A review of Applying Game-Based Learning and Learning Motivation

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Abstract

This review explores the potential of Game-Based Learning (GBL) as an innovative approach to enhance motivation in the social sciences and humanities, particularly in subjects like Marxist-Leninist Philosophy. These foundational disciplines often face challenges due to their abstract and theoretical nature, which can reduce students' engagement and performance. GBL offers a promising alternative by integrating interactive gameplay, feedback systems, immersive storytelling, and reward mechanisms that foster active participation and sustained attention. Empirical studies in higher education indicate that GBL significantly enhances emotional engagement, cognitive activation, and perseverance, particularly in theory-heavy courses. When applied to ideological or philosophical education, GBL can contextualize abstract ideas through simulation, dialogue, and narrative interaction, helping students internalize complex concepts. However, successful implementation requires pedagogical alignment with course objectives and sensitivity to the cultural and ideological context of Vietnamese education. The review concludes that GBL holds transformative potential for teaching political theory, provided it maintains academic rigor and ideological integrity. Future research should focus on experimental interventions, long-term motivation assessment, and the development of localized GBL models that integrate Vietnamese cultural values and educational goals, ensuring that innovation strengthens, rather than dilutes, the humanistic and ideological foundations of these disciplines.

Keywords: game-based learning, learning motivation, higher Education, social science

Short running title: Game-Based Learning and Learning Motivation

INTRODUCTION

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In the past decade, Game-Based Learning (GBL) has gained increasing recognition as a transformative pedagogical approach in higher education. It combines instructional design with interactive game elements - such as feedback systems, challenges, and rewards - to create engaging, immersive learning experiences. This approach has been shown to stimulate intrinsic motivation, deepen conceptual understanding, and promote long-term retention of knowledge. Globally, educators have begun adopting GBL not only in STEM and language education but also in the social sciences and humanities, where traditional methods often fail to inspire meaningful engagement. As digital natives dominate university classrooms, integrating game-based strategies into curricula has become both a pedagogical innovation and a necessity for effective 21st-century learning.

Within the Vietnamese higher education system, GBL presents a promising opportunity to reform and modernize teaching practices - particularly in subjects that students find abstract and inaccessible. One such subject is Marxist-Leninist philosophy, a compulsory course in all Vietnamese universities. As a foundational component of the national curriculum, it is essential for cultivating students' political consciousness, ideological understanding, and critical reasoning skills. However, empirical reports and classroom observations indicate that many students approach this subject with low intrinsic motivation, viewing it as theoretical, rigid, and distant from practical life. This lack of engagement often results in passive learning attitudes, limited participation, and underdeveloped analytical capacities.

Recognizing these challenges, it becomes imperative to explore new pedagogical methods that can reinvigorate students' interest and participation while preserving the subject's ideological integrity and academic rigor. Game-Based Learning offers a potential solution by leveraging interactive technologies and narrative-based learning environments to enhance emotional engagement, cognitive activation, and reflective understanding. When appropriately designed, GBL can contextualize philosophical concepts through simulation, storytelling, and collaborative problem-solving, thereby bridging the gap between theoretical abstraction and experiential learning.

The present study aims to examine and conceptualize how GBL can be effectively applied to the teaching of Marxist-Leninist philosophy at the University of Social Sciences and Humanities, Vietnam National University, Hanoi. It seeks to identify strategies that promote internalized motivation - that is, students' self-driven interest and commitment to learning ideological content meaningfully rather than mechanically. To achieve this, the study first clarifies the conceptual foundations of game-based learning and learning motivation, followed by a comprehensive synthesis of both international and local research on these topics.

A systematic review of relevant literature published between 2010 and 2023 was conducted using databases such as Google Scholar and ResearchGate, with search terms including "game-based learning," "learning motivation," and "Marxist-Leninist philosophy teaching." This broad review aims to map existing pedagogical models, evaluate evidence of effectiveness, and highlight contextual factors influencing GBL implementation in higher education. Ultimately, the research seeks to bridge the gap between theory and practice by proposing a culturally appropriate framework for integrating GBL into political theory education. Such a framework would not only enhance student motivation and learning outcomes but also contribute to Vietnam's broader educational innovation agenda, ensuring that the teaching of ideological subjects remains relevant, engaging, and intellectually transformative in the digital age.

FINDINGS

The period of Related Studies (2010–2023)

This review integrates and critically analyzes the current knowledge domain on game-based learning (GBL) and its association with learning motivation by examining the goals, methodological focus, sample populations, and research outcomes of previous research on these aspects. Fifteen articles involving research on GBL and learning motivation that were published in 2010-2023 and accessible online were gathered. The search strategy included words like 'game-based learning,' 'digitally based learning,' 'learning motivation,' 'engagement for learning,' 'education and technology,' and 'higher educational institutions.' The initial search uncovered 27 articles. After examining the articles based on titles and abstracts, 12 articles were eliminated because they either contained repeated research, were not readily available online, or were not strongly associated with the central theme involving GBL and learning motivation. It represents a comprehensive and collective sense about various learning experiences involving GBL and can forecast very efficiently about empirical gaps.

Research Objectives and Thematic Orientation
With regard to research objectives, the reviewed studies can be broadly categorized into two main groups. The first group focuses on evaluating the effects of game-based learning on learning outcomes and learner experiences. Studies in this category aim to measure the impact of GBL on academic achievement, computational thinking, vocabulary acquisition, and overall engagement. Remarked works include meta-analytical studies by Karakoc et al. (2020) and Lu et al. (2022), which quantitatively synthesize evidence from multiple experimental studies to determine the magnitude of GBL's effects on achievement and computational thinking. Similarly, applied studies such as those by Akour et al. (2020) and Pham Thanh N. (2022) examine specific digital tools, including mobile gaming applications and Kahoot!, to assess their effectiveness in enhancing students' motivation and learning performance.

The second group of studies emphasizes the exploration of learning motivation as a psychological construct and investigates the factors influencing its development and sustainability. Conceptual and empirical works by Wardani et al. (2020), Afzal and Ali (2010), and Davidovitch and Dorot (2023) analyze the relationships between motivation, academic performance, age, socioeconomic background, learning environment, and personal characteristics. These studies highlight motivation as a mediating variable that explains why certain instructional approaches, including GBL, lead to improved learning outcomes. Taken together, the literature suggests that GBL is not merely an instructional technique but a motivational mechanism that interacts with learners' interests, self-regulation, and contextual factors. The contrast between internationally oriented experimental research and Vietnamese pedagogical studies reveals opportunities for integrating motivational theory with empirical GBL interventions in local educational contexts.

Types of Research Designs
In terms of the type of research, international studies on GBL predominantly adopt quantitative or mixed-method approaches, reflecting a strong emphasis on empirical measurement and statistical validation. Early quantitative studies, such as Afzal and Ali (2010), rely on large-scale

survey data and regression analyses to establish relationships between motivation and academic performance. More recent works, including Akour et al. (2020) and Herpratiwi and Tohir (2021), employ structured questionnaires with Likert-scale items and apply inferential statistical techniques such as t-tests, correlation analysis, and linear regression to examine the effects of GBL-related variables. Meta-analyses by Karakoc et al. (2020) and Lu et al. (2022) further strengthen the empirical foundation of the field by aggregating effect sizes across multiple studies, thereby providing robust evidence of GBL's overall effectiveness.

By contrast, research conducted in Vietnam has largely relied on qualitative or descriptive approaches, particularly in earlier studies focusing on political theory and Marxist–Leninist philosophy education. Works by Ho Thi Hong Cuc (2017) and Vu Thi Thanh Phuc (2019) primarily employ document analysis, classroom observation, and theoretical synthesis to propose pedagogical innovations and affirm the role of technology in fostering learner autonomy and critical thinking. In more recent years, a gradual shift toward mixed-method designs can be observed in studies by Nguyen Anh Tuan (2020), Trinh Thi Hang and Nguyen Minh Ngoc (2022), and Pham Thanh N. (2022), which combine surveys with interviews or classroom observations. Nevertheless, these studies often remain limited in scope and sample size, indicating that Vietnamese research on GBL is still in a developmental stage compared to the more empirically mature international literature.

Research Participants and Contexts
Regarding research participants, international studies demonstrate considerable diversity in terms of educational levels and learning contexts. While several studies focus on university students, reflecting the relevance of GBL in higher education, others extend their scope to primary and secondary education. For instance, Guan et al. (2022) systematically review GBL applications in primary education, highlighting the widespread use of gamification in science subjects. Studies by Lu et al. (2022) and Herpratiwi and Tohir (2021) include secondary school students and technical learners, illustrating the adaptability of GBL across disciplines and age groups. This diversity allows international research to examine developmental differences, contextual influences, and cross-level comparisons in the effectiveness of GBL.

In Vietnam, however, research participants are predominantly university students, particularly those enrolled in English language programs or political theory courses. Studies by Nguyen Thi Nhu Nguyet (2022), Nguyen Anh Tuan (2020), and Pham Thanh N. (2022) focus on undergraduate learners, reflecting the practical demand for pedagogical reform at the tertiary level. While this focus provides valuable insights into higher education contexts, it also reveals a gap in research involving primary and secondary education in Vietnam. Consequently, the current body of Vietnamese literature offers a relatively narrow perspective on GBL, limiting its generalizability across educational levels.

Research Methods and Analytical Approaches
An examination of research methods reveals clear contrasts between international and Vietnamese studies. International research frequently employs experimental or quasi-experimental designs, supported by pre-test and post-test measures, control or comparison groups, and advanced statistical analyses. For example, Akour et al. (2020) use t-tests and p-values to evaluate the effects of six motivational factors embedded in a mobile GBL application, while Davidovitch and Dorot (2023) apply reliability testing and comparative

analysis to explore motivational differences across learner groups. These methodological choices enhance internal validity and allow researchers to draw causal inferences regarding the effects of GBL.

Vietnamese studies, on the other hand, tend to prioritize methodological flexibility and contextual relevance. Common methods include surveys, interviews, classroom observation, document analysis, and pedagogical modeling. While such approaches enable researchers to capture rich contextual data and practical teaching experiences, they often rely on small samples and lack longitudinal or experimental designs. As a result, the findings are more exploratory than confirmatory, and their capacity for replication and generalization remains limited. Integrating rigorous quantitative techniques with context-sensitive qualitative methods represents a promising direction for future Vietnamese research on GBL.

Research Findings and Emerging Insights
Across both international and Vietnamese studies, a consistent finding is that game-based learning positively influences learners' motivation, engagement, and academic performance. International research provides strong empirical evidence that GBL enhances intrinsic motivation, self-regulated learning, computational thinking, and achievement, particularly when game elements such as competition, points, levels, and rewards are carefully designed. Meta-analytical results reported by Karakoc et al. (2020) and Lu et al. (2022) confirm that these effects are substantial and relatively stable across disciplines and educational levels.

Vietnamese studies, although more limited in empirical scope, also report favorable outcomes. Research on digital games such as Kahoot! demonstrates increased learner interest, participation, and confidence, especially among less outspoken students. Studies on WebQuest and blended learning models suggest that technology-supported GBL can promote critical thinking, learner autonomy, and creativity in political theory education. These findings indicate that GBL holds significant potential for addressing motivational challenges in Vietnamese higher education, particularly in subjects traditionally perceived as abstract or difficult.

Research Gaps and Directions for Future Studies
Despite the growing body of literature, several research gaps remain evident. First, many studies lack a strong theoretical framework linking GBL design elements to motivational mechanisms, resulting in limited explanatory power. Second, the majority of studies are conducted on small samples within short intervention periods, making it difficult to assess long-term effects on learning behavior and motivation. Third, Vietnamese research in particular suffers from a shortage of experimental designs, control groups, and quantitative measures of academic performance.

These gaps highlight the need for future research that integrates motivational theory with rigorous experimental designs, expands participant populations across educational levels, and examines the long-term effects of game-based learning on both learning motivation and academic performance. In addition, future studies should incorporate control groups, longitudinal data, and mixed-method approaches to capture not only measurable learning outcomes but also learners' cognitive and affective experiences during game-based interventions. Particular attention should be paid to contextual and cultural variables, as these factors may mediate the effectiveness of game-based learning across different educational systems.

Addressing these issues would enable a more comprehensive understanding of how and why game-based learning influences student motivation, thereby contributing to the development of a

theoretically grounded and empirically validated framework for implementing game-based learning in higher education, especially in emerging educational contexts such as Vietnam.

CONCLUSION

This review addresses a critical pedagogical problem: the persistent lack of motivation among students studying Marxist-Leninist Philosophy, a central subject in the intellectual and civic development of university students. By synthesizing existing research, this review seeks to assess whether game-based learning (GBL) can serve as an effective strategy to enhance motivation, engagement, and overall learning experience.

The results show that GBL offers significant motivational benefits through mechanisms such as challenge-based interaction, real-time feedback, story contextualization, and learner autonomy. These elements help to reduce the abstraction of philosophical concepts and create a more accessible and stimulating learning environment. Although evidence from related disciplines is strong, direct application to Marxist-Leninist philosophy remains relatively unexplored, revealing a clear gap both theoretically and practically.

The implications of these findings are twofold. First, educators and curriculum designers should consider GBL as a viable method for innovating teaching methods in political theory courses. Second, support from institutions is needed to develop culturally and ideologically appropriate technology-based learning (GBL) models that ensure both academic rigor and student engagement. Future research should focus on experimental designs assessing the impact of GBL on motivation and learning outcomes, long-term studies on sustained engagement, and the adaptation of GBL theoretical frameworks to the epistemological foundations of Marxist-Leninist philosophy. This direction promises to shape a more dynamic and learner-centered approach to political theory education in Vietnam.

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