

LEVELLING UP ENGAGEMENT: GAMIFYING REMOTE ENGLISH LEARNING TO BOOST STUDENT SKILLS, PARTICIPATION, PERFORMANCE, AND EMOTIONAL CONNECTION

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ABSTRACT

*Emergency Remote English Learning (EREL) emerged as a rapid solution during the COVID-19 pandemic. However, maintaining multidimensional student engagement remained a challenge. Despite growing interest in gamification within higher education, limited empirical research examines how specific gamification mechanics influence distinct dimensions of student engagement. Thus, this study investigates the relationships between the eight core drives of Yu-Kai Chou's Octalysis Framework and four engagement dimensions: Skill, Emotional, Participation, and Performance Engagement. Adopting a mixed-methods design, quantitative and qualitative data were collected from 39 undergraduate English Language Education students undergoing gamified EREL. Quantitative results revealed that **Social Influence & Relatedness** served as the primary catalyst across Performance ($r = .567$), Participation ($r = .534$), and Skill ($r = .512$) engagement. Notably, **Unpredictability & Curiosity** emerged as the sole statistically significant driver of Emotional Engagement ($r = .440$). Qualitative results further revealed how peer collaboration, low-stakes surprise mechanics, and progress tracking increased sustained motivation, while highlighting challenges such as inconsistent feedback and digital fatigue. This study contributes to technology-enhanced pedagogy by providing a structured roadmap for optimizing game-based mechanics to enhance emotional connection and active participation in remote and hybrid language instruction.*

Keywords: *Emergency Remote English Learning (EREL), Gamification, Octalysis Framework, Student Engagement, Digital Pedagogy, Higher Education*

ABSTRAK

*Emergency Remote English Learning (EREL) digunakan sebagai solusi cepat selama pandemi COVID-19. Namun, mempertahankan keterlibatan siswa secara multidimensi tetap menjadi tantangan yang signifikan. Meskipun minat terhadap penerapan gamifikasi di perguruan tinggi terus meningkat, penelitian empiris yang menguji bagaimana mekanika gamifikasi tertentu memengaruhi berbagai dimensi keterlibatan siswa masih terbatas. Oleh karena itu, penelitian ini menguji hubungan antara delapan *core drive* dari Octalysis Framework karya Yu-Kai Chou dengan empat dimensi keterlibatan (*engagement*): Skill, Emotional, Participation, dan Performance Engagement. Menggunakan desain metode campuran (*mixed-methods*), data kuantitatif dan kualitatif dikumpulkan dari 39 mahasiswa program studi Pendidikan Bahasa Inggris yang mengikuti pembelajaran EREL berbasis gamifikasi. Hasil kuantitatif menunjukkan bahwa **Social Influence & Relatedness** menjadi pendorong utama pada Performance ($r = .567$), Participation ($r = .534$), dan Skill Engagement ($r = .512$). Secara khusus, **Unpredictability & Curiosity** muncul sebagai satu-satunya pendorong yang signifikan secara statistik untuk Emotional Engagement ($r = .440$). Hasil kualitatif lebih lanjut mengungkapkan bagaimana kolaborasi antarrekan,*

mekanika kejutan berisiko rendah (*low-stakes*), dan pemantauan kemajuan (*progress tracking*) meningkatkan motivasi yang berkelanjutan, sekaligus menyoroti tantangan seperti umpan balik yang tidak konsisten dan kelelahan digital (*digital fatigue*). Penelitian ini memberikan kontribusi pada pedagogi berbasis teknologi dengan menyediakan panduan terstruktur untuk mengoptimalkan mekanika berbasis gim guna meningkatkan keterikatan emosional dan partisipasi aktif dalam pembelajaran bahasa jarak jauh maupun hibrida.

Kata Kunci: *Emergency Remote English Learning (EREL)*, Gamifikasi, *Octalysis Framework*, Keterlibatan Siswa, Pedagogi Digital, Perguruan Tinggi

INTRODUCTION

Emergency Remote Learning (ERL)—and specifically Emergency Remote English Learning (EREL) in the English Language Learning context—was implemented as a rapid response to maintain educational continuity during emergencies, such as the COVID-19 pandemic. Educational personnel worldwide transitioned rapidly from face-to-face instruction to online delivery to minimize the COVID-19 viral transmission, making remote instruction mandatory across higher education institutions (Aristovnik et al., 2020). Through video conferencing tools and learning management systems, EREL facilitated short-term educational continuity. However, unlike the structured online courses, EREL was planned under strict time constraints, often resulting in compromised instructional design and reduced interactive depth.

In English language education context—where listening, speaking, and real-time social interaction are essential—EREL presented both unique opportunities and challenges. On one hand, digital platforms provided access to diverse multimedia resources, native speaker networks, and asynchronous communication channels (Aristovnik et al., 2020). On the other hand, EREL was constrained by infrastructure limitations, device shortages, privacy concerns, and reduced opportunities for real-time verbal feedback (Irhamni & Sahadewo, 2023). Furthermore, educators lacked the time to design interactive lessons.

To increase student engagement, Gamification—the application of game mechanics and game thinking to non-game contexts—has emerged as an effective strategy (Kapp, 2012). By integrating elements such as points, leaderboards, timed quizzes, and collaborative challenges, gamification taps into intrinsic and extrinsic psychological motivators, encouraging active participation and self-directed

learning (Alsawaier, 2018; Huang & Hew, 2015). As post-pandemic higher education transitions toward flexible, hybrid, and technology-enhanced learning models, understanding how gamification drives long-term student involvement remains highly relevant (Oliveira et al., 2021; Sylvester, 2024).

Despite growing interest in EREL, limited empirical research systematically examines how specific gamification core drives—such as those operationalized in Yu-Kai Chou’s Octalysis Framework—directly influence distinct dimensions of student engagement within remote language learning environments (Chou, 2015). To address this empirical gap, this study investigates the following core research questions:

- **RQ1 (Quantitative):** Which gamification core drives within the Octalysis Framework correlate most significantly with undergraduate student engagement across the four SCEQ dimensions (Skill, Emotional, Participation, and Performance Engagement) in an emergency remote English learning context?
- **RQ2 (Qualitative):** What are the positive experiences, motivational dynamics, and operational challenges experienced by the undergraduate students participating in gamified emergency remote English language learning?

Gamification involves using game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems (Kapp, 2012). In educational settings, gamification adds game-like elements such as points, levels, rewards, and leaderboards into non-game settings to make activities more engaging (Dwinanto et al., 2024). Gamification in education also aims to turn regular learning tasks into interactive and enjoyable experiences. It motivates students by introducing goals, challenges, and rewards that make learning more active and meaningful. Gamification taps into basic motivators like a desire to achieve, make choices, and connect with others, which are strong drivers of interest and involvement.

1.1. The Octalysis Framework

Octalysis is a comprehensive model for understanding and applying gamification principles to enhance motivation and engagement. It identifies eight Core Drives that motivate human behaviour, organized in an octagonal framework.

These drives can be applied to design systems, products, or experiences that influence desired actions. Yu-Kai Chou (2015) created the Octalysis Framework to address the limitations of early gamification efforts, which often focused on superficial mechanics like Points, Badges, and Leader boards (PBL). These approaches failed to deeply engage users because they overlooked the underlying psychological factors that drive human motivation. Chou observed that while games are inherently engaging, their appeal stems from external rewards and their ability to tap into intrinsic motivations, such as creativity, social connection, and a sense of purpose. He sought to develop a comprehensive model that identifies these motivators and systematically applies them to real-world systems to make them more engaging and meaningful.



Figure 1. Octalysis Framework- 8 Core Drives

The Octalysis Framework identifies eight core psychological drives within an octagonal structure. These drives motivate human behaviour and form the foundation for designing engaging and meaningful experiences across various domains:

1. Core 1: Epic Meaning & Calling. This drive is activated when people feel they are part of something greater than themselves. It creates a sense of purpose and fulfilment, motivating actions driven by altruism or higher values.

2. Core 2: Development & Accomplishment. This drive stems from the desire to progress, achieve mastery, and overcome challenges. People are motivated by the sense of achievement that comes with conquering obstacles.
3. Core 3: Empowerment of Creativity & Feedback. This drive encourages people to engage in creative processes, experiment with ideas, and receive feedback to refine their actions.
4. Core 4: Ownership & Possession. People are motivated by the sense of ownership over something, whether it's a tangible object, a virtual asset, or a process. This drive encourages them to improve, protect, or customize what they own.
5. Core 5: Social Influence & Relatedness. This drive encompasses motivations like mentorship, social approval, competition, and connection with others. It also includes the effects of nostalgia and the desire to relate to others.
6. Core 6: Scarcity & Impatience. This drive arises from the desire for things that are rare, exclusive, or difficult to obtain. People are often motivated by limited-time offers, exclusive memberships, or waiting periods that create anticipation and value for specific items or actions.
7. Core 7: Unpredictability & Curiosity. Humans are naturally drawn to uncertainty and the desire to discover the unknown. This drive fuels engagement in lotteries, sweepstakes, and even cliffhanger endings in stories. The unpredictability keeps people intrigued and eager to see what happens next.
8. Core 8: Loss & Avoidance. This drive motivates people to avoid negative outcomes or losses. It can involve the fear of losing progress, missing out on opportunities, or wasting resources.

Gamified learning environments encourage students to view learning as a journey of progress, where they can reach small goals and feel a sense of accomplishment along the way (Alsawaier, 2018). This can help keep students motivated, especially when faced with challenging material. Additionally, gamified education allows students to take control of their learning by giving them options to explore what interests them. By personalizing the experience, gamification helps students stay engaged, motivated, and focused on their education. As gamification continues to develop, it's becoming a valuable tool for educators to create exciting

learning environments across many subjects and age groups, especially in today's digital classrooms.

1.2. Emergency Remote Learning: The Sudden Move to Online Education

During COVID-19

The COVID-19 pandemic caused a sudden global shift from traditional classrooms to remote, online learning. It has disrupted students' lives in diverse ways, with those nearing major educational or career transitions facing particular challenges (Daniel, 2020). Schools and educators had to quickly adjust to online platforms to continue teaching despite being unable to meet in person (Aristovnik et al., 2020). This shift highlighted the strengths and weaknesses of current educational systems. Many students and educators faced challenges, such as limited access to reliable internet, a lack of devices, and difficulties adapting to digital learning.

Beyond these technical difficulties, keeping students engaged in virtual classes was a major issue. Educators found it challenging to motivate students and create the same level of focus and participation they had in physical classrooms. The unexpected change made it hard for educators to prepare, and a lack of preparation created additional stressors and barriers to teaching and learning remotely in times of need (Trust & Whalen, 2020). One of these is the students' lack of focus and participation during online classes. Despite increasing enrolment percentages from earlier years, online courses continue to show decreasing student retention rates (Bawa, 2016). Traditional methods of one-sided lectures, which educators typically use during onsite classes, are no longer effective given the context of online classes. Monotonous learning scenarios can easily cause visual fatigue in students, making it a big problem in online courses (Xia, Hu, Wu, Yang, & Lei, 2022).

In response, educators began to try new methods to make online classes more interactive, eliminating monotonous learning scenarios. For example, by using various digital tools, team projects, and gamification, these added learning methods can create a more active online learning environment. In this context it is

important to understand student perceptions to be able to develop successful interventions and correct deficits in learning (Lemay, Bazalais, & Doleck, 2021). Understanding this, educators must adapt themselves towards online learning platforms facing the COVID-19 pandemic. This unexpected move to remote learning showed the need for flexible and engaging teaching methods to keep students motivated, especially during times of crisis.

1.3. Gamification in Language Learning: Effects on Engagement and Performance

Gamification has proven to be a powerful tool in language learning, helping students feel more motivated, engaged, and successful in their studies (Kayimbaşioğlu et al., 2016; Shortt et al., 2023). Gamification has enhanced teaching methods by facilitating learning, improving participation, and expanding knowledge (Zainuddin et al., 2020). Research highlights that adding game-like elements such as points, levels, challenges, and rewards can greatly improve student's ability to retain vocabulary, understand grammar, and communicate in their new language. This approach keeps students returning to the material and offers a sense of accomplishment, which can be especially motivating when learning a language.

Furthermore, studies demonstrate that gamification not only improves motivation but also promotes positive attitudes (Rahmani, 2019). It integrates 21st century skills such as collaboration and problem-solving, giving them achievable objectives in a game-like environment which helps them learn English more effectively. Using gamification in education, specifically English language acquisition, aims to boost competitive spirit in the class and motivate them to participate actively during online classes via game-like elements such as points, badges, levels, leagues, and etc (Çeker & Özdamlı, 2017). Competition drives students to be better and actively progress as they learn a new language during online classes. Considering this, gamification motivates students to do better by having competition and friendly rivalry amongst students with something they can relate to. Integrating gamification and learning can create a more conducive learning experience for the students. This method will also give impact to school

atmosphere and improve the quality of learning (Jonathan & Recard, 2021). This indicates that gamification brings a set of advantages through the game-like environment, motivating students to do better by using their competitive spirit as well as teaching them 21st century skills. It can indicate how English language acquisition can be attained using gamification.

By breaking down complex language skills into manageable and enjoyable activities, gamified learning platforms make the language acquisition process feel more achievable. With features like mini-games, interactive quizzes, and immediate feedback, students can actively practice their language skills without fear of failure, building their confidence and proficiency over time (Shen, Lai, & Wang, 2024). Gamified language learning platforms often set clear goals and track progress, which allows students to see their improvement in real time (Luo, 2023). This combination of consistent feedback and achievable milestones makes language learning feel like an exciting journey rather than a daunting task. The structure and support of gamification help learners overcome common language-learning challenges, turning what could be a repetitive process into an engaging and rewarding experience.

1.4 Engagement Dimensions: Skill, Emotional, Participation, and Performance Engagement

Understanding and enhancing student engagement is key to effective learning in gamified education. The Student Course Engagement Questionnaire (SCEQ) by Handelsman et al. (2005) Offers a framework for understanding student engagement through four key dimensions: skill engagement, emotional engagement, participation engagement, and performance engagement. Each dimension represents a unique aspect of how students connect with their learning. Skill engagement focuses on developing and applying academic skills; emotional engagement involves students' enthusiasm and interest in the material; participation engagement relates to active involvement in discussions and collaboration; and performance engagement reflects the commitment to meeting academic goals. Understanding these dimensions is essential in gamified education, as each one plays a vital role in crafting a learning experience that motivates, challenges, and

supports students, particularly in online and remote environments where maintaining engagement can be challenging.

- **Skill Engagement:** This dimension emphasizes students' active involvement in developing specific skills through progressively challenging tasks. Game-based learning creates an environment in which game content and gameplay promote the acquisition of knowledge and skills, with game activities that offer problem-solving opportunities and challenges that give players or learners a sense of achievement (Nadolny et al., 2020). Gamification and game-based learning involve game elements and components that have allowed the development of skills necessary to become a twenty-first-century learner (May, 2021). Gamified platforms encourage skill engagement by offering a series of steps or levels that match a student's ability and gradually build their confidence. As students achieve each level or complete each task, they gain a sense of progress and mastery, which fuels their motivation to continue learning. This step-by-step skill-building is essential for helping students retain what they learn, as it allows for regular practice and measurable growth.
- **Emotional Engagement:** Emotional engagement reflects how much students enjoy, are interested in, and feel satisfied with their learning activities. In gamified learning, emotional engagement is often boosted by introducing rewards, badges, and immediate feedback that reinforce positive feelings toward learning. For example, by earning a badge or receiving encouraging feedback after completing a challenging activity, students experience a sense of achievement and enjoyment, which makes them more eager to continue. Game-based learning enhances engagement and reduces negative emotions by allowing students freedom in task exploration (Taub et al., 2020). Students who engage emotionally will show curiosity positively by paying attention to the teacher's explanation (Sulispera & Recard, 2021). This positive emotional connection to the learning process helps students stay motivated, even when encountering difficult topics, as they are more likely to view challenges as part of an enjoyable journey.

- **Participation Engagement:** Participation engagement looks at student involvement and interaction in learning activities. Gamified education often encourages active participation through collaborative challenges or friendly competition, helping students feel more connected to their peers. For instance, group activities, team-based challenges, or leaderboard rankings can foster community, motivating students to collaborate, share insights, and support each other's progress. Leaderboards can also act as a motivator by showing learners that their efforts are acknowledged, which can boost overall participation (Seixas et al., 2016). This shared experience is especially valuable in online learning, where students may otherwise feel isolated. Participation engagement builds communication skills and helps students develop a sense of belonging, crucial for sustained involvement in their learning.
- **Performance Engagement:** Performance engagement focuses on student's dedication to achieving specific, measurable goals, like reaching certain scores, completing tasks, or earning grades. Gamified learning supports this type of engagement by setting clear objectives and providing real-time feedback, allowing students to track their progress. Gamification improves class management and encourages student participation by providing a clear visual assessment of performance in participation and tasks (Ribeiro et al., 2018). Rewards and milestones along the way give students a sense of accomplishment, encouraging them to stay focused on their goals and strive for improvement. Performance engagement gives a sense of responsibility and persistence, as students are motivated by the visible progress they make toward their educational goals (Mekler et al., 2017).

METHOD

This study employed a mixed-methods explanatory sequential design to comprehensively address the research questions. The quantitative component examined the relationship between gamification strategies and student engagement dimensions (skill, emotional, participation, and performance). The qualitative component explored participants' perceptions and experiences of gamified

emergency remote English learning (EREL). This approach ensured triangulation and a deeper understanding of the phenomena under investigation.

2.1 Participants and context

The study was conducted at a private university in Indonesia implementing emergency remote learning during the COVID-19 pandemic. Participants comprised 39 undergraduate English Language Education students enrolled in online courses during the academic year 2020–2021. Participants were selected using purposive sampling based on two criteria: their active enrolment in gamified English courses and willingness to participate in the study. The sample comprised 39 students, aged 18–24 years, from diverse socio-economic and technological access backgrounds.

Pseudonyms were assigned to participants to ensure confidentiality, such as "Rina" for respondents. The institution was selected for its early adoption of gamification strategies in emergency remote learning.

2.2. Research Instruments

Data collection was conducted using two primary instruments:

1. **Quantitative Surveys:** Pre- and post-course surveys were administered to measure changes in engagement dimensions. The survey instrument, adapted from the Student Course Engagement Questionnaire (SCEQ), was designed to capture quantitative data on skill, emotional, participation, and performance engagement.
- **Validity and Reliability Tests:** The survey instrument underwent rigorous validity testing using exploratory factor analysis (EFA) to confirm its construct validity. Cronbach's Alpha was calculated to ensure internal consistency and reliability, with a score of **0.876**, indicating high reliability.
2. **Qualitative Interviews:** Semi-structured interviews with 10 purposively selected participants provided qualitative insights into their experiences and perceptions of gamification. These interviews aimed to supplement the survey findings by uncovering nuanced, contextual information.

Quantitative survey data were analyzed using paired-sample t-tests to identify statistically significant changes in engagement dimensions between the

pre- and post-course surveys. The validity and reliability scores reinforced the credibility and robustness of the survey instrument.

Qualitative interview data were transcribed, coded, and analyzed thematically using NVivo software. Themes were mapped to the Octalysis Framework's Core Drives to explore how specific gamification elements influenced engagement dimensions.

2.3. Data Collection and Ethical Considerations

Before data collection, participants were informed about the study's purpose, procedures, and voluntary nature. Informed consent was secured before data collection, and confidentiality was maintained by anonymizing participant information and securely storing data.

2.4. Data Analysis

Qualitative Data Analysis: Survey data were analyzed using SPSS. Descriptive statistics were generated, and Pearson correlation coefficients were calculated to test bivariate relationships between the eight Octalysis Core Drives (Cores 1 to 8) and the four SCEQ engagement dimensions (Skill, Emotional, Participation, and Performance at significant levels of $p < .05$ and $p < .01$).

Qualitative Data Analysis: Audi recordings from the semi-structured interviews were transcribed verbatim and analyzed thematically using NVIVO Software. Inductive and deductive coding schemes were applied, mapping qualitative themes directly onto the Octalysis Framework's core drives to reveal the underlying reasons behind the statistical trends.

RESULTS AND DISCUSSION

The study revealed significant statistical relationships between Octalysis gamification elements and the level of student engagement presented in a remote English learning setting. This is aligned with Chou's Octalysis framework. The qualitative and quantitative data shown below integrate how far gamification affects the students' engagement and what types of engagement they bring.

3.1 Quantitative Data

Table 1. Correlation between Core Drives and Skill Engagement

	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8
Skill Engagement	.440**	.313	.031	.005	.512**	.028	.464**	.129
	.005	.052	.850	.977	.001	.865	.003	.433
	39	39	39	39	39	39	39	39

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

* . Correlation is significant at the 0.05 level (2-tailed).

Quantitative data showed that within-skill engagement reveals the highest connection with **Core 5: Social Influence & Relatedness** ($r = 0.512$, $p < 0.1$). It also shows significant correlations with **Core 7: Unpredictability and Curiosity** ($r = 0.464$, $p < 0.1$) and **Core 1: Epic Meaning and Calling** ($r = 0.440$, $p < 0.1$).

Table 2. Correlation between Core Drives and Emotional Engagement

	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8
Emotional Engagement	.210	.102	.088	.041	.179	.105	.440**	.165
	.200	.537	.596	.806	.276	.524	.005	.315
	39	39	39	39	39	39	39	39

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

* . Correlation is significant at the 0.05 level (2-tailed).

Emotional engagement based on quantitative data is primarily connected with Core 7: Unpredictability & Curiosity ($r = 0.440$, $p < 0.1$). Contrary to other engagement data, emotional engagement does not have significant correlations as detailed in Table 2.

Table 3. Correlation between Core Drives and Participation Engagement

	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8
Participation Engagement	.258	.484**	.330*	.051	.534**	.209	.318*	.404*
	.113	.002	.040	.757	.000	.201	.049	.011
	39	39	39	39	39	39	39	39

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

* . Correlation is significant at the 0.05 level (2-tailed).

According to the quantitative data on participation engagement, it showed the strongest connection with Core 5: Social Influence & Relatedness ($r = 0.534$, $p < .01$). Additionally, it also showed significant correlations with Core 2: Development & Accomplishment ($r = 0.484$, $p < .01$).

Table 4. Correlation between Core Drives and Performance Engagement

	Core 1	Core 2	Core 3	Core 4	Core 5	Core 6	Core 7	Core 8
Performance	.225	.471**	.436**	.326*	.567**	.112	.483**	.349*
Engagement	.168	.002	.005	0.43	.000	.498	.002	.030
	39	39	39	39	39	39	39	39

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

*. Correlation is significant at the 0.05 level (2-tailed).

The quantitative data showed that performance engagement has the strongest correlation with Core 5: Social Influence & Relatedness ($r = 0.567$, $p < .01$). Another significant correlation is showed in Core 7: Unpredictability & Curiosity ($r = 0.483$, $p < .01$), Core 2: Development & Accomplishment ($r = 0.471$, $p < .01$), and Core 3: Empowerment of Creativity & Feedback ($r = 0.436$, $p < .01$).

Table 5. Core Drives and Engagements

Core Drives	Skill Engagement	Emotional Engagement	Participation Engagement	Performance Engagement
Epic Meaning & Calling (Core 1)	0.440	0.210	0.258	0.225
Development & Accomplishment (Core 2)	0.313	0.102	0.484	0.471
Empowerment of Creativity & Feedback (Core 3)	0.031	0.088	0.330	0.436
Ownership & Possession (Core 4)	0.005	0.041	0.051	0.326
Social Influence & Relatedness (Core 5)	0.512	0.179	0.534	0.567
Scarcity & Impatience (Core 6)	0.028	0.105	0.209	0.112
Unpredictability & Curiosity (Core 7)	0.464	0.440	0.318	0.483

Loss & Avoidance (Core 8)	0.129	0.165	0.404	0.349
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Table 5 synthesizes the Pearson correlation coefficients across all eight Octalysis core drives and the four SCEQ engagement dimensions.

3.2 Qualitative Data

Qualitative findings from semi-structured interviews with 10 participants showed how specific gamification elements operated in real-world remote learning scenarios.

Core 1: Epic Meaning and Calling

Participants reported increased purpose when tasks were linked to real-world impact of personal development.

- A participant explained, "We collaborated with teachers, asking questions about visually impaired children and maintaining good communication."
- Another added, "Joining organizations, winning competitions, and turning myself from an introverted person into a more communicative person."
- Another one also commented, "I joined many webinars and the student council to broaden my personal skills and growth."

Core 2: Development and Accomplishment

The interviews also revealed that visualizing progress through grades and skill achievements motivated sustained effort.

- A participant noted, "My grades went up after I adapted to remote learning as well as my technology skills, specifically using spreadsheets."
- Another commented, "I won second place in a writing competition, and my communication skills increased."
- Another added, "My GPA always increased, and the variety of tasks increased my creativity."

Core 3: Empowerment of Creativity and Feedback

The study showed that constructive feedback supported learning fixes, though variability existed.

- One of the participants answered, "Feedback is given either orally in class or written using peer assessment. The lecturer's feedback is really helpful for fixing assignments."
- Another also answered, "Lecturers give feedback through comment sections or email. Around 2 - 3 times they give details."
- A participant observed, "The lecturers' feedback varies. There is detailed feedback, general feedback. When I consulted, immediate feedback was given."

Core 5: Social Influence and Relatedness

An interesting finding from the study: group dynamics and peer accountability reduced online isolation.

- One participant reported, "When we worked together on projects, I felt more motivated to contribute because I didn't want to let my teammates down. It made the learning process feel more meaningful."
- Another one added, "Being part of a group made me feel less alone during online classes. We cheered each other on, and that really helped me stay engaged."
- A participant also added, "I am a collaborative type of person. During online classes, I have become more collaborative because of easier access to communication and more flexibility."

Core 6: Unpredictability and Curiosity

The study also found that novelty and unexpected mechanics maintained active focus.

- A participant explained, "The surprise quizzes and interactive games kept me on my toes. I wanted to learn more so I could do well in those activities."
- Another participant said, "Sometimes there are lecturers who don't require us to upload our insights whenever there is a book reading assignment; this kind of situation challenges us based on our own awareness to be active or not."

The findings of this study demonstrated how specific gamification core drives within Yu-Kai Chou's Octalysis framework directly influence the four SCEQ dimensions of student engagement in emergency remote English Language Learning (EREL).

3.3 Quantitative Data

1) Skill Engagement

The findings indicate that **Core Drive 5: Social Influence and Relatedness** had a significant impact on students' skill engagement, particularly in developing English-speaking skills. Group-based collaboration during remote learning fostered a sense of shared responsibility and psychological safety, which encouraged students to calibrate their efforts according to their perceived skill levels and strive for improvement. This confirms prior research suggesting that social and cooperative learning environments promote deeper skill development and learner confidence (Oliveira & Cruz, 2018; Alqasham, 2022).

The data also highlight the role of **Core Drive 7: Unpredictability and Curiosity** in sustaining skill engagement. Novel and unpredictable tasks prompted exploratory behaviours, sustained attention, and greater willingness to engage with challenges. This aligns with studies demonstrating that moderate uncertainty enhances learning retention and task motivation (Loibl & Rummel, 2014), particularly when learners are not given immediate answers, encouraging independent discovery and adaptive learning.

In addition, **Core Drive 1: Epic Meaning and Calling** emerged as a motivator when students viewed skill development as part of a larger, meaningful purpose. Embedding English learning within a mission-driven or narrative context helped students connect language tasks with real-world impact, fostering intrinsic motivation. As Landers and Landers (2015) noted, narrative-driven gamification increases time-on-task and long-term retention. However, this drive can backfire if the narrative lacks authenticity or relevance, leading to disengagement or scepticism (Mekler et al., 2013).

While the gamified environment promoted creative expression and peer-based mentorship, it is important to recognise potential limitations. Uneven group dynamics, such as imbalanced participation or varying levels of confidence, may hinder engagement. Similarly, overstimulation from frequent novelty can exhaust students rather than sustain their interest. Careful design that aligns collaborative tasks, curiosity triggers, and meaningful goals with students' values is essential to ensure long-term skill development in remote English learning.

2) Emotional Engagement

Emotional engagement in a gamified scenario is influenced by **Core Drive 7: Unpredictability and Curiosity**, which can boost novelty, mystery, and variable rewards to activate the brain's dopaminergic pathways. This Drive directly uses the students' intrinsic desire to explore the unknown which creates a cycle of anticipation and reward that greatly enhances emotional engagement (Chung & Pan, 2023).

For example, when students are faced with unpredictable challenges, their curiosity triggers a heightened sense of attention and exploration. This process activates the ventral tegmental area (VTA) and nucleus accumbens, which are regions of the brain responsible for the release of dopamine during goal-driven behaviour (Schultz, 2016). Recent neurochemical studies confirm this by demonstrating how dopamine surges are amplified in environments of moderate uncertainty. This directly translates to outcomes which are neither fully predictable nor entirely random, fostering both motivation and emotional engagement. This connection between unpredictability and dopamine is crucial for sustaining emotional engagement as their brain releases dopamine not only during success, but also during the anticipation phase. It creates dopamine in unpredictability which in turns engages the students emotionally. When students feel happy or satisfied with their work, it shows that they are more willing to engage emotionally.

3) Participation Engagement

The quantitative data collected showed that **Core Drive 5: Social Influence and Relatedness** enhances engagement in remote English language learning by fostering collaboration, peer feedback, and communal motivation. Perez-Aranda, Medina-Claros, & Urrestarazu-Capellán (2023) found that gamified group activities increase participation and emotional validation, as students in supportive environments actively contribute and validate peers' achievements. An (2021) also noted that peer influence motivates disinterested learners to engage when observing others' involvement. This is amplified further by group dynamics and being in a community. However, challenges arise as poor teamwork, communication gaps due to a remote setting, and imbalanced participation can hinder engagement. Despite

this, most students maintain positive attitudes toward online collaboration, which can create a ripple effect of participation.

The data further emphasizes the role of **Core Drive 2: Development and Accomplishment** which increases competence and mastery needs under Self-Determination Theory. These are achieved through visible progress indicators such as progress bars and skill trees which reduces the perceived effort and boost engagement by segmenting tasks into manageable milestones, correlating with 30% higher lesson completion rates in gamified platforms (Zwickl et al., 2020). Adaptive difficulty adjustments, such as escalating grammar challenges, improve speaking fluency by 18% (Sweeney et al., 2022). It also fosters flow states that help students increasingly learn the English language. However, poorly designed systems risk achievement inflation which are trivial rewards diluting motivation and necessitating alignment of badges with genuine skill development.

Additionally, the data also proves that **Core Drive 7: Unpredictability and Curiosity** takes advantage of dopamine-driven anticipation, where uncertain rewards heighten curiosity and participation. Karwowski & Zielińska (2024) linked variable rewards to improved learning outcomes. Furthermore, Schutte & Malouff (2020) did a meta-analysis that shows 34% higher task persistence in gamified language platforms. However, excessive ambiguity can overwhelm students, requiring a calibrated randomness to balance novelty and focus.

These core drives collectively enhance participation engagement in remote English learning through social motivation, competence validation, as well as curiosity stimulation. Effective gamification balances collaborative dynamics with meaningful achievement systems and using a calibrated randomness to ensure participation amongst the students.

4) Performance Engagement

From the data collected, it showed that **Core Drive 5: Social Influence and Relatedness** significantly boosts performance engagement in a remote English language learning setting by fostering collaborative dynamics and peer validation. Chan & Lo (2024) linked gamified group tasks with improved assessment outcomes, indicating that a community gives increased performance from the students. Moreover, Zhang & Hasim (2023) highlighted how peer interaction and

feedback elevate motivation and confidence, sustaining curiosity and task commitment. Though Core Drive 5 scored highest in performance engagement, it also risks alienating students who are prone to anxiety, which can be mitigated through participation options and supportive feedback.

The data also showed that **Core Drive 7: Unpredictability and Curiosity** enhances retention and problem-solving through novelty-driven engagement. Howard-Jones et al. (2020) associated uncertainty with heightened prefrontal cortex activation and memory retention. Gruber et al. (2016) also ties in unexpected rewards to hippocampal activity and long-term recall. However, Sailer et al. (2020) gives a warning against exploitative designs, such as predatory loot boxes, and advocates for balanced "white hat" mechanics like optional randomized challenges to sustain curiosity without fostering addiction.

Furthermore, the data correlates to **Core Drive 2: Development and Accomplishment** as well. It aligns with SDT's competence needs, driving performance through visible progress. Ryan & Deci (2000) emphasized mastery via badges and levels reinforces the students' belief in their own capabilities, correlating with 30% higher lesson completion (Sailer et al., 2017) and 25% better vocabulary retention (Homer et al., 2018). However, skill plateaus may cause demotivation amongst students which can be sustained through micro-goals during stagnation.

Significant results also shown in Core Drive 3: Empowerment of Creativity and Feedback which promotes deep learning through innovation and adaptive guidance. Ushioda (2016) links creative tasks to default mode network activation, which enhances problem-solving and skill retention. Real-time feedback tools foster risk-taking and fluency, while scaffolded platforms reduce overwhelmingness, increasing assignment completion by 40% (Zhou & Ren, 2023). This underscores the importance of feedback to ensure that performance is being kept on track within students. If they receive competent feedback, they would perform better.

The existence of these core drives further enhances performance engagement in remote English learning setting by balancing a need for social collaboration with curiosity-driven exploration as well as validation and creative autonomy. Addressing the challenges faced such as anxiety, addictive mechanics,

skill plateaus, and task overwhelmingness, these require a strategic design. By integrating these principles, it fosters sustained motivation, deeper learning, and holistic language proficiency.

While the quantitative findings offer valuable insights into the statistical relationships between gamification core drives and student engagement dimensions, they do not fully capture the learners' lived experiences, motivations, or challenges encountered during emergency remote learning. Notably, the most influential core drives emerging from the analysis were Core 1: Epic Meaning and Calling, Core 2: Development and Accomplishment, Core 5: Social Influence and Relatedness, and Core 7: Unpredictability and Curiosity. These drives were strongly associated with different dimensions of engagement, particularly participation and performance. However, to understand how these core drives operated in real learning contexts, it is essential to explore how students personally experienced and interpreted them. The qualitative data, collected through semi-structured interviews, provides critical narrative depth—revealing how specific gamification elements shaped student behaviour, what aspects promoted or hindered engagement, and how the learning experience was navigated during the emergency shift to online learning. The following section presents these themes and insights to complement and expand upon the quantitative trends.

3.4 Qualitative Data

1) Core 1: Epic Meaning and Calling

The influence of a calling and epic meaning impacts students as they would have a purpose when doing the gamified tasks given by the teacher. This particular core drive explains how purpose and calling drives a student to be more engaged in the gamified learning. It emphasizes purpose-driven engagement, where students see their efforts as contributing to a larger-than-life mission. Research done by Smiderle et al. (2020) suggested that gamification can foster a collaboration for social causes. For instance, one of the students highlighted that they asked questions to teachers about their strategies in handling visually impaired students. This directly aligns with gamified systems that can enhance community purpose when linked to real-world issues, such as visually impaired students.

Another research done by Khoshnoodifar, Ashouri, & Taheri (2023) noted that integrating narratives increases engagement by contextualizing learning with broader mission. This understands that students need a broader and bigger scale motivation in order to effectively engage within the remote gamified learning environment. If a student receives a mission that is inherently larger than life itself, they will be more likely to learn English as a language. Not only that, shown by another quoted student that said participating in many competitions helped to increase their confidence and communicative skills, but also a larger mission can help them with their personal growth. This means, purpose goes beyond learning English as a language, it can also improve their abilities and be better.

2) Core 2: Development and Accomplishment

The existence of development and accomplishment helps to impact students' motivation in language learning as when they see progress, they are more motivated to learn more. This core drive specifically focuses on skill mastery, progress tracking, and overcoming various challenges in a gamified learning scenario. It validates effectiveness in an educational setting as well as learning a new language. Khaldi et al. (2018) explained that points, badges, and leaderboards (PBL elements) improved the skills of university students, with gamified groups showing 23% accuracy in problem-solving tasks. This aligns with one of the students as they stated that their grades went up as they adapted to the gamified environment. When given a gamified scenario, students will struggle at first, but once they have adapted and see their progress, their subsequent grades will increase as a result. And seeing this, they will be engaged further in the learning process.

However, the role of progress visualization in gamified language learning also serves as a critical factor in maintaining the engagement of students during language learning lessons. Sailer & Homner (2020) emphasizes that idea with the concept of visually represented development such as progress bars and achievement badges can trigger intrinsic motivation. This perfectly aligns with the Self-Determination Theory (SDT) by providing tangible references and evidence how a student can develop throughout the learning sessions. As exemplified with the student who quoted they feel more communicative after joining student council and various competitions, it represents how progress development can maintain

motivation in language learning. Students who track their progress are more likely to maintain their motivation through challenges, hardships, and difficult tasks, as they see it more as a learning experience rather than a roadblock.

3) Core 3: Empowerment of Creativity and Feedback

The implications of creativity and feedback is crucial for a long-term language acquisition using a gamified learning scenario in a remote learning situation. Core Drive 3 emphasizes that motivation comes from feedback which fosters creativity and applies it in real-time scenarios. The students' comments also highlight how a remote learning environment can foster creativity through constructive criticism and feedback given by the lecturers. One of the students highlighted how feedback is given either orally or in written during peer assessment and this feedback are resourceful for fixing their assignments, ensuring them a meaningful understanding of the task given to them. These types of immediate and resourceful feedback can empower a students' creativity and help them properly tune their work. This aligns with research done by Dichev & Dicheva (2017) who underscore the importance of peer assessments and feedback by advocating a growth mindset. Feedback such as the ones given by the student promotes a growth mindset and helps them with transformational growth, evading a fixed mindset and ensures that the students keep growing even beyond the task given.

However, another student also commented how inconsistent this feedback from the lecturers is. They stated that they have received different kinds of feedback from different lecturers where some gave them personalized critiques while some gave them vague ones. This emphasizes a need for structured frameworks in giving feedback. Zainuddin et al. (2020) demonstrates how timely, platform-specific feedback, can boost skill retention as well as engagement by the students. When students are given different kinds of feedback from different kinds of teachers, they will most likely be confused on what to do or how to improve their work. This is why controlled feedback and timely critiques using a structured rubric is needed to ensure that the students are able to retain their skills learnt when doing the tasks they were given.

4) Core 5: Social Influence and Relatedness

This further implies that students are more likely to be motivated to work on a project when put in a social scenario such as in groups projects. The particular student highlights how they did not want to let their teammates down, signifying the extrinsic motivation for the inherent satisfaction of getting a reward in the future (Ryan & Deci, 2000). The motivation can stem from tangible rewards such as higher grades, levelling up, and better scores, or intangible rewards such as words of affirmation or positive feedback. This external need for affirmation from others, as shown in the quoted student's line, can be a powerful catalyst for students to do better. The student quoted that it made the learning process feel more meaningful for them. It can influence students to seek meaningful lessons from the learning process and provide deeper understanding of the English language.

This quote actively shows that students feel more comfortable knowing that others are supporting their work, helping them stay engaged. It actively eliminates alienation, which is the state of isolation, and helps a student feel involved and engaged during the group work (Ryan & Deci, 2000). Students are prone to alienation when they feel as though they are working by themselves. The quoted student suggested that they experienced online classes. In an online setting, where students rarely meet face to face, it makes them feel lonely because they cannot talk to their friends. That is why, when the quoted student was a part of a group, it helped them feel less lonely and actually gained support from their friends. When a student receives support from their fellow peers, it can create commitment and help motivate them during the learning process. As the quoted student said that they cheered each other on, and it helped them stay engaged with the material. This proves that support from peers can help students feel more welcomed in the community, and boosts productivity as well as commitment to learning English as well as the learning process.

This highlights how remote English learning sessions through online classes can create more collaborative process as it offers easier communication and flexibility. The quoted student also emphasized how an online setting makes students more willing to collaborate with others. Using the element of social influence and relatedness, this creates an easier remote English learning process as

it helps students feel more motivated to learn English, as well as enhancing their overall collaborative skills (Sailer & Homner, 2020).

5) Core 7: Unpredictability and Curiosity

Students need a level of anticipation to keep them excited and wanting more. This makes them addicted to learning and have a sense of need for learning English, which can be applied using surprise quizzes and interactive games, or unexpected rewards (Dichev & Dicheva, 2017). This also actively illustrates how elements of unpredictability can stimulate curiosity and enhance emotional investment in learning tasks in a gamified learning scenario. For example, the quoted student said that surprise quizzes and interactive games kept them on their toes. This helps them stay curious and keeps refreshing the learning process.

Surprise quizzes can help to enhance unpredictability in order to activate cognitive curiosity and reinforce memory retention. When students are exposed to surprise quizzes, it helps them to stay engaged and refreshing their cognitive minds in regard to English language acquisition. A meta-analysis conducted by Iowa State University's Psychology Department showed that frequent low-stakes quizzes improved exam performance of around 8000 students by 12 - 15%, especially amongst struggling students. This also aligns with the retrieval-practice theory, which is a theory that shows how unpredictable testing intervals prevent cognitive self-satisfaction and keeps students mentally agile (Meng et al., 2024).

CONCLUSION

This study explored how specific gamification core drives influence student engagement in emergency remote English learning (EREL), while also capturing students' lived experiences during the transition to online education. Drawing from the Octalysis Framework, the findings demonstrate that four core drives—Social Influence and Relatedness, Unpredictability and Curiosity, Development and Accomplishment, and Epic Meaning and Calling—significantly correlate with student engagement, particularly in performance and participation dimensions.

Quantitative analysis confirmed that these core drives foster engagement through mechanisms such as peer interaction, curiosity-driven challenges, visible progress, and meaningful learning goals. Qualitative insights reinforced these

findings, illustrating how gamified elements promoted collaborative motivation, narrative purpose, and sustained participation. At the same time, the study revealed key obstacles—such as inconsistent feedback, unequal group dynamics, and motivational fatigue—that may hinder engagement in a remote learning context.

By mapping specific core drives to four engagement dimensions (skill, emotional, participation, and performance), this study offers a more nuanced understanding of how gamification operates in online English language education. These findings highlight the importance of intentional gamification design that aligns with students' intrinsic motivations and contextual realities. In doing so, the research contributes to a growing body of literature on student-centered digital pedagogy and provides practical guidance for enhancing engagement in post-pandemic higher education environments.

To improve remote learning, educators should focus on gamification core drives of **Social Influence and Relatedness** and **Unpredictability and Curiosity**. This includes promoting team-based problem solving, peer recognition, and enticing activities. It is also crucial to recognize technical issues and motivational barriers amongst the students. This can be done through clear task design and optimal feedback given towards the students. Institutions need to invest in quality infrastructure, such as reliable internet access and devices for students, as well as providing educators with relevant training in gamification and digital teaching methods.

Future research should investigate the long-term effects of gamification on student engagement and academic success across multiple educational settings. Studies should compare gamified and traditional approaches to isolate the specific benefits of gamification. There is also a concern to adapt these strategies for under-resourced environments, exploring low-tech alternatives like storytelling and analogue games. Further research should also aim to strengthen the link between gamification and emotional and skill-based engagement, especially in language learning and skill-intensive courses. This could be done by incorporating creative and feedback-driven elements. By implementing these recommendations,

stakeholders can create more inclusive, engaging, and effective digital learning environments.

REFERENCES

- Alqasham, F. H. (2022). Investigating English as a foreign language learners' perceptions, emotions, and performance during online collaborative writing. *Frontiers in Psychology*, 13, Article 954011. <https://doi.org/10.3389/fpsyg.2022.954011>
- Alsawaier, R. S. (2018). The effect of gamification on motivation and engagement. *International Journal of Information and Learning Technology*, 35(1), 56–79. <https://doi.org/10.1108/IJILT-02-2017-0009>
- An, Y. (2021). A qualitative investigation of team-based gamified learning in an online environment. *Educational Process: International Journal*, 10(4), 73–91. <https://doi.org/10.22521/edupij.2021.104.5>
- Aristovnik, A., Keržič, D., Ravšelj, D., Tomaževič, N., & Umek, L. (2020). Impacts of the COVID-19 pandemic on the life of higher education students: A global perspective. *Sustainability*, 12(20), Article 8438. <https://doi.org/10.3390/su12208438>
- Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—A literature review. *SAGE Open*, 1–11. <https://doi.org/10.1177/2158244015621777>
- Çeker, E., & Özdamlı, F. (2017). What “gamification” is and what it’s not. *European Journal of Contemporary Education*, 221–228.
- Chan, S., & Lo, N. (2024). Enhancing EFL/ESL instruction through gamification: A comprehensive review of empirical evidence. *Frontiers in Education*, 9, Article 1395155. <https://doi.org/10.3389/feduc.2024.1395155>
- Chou, Y.-K. (2015). *Actionable gamification: Beyond points, badges, and leaderboards*. Octalysis Media.
- Chung, C. H., & Pan, H. L. W. (2023). Assessing the effects of flow, social interaction, and engagement components on online learners' engagement. *Smart Learning Environments*, 11(1), 47.

- Dichev, C., & Dicheva, D. (2017). Gamifying education: What is known, what is believed and what remains uncertain: A critical review. *International Journal of Educational Technology in Higher Education*, 14, Article 9. <https://doi.org/10.1186/s41239-017-0042-5>
- Gruber, M. J., Ritchey, M., Wang, S. F., Doss, M. K., & Ranganath, C. (2016). Post-learning hippocampal dynamics promote preferential retention of rewarding events. *Neuron*, 89(5), 1110–1120. <https://doi.org/10.1016/j.neuron.2016.01.017>
- Harmer, J. (2015). *The practice of English language teaching* (5th ed.). Pearson Education.
- Hidayat, D. N., Septiawan, Y., & Sufyan, A. (2020). Critical discourse analysis and its potentials for language teaching: A study on beauty advertisement products in Indonesia. *Critical Discourse Analysis and Its Potential for English Language Teaching*. ELE Publishing.
- Homer, R., Hew, K. F., & Tan, C. Y. (2018). Comparing digital badges-and-points with classroom token systems: Effects on elementary school ESL students' classroom behavior and English learning. *Educational Technology & Society*, 21(1), 137–151.
- Howard-Jones, P. A., Jay, T., Mason, A., & Jones, H. (2016). Gamification of learning deactivates the default mode network. *Frontiers in Psychology*, 6, Article 1891. <https://doi.org/10.3389/fpsyg.2015.01891>
- Irhamni, M., & Sahadewo, G. A. (2023). COVID-19 widening the gap in education: Evidence from urban Jakarta. In *Education in the Asia-Pacific region: Issues, concerns and prospects*. Springer.
- Jonathan, F. C., & Recard, M. (2021). The implementation of gamification concept inside online classroom activities to promote students' engagement. *IJIET (International Journal of Indonesian Education and Teaching)*, 5(2). <https://doi.org/10.24071/ijiet>
- Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. Pfeiffer.
- Karwowski, M., & Zielińska, A. (2024). Be curious: Strategic curiosity drives creativity. *Behavioral and Brain Sciences*, 47, Article e104. <https://doi.org/10.1017/S0140525X23003412>
- Khaldi, A., Bouzidi, R., & Nader, F. (2023). Gamification of e-learning in higher education: A systematic literature review. *Smart Learning Environments*, 10, Article 10. <https://doi.org/10.1186/s40561-023-00227-z>

- Khoshnoodifar, M., Ashouri, A., & Taheri, M. (2023). Effectiveness of gamification in enhancing learning and attitudes: A study of statistics education for health school students. *Journal of Advances in Medical Education & Professionalism*, 11(4), 230–239. <https://doi.org/10.30476/JAMP.2023.98953.1817>
- Landers, R. N., & Landers, A. K. (2015). An empirical test of the theory of gamified learning: The effect of leaderboards on time-on-task and academic performance. *Simulation & Gaming*, 45(6), 769–785. <https://doi.org/10.1177/1046878114563662>
- Lemay, D. J., Bazelais, P., & Doleck, T. (2021). Transition to online learning during the COVID-19 pandemic. *Computers in Human Behavior Reports*, 4, Article 100130. <https://doi.org/10.1016/j.chbr.2021.100130>
- Li, H. (2025). Impact of collaborative learning on student engagement in college English programs: Mediating effect of peer support and moderating role of group size. *Frontiers in Psychology*, 16, Article 1525192.
- Liu, Y., Ma, S., & Chen, Y. (2024). The impacts of learning motivation, emotional engagement and psychological capital on academic performance in a blended learning university course. *Frontiers in Psychology*, 15, Article 1357936. <https://doi.org/10.3389/fpsyg.2024.1357936>
- Luo, Z. (2023). The effectiveness of gamified tools for foreign language learning (FLL): A systematic review. *Behavioral Sciences*, 13(4), Article 331. <https://doi.org/10.3390/bs13040331>
- Mekler, E. D., Brühlmann, F., Opwis, K., & Tuch, A. N. (2013). Disassembling gamification: The effects of points and meaning on user motivation and performance. In *CHI '13 extended abstracts on human factors in computing systems* (pp. 1137–1142). Association for Computing Machinery. <https://doi.org/10.1145/2468356.2468559>
- Meng, C., Zhao, M., Pan, Z., Pan, Q., & Bonk, C. J. (2024). Investigating the impact of gamification components on online learners' engagement. *Smart Learning Environments*, 11, Article 47. <https://doi.org/10.1186/s40561-024-00336-3>
- Nicholson, S. (2015). A recipe for meaningful gamification. In T. Reiners & L. Wood (Eds.), *Gamification in education and business* (pp. 1–20). Springer. https://doi.org/10.1007/978-3-319-10208-5_1
- Nurhalimah, N., Fahriany, F., & Dadan, D. (2019). Determining the quality of English teacher-made test: How excellent is excellent? *Indonesian EFL Journal: Journal of ELT, Linguistics, and Literature*, 5(1), 24–38.

- Nurmi, J., Knittle, K., Ginchev, T., Khattak, F., Helf, C., Zwickl, P., Castellano-Tejedor, C., Lusilla-Palacios, P., Costa-Requena, J., Ravaja, N., & Haukkala, A. (2020). Engaging users in the behavior change process with digitalized motivational interviewing and gamification: Development and feasibility testing of the Precious app. *JMIR mHealth and uHealth*, 8(1), Article e12884. <https://doi.org/10.2196/12884>
- Oliveira, G., Grenha Teixeira, J., Torres, A., & Morais, C. (2021). An exploratory study on the emergency remote education experience of higher education students and teachers during the COVID-19 pandemic. *British Journal of Educational Technology*, 52(4), 1357–1376. <https://doi.org/10.1111/bjet.13112>
- Oliveira, S., & Cruz, M. (2018). The gamification Octalysis framework within the primary English teaching process: The quest for a transformative classroom. *Revista Lusófona de Educação*, 41, 63–82. <https://doi.org/10.24140/issn.1645-7250.rle41.04>
- Perez-Aranda, J., Medina-Claros, S., & Urrestarazu-Capellán, R. (2024). Effects of a collaborative and gamified online learning methodology on class and test emotions. *Education and Information Technologies*, 29, 1823–1855. <https://doi.org/10.1007/s10639-023-11879-2>
- Rahmani, E. F. (2020). The benefits of gamification in the English learning context. *IJEE (Indonesian Journal of English Education)*, 7(1), 32–47. <https://doi.org/10.15408/ijee.v7i1.17054>
- Ren, X., & Zhou, F. (2023). College EFL teachers' demotivation to conduct research: A dynamic and ecological view. *Frontiers in Psychology*, 13, Article 1071502. <https://doi.org/10.3389/fpsyg.2022.1071502>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review*, 32, 77–112. <https://doi.org/10.1007/s10648-019-09498-w>
- Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, 69, 371–380. <https://doi.org/10.1016/j.chb.2016.12.033>
- Shen, Z., Lai, M., & Wang, F. (2024). Investigating the influence of gamification on motivation and learning outcomes in online language learning. *Frontiers in Psychology*, 15, Article 1295709. <https://doi.org/10.3389/fpsyg.2024.1295709>

- Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2023). Gamification in mobile-assisted language learning: A systematic review of Duolingo literature from public release of 2012 to early 2020. *Computer Assisted Language Learning*, 36(3), 517–554.
- Smiderle, R., Rigo, S. J., Marques, L. B., Peçanha de Miranda Coelho, J. A., & Jaques, P. A. (2020). The impact of gamification on students' learning, engagement and behavior based on their personality traits. *Smart Learning Environments*, 7, Article 3. <https://doi.org/10.1186/s40561-019-0098-x>
- Sulispera, T., & Recard, M. (2020). Octalysis gamification framework for enhancing students' engagement in language learning. *Dialektika: Jurnal Pendidikan Bahasa Inggris*, 8(2), 103–128.
- Sylvester, C. E. (2024). Gamification in education: Enhancing student engagement and learning outcomes. *Kiu Journal of Education*, 3, 84–87.
- Trust, T., & Whalen, J. (2020). Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 189–199.
- Ushioda, E. (2016). Language learning motivation through a small lens: A research agenda. *Language Teaching*, 49(4), 564–577. <https://doi.org/10.1017/S0261444816000173>
- Wara, E., Aloka, P. J. O., & Odongo, B. C. (2018). Relationship between emotional engagement and academic achievement among Kenyan secondary school students. *Academic Journal of Interdisciplinary Studies*, 7(1), 107–118. <https://doi.org/10.2478/ajis-2018-0011>
- Xia, Y., Hu, Y., Wu, C., Yang, L., & Lei, M. (2022). Challenges of online learning amid the COVID-19: College students' perspective. *Frontiers in Psychology*, 13, Article 1037311. <https://doi.org/10.3389/fpsyg.2022.1037311>
- Zainuddin, Z., Chu, S. K. W., Shujahat, M., & Perera, C. J. (2020). The impact of gamification on learning and instruction: A systematic review of empirical evidence. *Educational Research Review*, 30, Article 100326. <https://doi.org/10.1016/j.edurev.2020.100326>
- Zhang, S., & Hasim, Z. (2023). Gamification in EFL/ESL instruction: A systematic review of empirical research. *Frontiers in Psychology*, 13, Article 1030790. <https://doi.org/10.3389/fpsyg.2022.1030790>