

GAMIFICATION ON EFL STUDENTS' MOTIVATION AND ANXIETY IN THIRD-LANGUAGE LEARNING: A UNIVERSITY IN SOUTHERN VIETNAM

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Abstract – Gamification has been widely adopted in foreign language education to enhance student engagement and reduce anxiety in language learning. Focusing on English-major students learning French as a third language at Tra Vinh University, Vietnam. This study examines changes in students' motivation and anxiety following the use of gamified classroom activities. A pre-post quantitative survey was conducted with 55 undergraduate students using validated measures of motivational dimensions and foreign language classroom anxiety over a 15-week semester in the 2025–2026 academic year. The findings indicate increases in students' interest and effort, alongside a reduction in classroom anxiety, while perceived competence and perceived value showed no significant change. The results suggest that gamification helps students feel more comfortable and engaged in learning, but does not immediately change their core motivational beliefs. By situating gamification within a multilingual, third-language learning context, this study extends existing research by highlighting the value of gamification as an engagement-oriented pedagogical approach for additional foreign language learning in higher education.

Keywords: English-major student, foreign language classroom anxiety, French, gamification, third-language learning.

I. INTRODUCTION

In contemporary higher education, learning foreign languages has become an increasingly

common experience. Research on multilingualism emphasizes that learning additional languages involves not only linguistic development but also complex motivational, cognitive, and emotional processes shaped by social and educational environments [1]. A critical distinction exists between learning English as a second or additional language (L2) and acquiring a third language (L3). While L2 learning typically occurs within a well-established pedagogical and social infrastructure, L3 learners must navigate linguistic transfer from different prior language systems, additional cognitive load, and more complex motivational dynamics [2].

It is believed that in learning a foreign language, motivation is widely viewed as a flexible, setting-specific factor rather than a fixed student characteristic. A longitudinal study by Busse et al. [3] indicated that students' motivation can change over time depending on classroom experiences, perceived progress, and teaching approaches. Self-Determination Theory (SDT) offers a clear framework for understanding these changes by focusing on interest and enjoyment, effort, perceived competence, and perceived value as key elements of sustained engagement [4]. When these needs are supported, students are more likely to remain motivated and continue learning despite challenges.

Alongside motivation, emotional factors, particularly anxiety, play a critical role in shaping foreign language learning experiences. According to Horwitz et al. [5], foreign language classroom anxiety is considered a distinct phenomenon shaped by communication concerns, evaluative pressure, and testing environments. The anxiety can negatively affect students' willingness to participate, confidence, and overall

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performance [6]. To address motivational and emotional challenges, gamification has attracted increasing attention as a teaching approach that uses game elements to enhance student engagement [7]. Gamification is often associated with greater enjoyment and effort in learning; however, its effects are not always positive. For example, competitive features such as points, scores, or rankings may increase motivation while also creating additional pressure. In addition, gamified learning environments can change students' emotional experiences over time, depending on task design and levels of competition [8].

Within the Vietnamese higher education climate, previous research has examined several factors shaping students' language learning experiences, including anxiety, motivation, learning challenges, engagement, and gamified learning [9–13]. Although research in language learning shows that anxiety affects learning outcomes, and motivation is linked to perceived usefulness [9, 10], gamification studies in Vietnam have mainly focused on English, leaving a limited understanding of how gamified instruction influences the motivation and anxiety of English-major students learning French, who often experience learning overload and emotional pressure [11–13].

To address this gap, the present study employs a pre-post instructional design to examine changes in motivation and anxiety among English-major students before and after the implementation of gamified activities in a French-language course at a university in the Mekong region. The research questions are:

RQ1: How does gamification influence students' motivation in learning French as a third language?

RQ2: How does gamification affect students' anxiety and pressure in learning French?

II. LITERATURE REVIEW

A. Self-Determination Theory in foreign language learning

Self-Determination Theory is widely recognised as a strong theoretical framework for explaining motivation in educational settings, in-

cluding foreign language learning. Ryan et al. [4] proposed that motivation exists along a continuum, ranging from controlled to autonomous forms, and is maintained when students' basic psychological needs for autonomy, competence, and relatedness are fulfilled. Moreover, SDT has been frequently used to account for differences in students' engagement, persistence, and emotional responses during classroom learning [14].

In SDT-based language studies, motivation is commonly examined through dimensions such as interest, effort, perceived competence, and perceived value. These constructs reflect students' enjoyment of learning activities, their willingness to invest effort, their confidence in their abilities, and the importance they assign to the language being learned [14]. More importantly, these motivational components are dynamic rather than fixed and may change over time in response to instructional practices and classroom experiences [15]. This perspective is particularly relevant in various learning settings, where students allocate their motivational resources across more than one language [1, 2].

B. Foreign language classroom anxiety as an affective construct

In addition to motivation, affective factors, especially anxiety, play a crucial role in shaping foreign language learning experiences. Horwitz et al. [5] conceptualised foreign language classroom anxiety (FLCA) as a situation-specific form of anxiety associated with communication apprehension, fear of negative evaluation, and test-related concerns. This type of anxiety is closely tied to language learning situations and differs from general forms of anxiety.

A subsequent study has consistently shown that FLCA negatively affects students' willingness to communicate, classroom participation, and perceived competence [16]. Later research further identified sources of foreign language anxiety, including fear of making mistakes, teacher correction, peer comparison, and evaluative pressure [6, 17]. In language-diverse classrooms, anxiety can be heightened by students' cross-language

performance comparisons and by the perceived unequal status of different languages, particularly when English holds a dominant position as the main academic language [2, 9].

C. Gamification in education and foreign language learning

Gamification has gained increasing attention as a pedagogical approach that seeks to enhance student engagement by incorporating game design elements into non-game educational contexts. Deterding et al. [7] defined gamification as the use of game design elements in these conditions to create gameful experiences. In classroom settings, gamification typically includes features such as points, structured tasks, feedback systems, competition, and progression mechanisms [18].

Within foreign language education, gamification has been linked to increased enjoyment, sustained attention, and enhanced participation among students [19]. However, its effects may not always be beneficial. While gamified activities may increase interest and effort, they can also generate performance-related pressure, especially when competitive elements play a central role in instructional design [20]. This dual impact suggests that gamification does not simply reduce students' emotional challenges but instead reshapes their emotional experiences during learning.

D. Motivation and anxiety in gamified language learning

It is believed that there is a complex interaction between gamification, motivation, and anxiety in language learning environments. Students' anxiety about learning a foreign language and cognitive load in gamified classrooms varied over time, depending on task difficulty and the intensity of competition [8]. On the positive side, game-based applications can significantly enhance students' engagement and academic motivation, supporting sustained participation [21] while simultaneously reducing students' foreign language anxiety [22].

Furthermore, gamified activities may strengthen perceived competence through successful task completion and immediate feedback, while encouraging effort and persistence through clearly defined goals [4]. However, when gamification relies heavily on rankings or public comparison, students may experience increased anxiety despite high levels of engagement [20, 23]. This highlights the difference between tension that can help learning and anxiety that can negatively affect performance [16].

Existing research has examined students' motivation and emotional responses [2, 10] and documented persistent anxiety and fluctuating motivation in Vietnamese EFL education [9, 11, 13, 19]. While several studies have reported positive effects of gamification on engagement and anxiety, findings across the literature are inconsistent, particularly regarding perceived competence and perceived value [21, 23, 24]. It is suggested that competitive designs may undermine the affective benefits they seek to produce, yet most research has focused on English as the target language in single-language settings [20]. Moreover, qualitative evidence from Vietnam highlights cognitive overload and emotional strain among students learning French alongside English [10, 13]. However, quantitative studies examining both motivation and anxiety together are still limited. In response to this underexplored area, the present study examines how gamified instruction shapes students' motivational and anxiety-related experiences when learning French as an additional foreign language in a Vietnamese university.

III. METHODOLOGY

A. Participants

The participants in this study were 55 undergraduate students majoring in English at Tra Vinh University in Vietnam's Mekong Delta region. The English Studies programme at the university is a 3.5-year undergraduate course consisting of seven semesters [25]. At the time of data collection, these students were enrolled in a non-major foreign language course offered as part of their

English major training, with available language options including Chinese, French, and Korean. The present study focuses exclusively on students who selected French as their non-major foreign language. Under the programme structure, students who choose French are required to complete four consecutive French language modules (Level 1 – Level 4). All 55 participants were enrolled in French Level 2 and were taught by the same instructor during a 15-week course in the first semester of the 2025 – 2026 academic year. It is expected that using a single instructor would promote consistency in instructional approach, assessment practices, and the implementation of gamified activities throughout the intervention. This design might also reduce potential instructional variability; therefore, providing a relatively stable teaching condition for examining changes in students' EFL learning motivation and foreign language classroom anxiety.

B. Gamified instructional activities

The course spanned 15 weeks, with sessions held for three hours per week. Rather than using standalone games, gamified activities were seamlessly integrated into the regular French lessons and flexibly aligned with each session's instructional content. During each 100-minute class meeting, approximately 15 – 20 minutes were allocated to gamified tasks. These tasks were selected according to the instructional focus of each lesson, including vocabulary, grammar, speaking, and listening. The teacher acted as a facilitator to ensure that the game elements remained aligned with the intended learning objectives. The gamified intervention comprised a range of activities, including digital quiz games, persona-based role-plays, real-time polling, QR code treasure hunts, and team-based musical challenge. Table 1 outlines the specific gamified activities integrated into the intervention, along with the instructional focuses and expected outcomes.

C. Research design and instrument

This study adopts a quantitative research design using a pre-post instruction questionnaire

with a five-point Likert scale (from 1 = Strongly disagree to 5 = Strongly agree). Quantitative survey methods are widely used in motivation and affect research to examine five constructs, including interest, effort, perceived competence, perceived value, and anxiety, particularly when the aim is to identify patterns of change over time or instructional [26]. Likert-scale questionnaires are especially suitable for capturing students' self-reported perceptions in educational background, where direct observation of internal states is not feasible [27].

The instrument measures five core constructs theoretically grounded in SDT [4, 14] and FLCA theory [5], including interest, effort, perceived competence, perceived value, and anxiety. Items were adapted from established instruments used in prior SDT-based language studies and FLCA research. Reliability was assessed using Cronbach's alpha, and results confirmed adequate to strong internal consistency across all constructs (see Table 2).

In the pre-instruction phase, the majority of constructs showed acceptable to strong internal consistency, with Cronbach's alpha coefficients ranging from .750 to .914. While the Effort scale produced a marginally lower reliability estimate ($\alpha = .699$), this coefficient is close to the commonly accepted benchmark and can be regarded as adequate for exploratory and educational research, especially given the small number of items. In the post-instruction survey, all constructs demonstrated substantial improvements in reliability, with alpha values between .879 and .936, reflecting a high level of internal consistency [28, 29].

Furthermore, sample items for each construct are presented in Table 3 to ensure transparency in the instrument's operationalisation.

D. Data collection and analysis

Data were collected using an online questionnaire. Participation was voluntary, and students were informed that their responses would remain anonymous and confidential. They were explicitly

Table 1: Description of gamified activities

Instructional focus	Gamified activity/ example	Implementation details	Expected outcomes
Vocabulary/ Grammar/ Speaking	Blooket (e.g., Tower Defense mode)	Students chose their own strategies to protect towers while answering language questions.	The element of choice was intended to support learner autonomy and active engagement.
Speaking	Persona-based role-plays (e.g., a grumpy baker or a fashion icon)	Students adopted fictional identities to participate in guided French-speaking role-play activities.	Role-taking may reduce the fear of negative evaluation by separating students' self-identity from their classroom performance.
Vocabulary/ Grammar	Poll Everywhere (e.g., word clouds)	Students reviewed lessons using real-time checks with immediate feedback and visualised responses.	Anonymous participation was intended to reduce anxiety associated with public error correction
Vocabulary/ Grammar	QR code treasure hunts	Students solved language-based clues and riddles to unlock subsequent tasks.	Successful task completion may contribute to students' sense of progress and competence.
Listening/ Vocabulary	Musical battles & team challenges (e.g., songs by Indila or Stromae)	Students worked in groups to complete missing lyrics in French songs.	Group-based participation was intended to distribute performance pressure and foster peer-relatedness.

Table 2: The reliability estimates for all five constructs measured in the pre- and post-instruction questionnaires

Construct	Cronbach's Alpha		N of Items
	Pre-instruction	Post-instruction	
Interest	.914	.900	5
Effort	.699	.879	5
Perceived competence	.825	.915	5
Perceived value	.750	.911	5
Pressure/Anxiety	.881	.936	6

informed that participation or non-participation would not affect their course grades.

Data analysis was conducted using SPSS software. First, descriptive statistics were calculated for each construct in the pre- and post-instruction questionnaires to provide an overview of students' motivational experiences. To examine changes between the pre- and post-instruction conditions, paired-samples t-tests were used for each construct. In addition, effect sizes (Cohen's *d*) were calculated to indicate the magnitude of observed changes beyond statistical significance [28, 29].

IV. RESULTS AND DISCUSSION

A. The influence of gamification on students' motivation in learning French

In terms of students' motivation, the results indicate that mean scores for interest and effort increased from the pre-instruction to the

post-instruction survey, whereas perceived competence showed a slight increase, and perceived value remained largely stable across the two time points. Descriptive statistics for the motivational variables measured before and after instruction are presented in Table 4. Regarding the paired-samples t-tests and corresponding effect sizes. Statistically significant differences were found for interest ($t(54) = -3.23, p = .002, d = -0.44$) and effort ($t(54) = -4.44, p < .001, d = -0.60$), both indicating moderate practical changes between the pre- and post-instruction surveys. In contrast, differences in perceived competence ($p = .354, d = -0.13$) and perceived value ($p = .893, d = -0.02$) were not statistically significant between the two time points. The mean scores for perceived competence showed only a slight increase (from 3.93 to 4.00), while perceived value remained largely stable (from 4.11 to 4.12), with minimal effect sizes in both cases. The findings reveal that gamification had a positive role in enhancing students' interest and effort, while perceived competence and perceived value remained relatively stable. These results provide important insights into how gamification affects different facets of motivation in learning a third language.

Regarding interest and effort, the significant increases observed in this study are consistent with findings reported in previous studies on gamification and language learning. Specifically,

Table 3: Questionnaire constructs, focus of measurement, and theoretical framework

Construct	Focus of measurement (pre- and post-instruction survey)	Theoretical framework
Interest	Students’ anticipated and experienced interest, curiosity, enjoyment, and positive emotional engagement in learning French, including expectations before instruction and enjoyment during game-based learning activities.	SDT: intrinsic motivation
Effort	Students’ intended learning effort, persistence, and behavioral engagement, including willingness to invest time and energy and sustained participation in game-based learning tasks.	SDT: behavioral engagement
Perceived competence	Students’ self-perceived ability, confidence, and sense of competence in learning and using French, capturing both initial self-beliefs and perceived improvement through game-based learning.	SDT: competence need satisfaction
Perceived value	Students’ beliefs about the usefulness, relevance, and learning value of French, including perceived academic, cultural, and perceived effectiveness of game-based learning.	SDT: internalisation of extrinsic motivation
Pressure/Anxiety	Students’ feelings of anxiety, tension, and pressure related to learning French, including anticipated difficulty, marks, and performance-related stress during game-based learning activities.	FLCA: anxiety

Table 4: Descriptive and inferential statistics for motivational variables

Pair	Pre (M ± SD)	Post (M ± SD)	<i>t</i> (54)	<i>p</i>	Cohen’s <i>d</i>
Interest	4.28 ± 0.75	4.60 ± 0.46	−3.23	.002	−0.44
Effort	4.03 ± 0.57	4.41 ± 0.56	−4.44	<.001	−0.60
Perceived competence	3.93 ± 0.61	4.00 ± 0.79	−0.94	.354	−0.13
Perceived value	4.11 ± 0.60	4.12 ± 0.67	−0.14	.893	−0.02

the result aligns with Chen [21], who found that game-based applications enhanced students’ engagement and academic motivation. Similarly, Phuong [19] reported that Vietnamese EFL learners showed increased enjoyment and participation when gamified elements were integrated into classroom activities. The current findings also share similar patterns with Nguyen et al. [11], whose study in a Vietnamese university demonstrated that gamification improved students’ satisfaction primarily through engagement rather than through perceived learning effectiveness. This consistent pattern across studies suggests that gamification is particularly effective at stimulating surface-level motivational responses such as interest and effort, rather than deeper beliefs about competence or value.

In addition, the increase in interest can be explained through the lens of SDT [4], which holds that when students’ needs for autonomy and relatedness are supported, their intrinsic motivation is strengthened. In the present study, activities such as Blooket allowed students to choose their own strategies, while musical battles and persona-based role-plays encouraged group

participation and peer interaction. These design features likely fostered a sense of autonomy and social connection, which in turn enhanced students’ interest and effort. This interpretation is supported by Noels et al. [14], who demonstrated that intrinsic motivational orientations are closely linked to students’ enjoyment and engagement in classrooms.

In contrast, in this current paper, perceived competence and perceived value did not change significantly. This finding aligns with several previous studies that reported mixed or limited effects of gamification on competence-related perceptions [23, 24]. In particular, Xi et al. [23] found that while gamification can satisfy certain psychological needs, its effects on perceived competence depend on whether the activities are directly tied to measurable skill development. Furthermore, the stability of perceived value is also consistent with findings from Busse et al. [3], which showed that students’ value perceptions of foreign languages in higher education are relatively resistant to short-term instructional changes. It is, therefore, believed that students tend to allocate their motivational resources un-

evenly across languages, often prioritising the language they consider most relevant to their academic and professional goals [2]. The interpretation of the present finding may be further supported by Le et al. [10], who reported that Vietnamese students learning French alongside English experienced cognitive overload and emotional strain, which may help explain why short-term interventions do not necessarily shift deeper motivational beliefs. Taken together, this may explain why students became more willing to participate and invest effort in French classes but did not substantially revise their views of the value or importance of learning French.

B. The effects of gamification on students' anxiety and pressure in learning French

Table 5: Descriptive and inferential statistics for perceived anxiety

Pair	Pre (M ± SD)	Post (M ± SD)	<i>t</i> (54)	<i>p</i>	Cohen's <i>d</i>
Pressure/ Anxiety	2.42 ± 0.85	2.91 ± 1.17	-3.33	.002	-0.45

Concerning students' anxiety and pressure, the reverse-coded item scores increased from the pre-instruction survey ($M = 2.42$, $SD = 0.85$) to the post-instruction survey ($M = 2.91$, $SD = 1.17$). Since higher scores indicate lower perceived pressure and anxiety, this result suggests that students experienced reduced anxiety and pressure after the gamified instruction. The paired-samples *t*-test showed that this change was statistically significant, $t(54) = -3.33$, $p = .002$, with a small-to-moderate effect size (Cohen's $d = -0.45$) (detailed in Table 5).

The results indicate that gamification was associated with a reduction in students' anxiety and pressure during French learning. This finding can be interpreted in light of Horwitz et al.'s [5] theoretical framework of foreign language classroom anxiety, which identifies communication apprehension, fear of negative evaluation, and test anxiety as the primary sources of classroom anxiety.

Notably, the results align closely with the findings of Chen et al.'s study [8], which demon-

strated that students in gamified higher education classes experienced lower foreign language anxiety over time, especially when gamification reduced evaluative pressure. In line with this view, Boudadi et al. [22], who found a significant decrease in foreign language anxiety among university EFL students engaged in gamified instruction. The present study shares a similar finding, as activities such as Poll Everywhere enabled anonymous participation, and team-based musical battles required performance pressure across group members rather than placing it on individuals.

In the Vietnamese setting, it is found that foreign language anxiety can reduce students' willingness to participate in English-medium classes [9]. The present study adds to this line of evidence by suggesting that gamification may help reduce anxiety. Nevertheless, it is worth noting that the effects of reducing anxiety vary due to the forms of gamification. This may explain why the findings of the present study differ from those of Mekler et al. [20], who found that competitive elements, such as points and performance comparisons, can increase pressure and reduce intrinsic motivation if they are not carefully designed. However, the activities in this study were more collaborative and low-stakes, which may have helped students feel less anxious.

On the whole, students often experience heightened anxiety from comparing their abilities across languages [2] and coping with cognitive and emotional strain [10], a participation-focused gamification design appears to be more effective at lowering affective barriers than a competition-focused one.

V. CONCLUSION

A. Conclusion

This study explores the effects of gamification on English-major students' motivation and anxiety when learning French as a third language in a Vietnamese higher education background. The findings indicated that gamification had a positive impact on students' interest and effort,

while reducing anxiety and pressure in the language classroom. However, students' perceived competence and perceived value remained largely unchanged over the intervention period.

Consequently, these results suggested that gamification functions primarily as an engagement- and affect-oriented pedagogical approach, rather than a mechanism for immediately reshaping students' deeper motivational beliefs. By focusing on a third-language learning setting, this study contributes to existing gamification research by highlighting its potential role in supporting student engagement and reducing affective barriers, rather than directly enhancing perceived ability or long-term value. These findings emphasized the importance of aligning gamified instructional design with realistic pedagogical goals.

B. Limitations

Despite its contributions, this study has several limitations that should be acknowledged. First, the absence of a comparison group restricts conclusions about the effects of the gamified intervention. Besides, the small sample size ($N = 55$) from a single institution in the Mekong Delta region limits the generalisability of the findings to other universities, disciplines, or regions. Other external factors, such as course materials, classroom climate, or students' concurrent academic experiences, may also have affected motivational changes. Second, the study relied on self-reported questionnaire data, which reflect students' perceptions rather than objective measures of learning or proficiency. As a result, changes in perceived motivation and anxiety may not fully correspond to actual language development. Third, the duration of the intervention was relatively short. Motivational constructs such as perceived competence and perceived value are known to be more stable and may require longer exposure to instructional innovation before noticeable change occurs.

C. Recommendations

For pedagogical practices, gamification can be used to increase engagement and reduce anxiety, particularly in foreign or third-language classrooms where students may lack confidence. Instructional design should prioritize participation, low-stakes practice, and supportive feedback, rather than competitive ranking, to maintain a psychologically safe learning environment. Besides, to support changes in perceived competence and value, gamified activities should be combined with meaningful language use that highlights the relevance of the target language.

For future research, studies should employ controlled or longitudinal designs to better capture causal and long-term motivational changes. The use of mixed methods is recommended to gain deeper insight into students' experiences with gamification. Further research across linguistically diverse learning environments would also help clarify when and for whom gamification is most effective.

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