers can create an inviting learning environment while gathering valuable insights into students' progress. This approach emphasizes the role of ICT in education and makes learning more engaging and exciting for today's technology-driven generation.

Gamification for Students with Learning Disorders

Gamification has become a potent instrument for improving learning outcomes, especially for students who struggle with learning disorders like dyslexia. Dymora and Niemiec (2023) investigated the ways in which gamification can help children with dyslexia, particularly those with difficulties in dysorthography (spelling). Their study showed that game-based learning could enhance spelling abilities and inspire students to pursue ongoing self-improvement using cellphones and mobile applications. Games' competitive and goal-oriented elements kept dyslexic students motivated and allowed them to monitor their development. *Tower of Words* is a gamified vocabulary game created to improve language acquisition, and its objectives are in line with the idea of utilizing gamification to help learning. Both studies demonstrate how effective game mechanisms can promote skill mastery, retention, and engagement. *Tower of Words* demonstrates the adaptability of this strategy by using gamification to address more general language acquisition problems, whereas Dymora and Niemiec focused specifically on dyslexic students. Gamification is a useful educational tool for a variety of learner needs since it creates personalized and immersive learning experiences (Dymora & Niemiec, 2019).

SUMMARY

In conclusion, the review of related literature reveals that gamification is a powerful tool for enhancing student engagement and improving vocabulary acquisition. Numerous studies indicate that game-based learning fosters increased motivation, better retention of information, and more active participation compared to traditional methods. The integration of challenges, rewards, and progression systems in educational games has shown significant positive effects on student learning, particularly in areas that require repetitive practice, such as vocabulary development.

The findings from the literature suggest that *Tower of Words* aligns with the best practices in gamified learning, utilizing various game mechanics to create an engaging, interactive environment for vocabulary acquisition. By incorporating elements such as spelling challenges, syllable identification, and silent letter recognition, the game effectively targets multiple aspects of vocabulary learning while maintaining student interest through rewards and progress tracking.

However, the literature also points to some challenges, such as ensuring that gamified elements do not overshadow the learning process and maintaining an appropriate balance between entertainment and educational content. Despite these challenges, the overall body of research supports the potential of gamification as an effective method for improving language learning outcomes, making it a promising area for further exploration and development.

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