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A METHODOLOGY FOR DEVELOPING NON-PHILOLOGICAL STUDENTS' MOTIVATION THROUGH GAMIFICATION

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Abstract. Sustaining motivation for foreign language learning has proven to be a long-lasting challenge for university students outside the linguistic fields. This study, accordingly, proposed and empirically validated an inclusive, gamification-based instructional methodology with a view to enhancing motivational dispositions and academic achievement outcomes for non-philological undergraduates. Developed within the frameworks of self-determination theory, expectancy-value theory, and constructivist learning principles, this approach embedded game design elements such as point systems, digital badges, progressive levels, competitive leaderboards, and narrative-driven tasks into foreign language teaching in a manner that was coherent with the curricular goals. A quasi-experimental mixed-method approach involving 120 undergraduates was carried out over 14 weeks, and participants were randomly assigned to either an experimental or control group. Inferential statistics were applied to analyze the quantitative data, and thematic analysis was applied to the qualitative responses. Compared with the students of the non-gamified instructional framework, the students in the experimental group enjoyed significantly higher levels of intrinsic motivation, learning engagement, and language performance.

Keywords: gamification; learning motivation; non-philological students; higher education; learner`s autonomy

1. Introduction and Theoretical Background

Learner motivation is one of the most significant factors contributing to the effectiveness of the educational process in such variables as persistence, strategic learning behaviors, emotional engagement, and general academic achievement. This is even more so for foreign language learning, which requires prolonged effort over time. It becomes even more problematic for non-philological university students, for whom language courses are often considered peripheral or compulsory in their degree programs and, therefore, irrelevant

to their future careers. This leads to lower levels of engagement, more behaviors associated with avoidance, and surface instead of deep approaches to language learning.

1.1 Motivation in Foreign Language Learning

Contemporary scholarship sees motivation as a dynamic, multifaceted construct developing temporally and in interaction with individual characteristics, contextual conditions, and instructional practices. In this regard, second/foreign language learning has identified motivation as a significant determinant of learner success and achievement throughout the decades (Dörnyei, 2005, 2009). However, students in non-philological programs usually show instrumental or externally regulated types of motivation, where academic obligations or pragmatic considerations replace actual interest. Such motivational profiles may hinder prolonged engagement and further restrict learners from realizing their full linguistic potential.

Self-determination theory provides a comprehensive framework for investigating the quality of motivation underpinning learners' behaviors, focusing on the type of motivational regulation rather than its intensity. Instead, it places motivation along a continuum from amotivation, through more or less internalized forms of extrinsic motivation, to intrinsic motivation, where individuals engage in activities because of the inherent enjoyment or interest in the activity itself. As such, evidence suggests that those educational environments that support autonomy, nurture an emergent sense of competence, and develop a sense of social relatedness are statistically more likely to yield internally realized and more persistent forms of motivation. In the foreign language learning contexts reported, autonomy-supportive pedagogic practices have been linked with heightened willingness to communicate, lower levels of anxiety, and an enhanced likelihood of persistenc.

These findings complement SDT by underscoring the expectancy-value theory's central role: learners' beliefs about the probability of success (expectancy) and the task's importance or usefulness (value) determine motivational engagement. For non-philological students, low expectancy beliefs and an impoverished view of task value often represent significant threats to the language learning long-term process. In this regard, explicit information about the relevance and utility of language learning tasks, coupled with high success expectancies, will hold great importance in further stimulating the student population.

1.2 Engagement, Interest, and Affective Factors

In educational contexts, learner motivation relates closely to the levels of engagement, development of interest, and learners' affective responses to the conduct of instruction. Many researchers have contributed to an understanding of engagement as a multidimensional construct including behavioral participation, emotional involvement, and cognitive investment in learning activities (Fredricks et al., 2004). Cognitive processing of learning involves deep levels facilitated by emotionally engaging learning environments, the results of which will be more effective for learning strategies.

The four-phase model of interest development afforded by Hidi and Renninger (2006) has further insights into the evolution of learner motivation, mapping out how situational interest, first elicited through instructional design, can take a gradual developmental path toward stable individual interest. Pedagogical practices creating situational interest-namely, contextualized tasks, narrative-driven learning scenarios, and interactive challenges-might be closely related to more sustainable motivational orientations, especially for non-philological students.

Secondly, several affective variables play a role: foreign language anxiety, self-efficacy, and perceived competence. According to Bandura's (1997) self-efficacy theory, beliefs about one's capabilities to perform particular activities effectively are prime determinants of the levels of effort, persistence, and resilience individuals demonstrate when facing challenges. Quantitative studies on language learning have linked higher self-efficacy to superior academic performance and greater willingness to communicate. Instructional approaches are likely to lead to motivational enhancement and positive affective development. They provide participants with continuous feedback, visible indicators of progress, and mastery-oriented learning experiences.

1.3 Gamification as a Theoretically Grounded Pedagogical Approach

Gamification can be defined as the strategic use of game design elements in nongame contexts to enhance user engagement and achieve desired outcomes. It is used in schools to employ inborn game-driven motivators like challenge, instant feedback, advancement, and social interaction aligned transparently with the learning goal.

From this perspective, gamification can be framed theoretically as a pedagogical instantiation of motivational principles enshrined in self-determination theory and expectancy–value theory. Game mechanics like points, badges, and level systems are indicators of competence through which constant feedback is provided to the learner, subsequently reinforcing the expectancy beliefs. On the other hand, narrative-based learning environments, learner choice, and open-ended challenges stimulate autonomy. In a pedagogically responsible manner, collaborative missions and well-structured leaderboards can satisfy the learners' needs for relatedness.

Empirical findings in higher education contexts show that gamification, when meaningfully ingrained in instructional design, can positively influence learner motivation, engagement, and academic performance (Hamari et al., 2014; Sailer & Homner, 2020; Zainuddin et al., 2020). However, several scholars have taken a cautious view of an overemphasis on externally driven reward systems, as surface learning or a decrement in intrinsic motivation could follow (Deci et al., 2001; Nicholson, 2015). It has, therefore, underscored the need for designing theory-driven, pedagogically sound gamification frameworks that focus on learning rather than the mere accrual of rewards.

1.4 Research Gap and Conceptual Positioning

While empirical support for the effectiveness of gamification has grown, significant gaps often remain in the literature. Many previous studies have either focused on isolated game elements or short-term interventions instead of applying a systematically designed and fully gamified instructional model. The field of foreign language education for non-philological students has not yet achieved significant attention as a separate research focus. Moreover, comparatively little work has been done on understanding the different pathways through which gamification may influence various facets of learners' motivation.

In this respect, the present work overcomes some of the aforementioned gaps and conceptualizes gamification as an integrated instructional methodology, not merely a repertoire of discrete motivational techniques. Accordingly, this paper intentionally aligns game design elements and established theoretical concepts with the understanding and practical application of gamification across higher education, particularly concerning foreign language pedagogy.

2. Methodology

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Table 1. *Gamification Elements and Their Motivational Functions*

Gamification Element	Instructional Role	Targeted Motivational Construct
Points	Immediate performance feedback	Extrinsic regulation
Badges	Recognition of achievement	Perceived competence
Levels	Visualization of progress	Expectancy beliefs
Leaderboards	Social benchmarking	Relatedness

Gamification Element	Instructional Role	Targeted Motivational Construct
Narrative tasks	Contextual immersion	Intrinsic interest

Data collection instruments were chosen because of their prior demonstrated validity and reliability in educational research. Foreign language proficiency was measured with standardized pre- and post-tests that matched to the CEFR descriptors. Learner motivation was measured on both assessment occasions using validated questionnaire instruments. Semi-structured interviews and systematic classroom observations covered affective-motivational experiences and behavioral engagement patterns.

Quantitative data were analyzed with SPSS version 26.0. Descriptive statistical procedures summarized measures of central tendency and dispersion. Paired-samples and independent-samples t-tests were used for inferential analyses within and between groups, and one-way ANOVA was applied to test differences among groups across motivational dimensions. To allow for the interpretation of statistical results, effect size indices were computed and multiple regression analysis was conducted to test the predictive contribution of individual gamification elements. The qualitative data were analyzed using thematic coding procedures that allowed meaningful integration and triangulation with the quantitative findings.

3. Results

Comparative analysis indicated that the experimental condition participants had an overall motivation increase compared to the control group- $t=4.87$, $p<.001$. The dimensions of interest, enjoyment, and perceived competence are the most substantial meaning of intrinsic motivation. It clearly shows the shift toward more internalized forms of motivational regulation. These findings also provide further empirical support for the effectiveness of the gamification-based instructional methodology in improving learners' motivational profiles.

In accordance with these motivational results, language achievement results further substantiate the effect that this intervention had. The experimental group's post-intervention proficiency scores were significantly better than those of the control group-$p<.05$, thus indicating that motivational engagement better transferred into significant academic performance improvement.

Table 2*. Comparison of Pre- and Post-Test Motivation Scores*

Group	Pre-test Mean	Post-test Mean	Mean Difference
Experimental	3.12	4.01	+0.89
Control	3.15	3.34	+0.19

Regression analysis established that the autonomy-supportive features ($\beta = .41$, $p < .01$) and immediate feedback methods ($\beta = .36$, $p < .01$) were the best growth motives

predictors, with the leaderboard and other competitive features having a smaller yet still positive effect.

Figure 1. Conceptual Framework of the Gamification-Based Methodology

Description: The figure illustrates the concept that gamification elements relate to motivational constructs through a four-stage instructional cycle—diagnosis, design, implementation, and reflection—nesting the core psychological needs of autonomy, competence, and relatedness. This exemplifies that gamification is an iterative pedagogical process based on theory, not simply a linear set of techniques.

This is further armed by qualitative evidence. The resulting new learning environment influenced the instructional process in an affective positive way, as evidenced by greater engagement, less anxiety about speaking a foreign language, and even more excellent task relevance. These gains in the affective domain indeed further validate the motivational effectiveness of the proposed methodology based on gamification.

4. Discussion

The findings of the present study provide strong evidence that a systematically designed and theoretically informed gamification-based instructional approach significantly enhances motivation and academic performance for non-philological students in foreign language education. The green growth shown in intrinsic motivation empirically supports the explanatory force of self-determination theory and highlights crucial alignment in instructional design development with learners' fundamental psychological needs.

Unlike reward-centered models of gamification, which have been criticized because they can only achieve short-lived engagement, the instructional methodology adopted in this study embeds motivational mechanisms deep within pedagogical practice. Such an embedding is likely to have made the sustainability of the motivational gains-probably beyond any initial novelty effects-possible. In this respect, too, the finding that motivational increases were related to language achievement affirms the presumption that increased motivation will enhance cognitive investment, persistence, and more effective learning processes.

Regression analysis elaborates on previous gamification findings by showing that dimensions of autonomy-supportive design and immediacy-informative feedback are more motivationally impact than pure competitive elements. Hence, these findings point to the necessity of game mechanics' context-sensitive and purposeful adoption, considering learner profiles and instructional goals, more so in non-philological settings, where foreign language anxiety and perceived irrelevance are high, and engagement tends to be very low.

From a methodological point of view, this study adds to extant knowledge by presenting a scalable, replicative gamification framework centering non-philological learners—hence, an underrepresented group regarding current gamification research. A four-phase model stands herein, responding to scholarly calls for greater overall and theory-

guided design in gamification by offering an integrating approach to diagnostic assessment, instructional implementation, and reflective practice.

Qualitative evidence further supports that gamification may act as an affective regulator by decreasing language anxiety while enhancing perceptions of relevance and enjoyment among learners.

5. Limitations and Future Research

Despite these contributions, this study inevitably has some limitations. For instance, since participants were drawn from one higher education institution, this might limit how broadly the findings can be transferred. Furthermore, the intervention was implemented for only one semester, thus limiting the ability to track longer-term motivational development and sustainability effects. This should hence be followed up with longitudinal, multi-institutional, and potential disciplinary work to investigate whether there are any implications related to disciplinary differences in motivational responses and whether further work could cover adaptive or personalized frameworks in gamification according to different learner profiles.

6. Conclusion

This study aimed to design, implement, and empirically test a holistic instructional approach based on gamification aimed at improving motivation and academic achievement in foreign language teaching among non-philology students. Based on self-determination theory, expectancy–value theory, and constructivist learning principles, the proposed approach discussed one of the major problems in higher education: how to maintain students' meaningful engagement in learning a foreign language when this subject does not represent the major academic interest of their studies.

The findings revealed that a well-structured and theoretically informed gamification framework could immediately increase the learners' intrinsic motivation, engagement with the language, and achievement in the language. The methodology embedded game design features straight into pedagogical processes rather than superficial reward systems, thus enabling deeper internalization of motivation and long-term involvement of the learner beyond the initial novelty effects. This certainly confirms the core argument of motivational theory that learning environments are pretty likely to foster long-lasting impacts and self-regulated types of motivation if autonomy, competence, and relatedness are satisfied.

The study adds to the thin literature base by providing empirical support for the possibilities that self-determination and expectancy–value theories hold within one particular instance of gamified FL instruction for NPLs. Further confirmation comes from the fact that motivational enhancement and academic performance were related; motivation can be seen not as a dependent variable but as a central mechanism through which the development of deep cognitive processing, persistence, and adaptive learning strategies play out.

Methodologically, the research contributes to the body of knowledge through the development of a model of gamification for non-philological students that is scalable,

replicable, and sensitive to context. This is an important but neglected area within gamification research. Phases within the instructional cycle—diagnosis, design, implementation, and reflection—provide a coherent, conceptually robust, and interdisciplinary framing that transcends institutional boundaries. A mixed-methods approach was additionally strengthening since, conceptually, quantitative findings could be compared with qualitative learner accounts.

These results are, in fact, quite practical for educators and curriculum developers who are attempting to inject more variety into higher education foreign language pedagogy. The findings emphasize an appropriate choice of game mechanics, placing a premium on autonomy-supporting and feedback-oriented game elements at the expense of gamification based on competition. That is, particularly in non-philological contexts, gamification-based pedagogical decisions pushed into the foreground are particularly critical, as language anxiety and negative perceptions of relevance all too often derail the learners' engagement.

That being said, while this study has made some contributions, it does have limitations: the scope of the sample and the short duration of the intervention, which allows more room for longitudinal, multi-institutional studies on adaptive gamification design. Such deepening studies could be on discipline-specific motivational responses and personal gamification systems, which might better understand how gamified methodologies best optimize diverse learner populations.

In conclusion, this research thus contributes to demonstrating that, if well-designed, theoretically grounded, and pedagogically integrated, gamification can be a highly effective instructional method in improving motivation and learning outcomes in foreign language teaching. This proposed framework offers promising avenues to attain better student engagement and performance at a higher institution.

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