CONCEPTUAL CLARIFICATION WITHIN THE PLAY PEDAGOGY FRAMEWORK: THE CASE OF THE MØBEE RESEARCH

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Cite: Lampek, Sz. Bettina (2026). Conceptual Clarification Within the Play Pedagogy Framework: The Case of the Møbee Research.. *OxIPO – Interdiszciplináris Tudományos Folyóirat*, VIII. Évfolyam 2026/1. Szám. 47-61. Doi: https://www.doi.org/10.35405/OXIPO.2026.1.47

EP / EE: Ethics Permission / Etikai engedély: KFS/2026/O1-0003

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Abstract

The Møbee Research Project is an ongoing empirical intervention in higher education examining how non-digital, play-based learning supports attention, self-regulation, and intrinsic motivation. Using the Hungarian-developed Møbee and Møbee Twin card games, the research applies a pre–post control-group design with validated psychological measures. The study positions Møbee as an independent learning medium within the international framework of play pedagogy and aims to clarify conceptual overlaps within play-based learning, contributing to educational and cognitive research on sustainable, human-centered learning environments.

Keywords: play-based learning, non-digital game-based learning, experiential learning, Møbee

Disciplines: educational sciences

Absztrakt

FOGALMI KERETEZÉS A JÁTÉKPEDAGÓGIA ELMÉLETI RENDSZERÉBEN: A MØBEE-KUTATÁS BEMUTATÁSA

A Møbee-kutatás egy felsőoktatásban zajló empirikus intervenció, amely azt vizsgálja, miként támogatja a nem digitális, játékalapú tanulás a figyelmet, az önszabályozást és a belső motivációt. A kutatás a magyar fejlesztésű Møbee és Møbee Twin kártyajátékokra épül, elő–utóméréses kontrollcsoportos elrendezésben, validált pszichológiai mérőeszközökkel. A tanulmány a Møbee-t önálló tanulási médiumként helyezi el a játékpedagógia nemzetközi keretében, hozzájárulva a fenntartható, emberközpontú tanulási környezetek kutatásához.

Kulcsszavak: játékos tanulás, nem digitális játékalapú tanulás, élményalapú oktatás, Møbee

Diszciplína: neveléstudomány, játékpedagógia, tanuláselmélet

Introduction

The educational environment of the 21st century is fundamentally shaped by the rapid expansion of information, the pervasive use of digital technologies, and the increasing fragmentation of attention. Traditional, frontal teaching methods often struggle to sustain students' engagement, while the constant stimuli of digital devices pose significant challenges to maintaining focused and prolonged concentration (Plass, Homer, & Kinzer, 2015). In response, educational research has increasingly emphasized learning theories that conceptualize learners as active, reflective, and self-directed participants in the learning process (Lind, 2023; Pacheco-Velázquez et al., 2023; Dewi & Oktapiani, 2024). Within this broader context, the present study examines board games as complex learning environments situated at the intersection of multiple psychological and pedagogical disciplines, rather than as isolated methodological tools. The Møbee research project is positioned within this integrated theoretical framework as a theoretically grounded empirical research direction, illustrating how play-based pedagogical approaches informed by learning theory can be meaningfully interpreted and empirically explored. These considerations highlight the need for theory-informed research capable of clarifying how interconnected game-based approaches may be applied effectively and sustainably in contemporary educational contexts.

Relevance

Clarifying the concepts related to game-based learning is therefore not only a theoretical task but also a methodological necessity. Within educational science, these terms often overlap while still carrying distinct emphases—game-based learning

(Plass, Homer, & Kinzer, 2015), non-digital game-based learning (Mehtälä et al., 2025; Szilágyi et al., 2025), experiential learning (Beard & Wilson, 2006), and STEM pedagogy (Bybee, 2013; Lai & Cheng, 2025) all represent the same foundational principle: learner activity, experience-based knowledge construction, and self-directed development.

Precisely defining these concepts makes it possible to articulate a clear theoretical framework for the study, ensuring that the pedagogical meaning and function of the playful methods used in the intervention are explicitly identified. In this research, the expression "learning through play" (Árvai-Homolya, Lengyelné & Osváth, 2018) is used as an overarching term encompassing game-based learning, non-digital game-based learning, experiential learning, and the problem-solving principles characteristic of STEM-oriented learning. All of these approaches emphasize active knowledge construction, experiential learning, and autonomous learner roles, collectively forming the theoretical foundation upon which the Møbee intervention is built (Plass, Homer, & Kinzer, 2015).

Aim of the Study

The aim of this study is to position the theoretical background of the Møbee research within the international discourse on game-based pedagogy and cognitive learning sciences. It seeks to demonstrate how the investigation aligns with contemporary theories and empirical trends of game-based, experiential, and experience-oriented learning, and how its findings contribute to the further development of the pedagogical interpretation of learning through play. The comparison and integration of these game-pedagogical concepts support a complex, multidimensional understanding of learning. The purpose of this conceptual overview is not merely terminological clarification, but also the exploration of how different learning-theoretical models inform the conceptual and methodological framework of the Møbee study.

Theoretical and Conceptual Framework

Theoretical and Analytical Framework

The analytical framework of this study is based on an interdisciplinary approach that conceptualizes play-based learning at the intersection of cognitive psychology, educational psychology, developmental psychology, and learning theory.

The analysis is grounded in the assumption that the mechanisms underlying board game–based learning cannot be explained by a single pedagogical model, but rather emerge from the combined operation of multiple theoretical traditions. Accordingly, the study examines play-based learning environments as complex learning spaces that simultaneously activate cognitive, affective, and social processes.

Methodology of the Literature Review

The methodological approach of this study is theoretical and conceptual in nature. The literature review is based on a systematic thematic analysis of national and international publications published between 2010 and 2025.

Sources were selected through keyword-based filtering, focusing on play-based learning, board game pedagogy, cognitive focus, motivation, and experiential learning. The aim of the analysis is not empirical comparison, but rather the synthesis and integrated interpretation of relevant theoretical approaches.

Conceptual and Theoretical Systematization, Systematizing Game-Pedagogical Concepts and Approaches

After outlining the methodological framework, it becomes necessary to clarify the conceptual and learning-theoretical foundations of the study. This is essential because the Møbee-based intervention activates complex learning processes—attention, motivation, and cognitive load—that can only be accurately understood through the comparative analysis of game-based, experiential, and STEM-oriented approaches. The next chapter therefore provides a structured overview of the relevant strands within game pedagogy.

To systematize these concepts, I apply an analytical framework that enables the comparison of shared and divergent elements across different game-pedagogical approaches. The comparison is conducted through a three-tier analytical structure that examines game-based, experiential, and STEM-oriented approaches according to unified criteria. The analysis focuses on three core dimensions: (1) their theoretical foundations, (2) their pedagogical functions, and (3) their cognitive–affective mechanisms. This framework makes it possible to interpret the various game-pedagogical approaches not as isolated methodological tools but as comparable and integratable learning-theoretical models. Applying this framework provides a coherent interpretation of the cognitive, affective, and social dimensions of learning. Consequently, experiential, game-based, and problem-solving learning approaches appear not merely as methodological options but as unified pedagogical and theoretical models closely aligned with the conceptual and practical structure of the Møbee study.

After presenting the three-tier analytical framework, it becomes essential to identify which game-pedagogical approaches constitute the conceptual foundation of the investigation and form the basis for interpreting play-based learning within this research. These approaches—game-based learning (GBL), non-digital game-based learning (NGBL), experiential learning, STEM pedagogy, and gamification—often exhibit overlaps, yet they emphasize different pedagogical principles and methodological emphases (Zosh et al., 2018; Hirsh-Pasek et al., 2020; Plass, Homer & Kinzer, 2015; Bybee, 2013; Deterding et al., 2011; Fromann, 2016). Because the Møbee study

relies on a non-digital card game based on rapid perceptual recognition, it is particularly relevant to examine those approaches that focus on learner activity, knowledge construction through experience, and cognitive load. These concepts delineate the theoretical space within which the mechanisms of the Møbee intervention can be meaningfully interpreted.

Clarifying and comparing these concepts reveals both common principles and distinct characteristics, offering a more precise understanding of how the Hungarian-developed Møbee game family relates to these learning-theoretical orientations and how it fits within the broader pedagogical model of learning through play. The presentation of each theoretical approach is supported by concrete examples to provide a more nuanced understanding of the pedagogical significance of learning through play. This approach not only deepens theoretical insight but also ensures that the Møbee-based intervention is grounded in a scientifically sound, valid, and methodologically coherent framework.

Game-Based Learning (GBL)

Game-based learning (GBL) has become one of the most prominent directions in recent learning theory research, particularly regarding the development of cognitive skills. Game-based learning is an educational approach in which learning occurs through the cognitive and affective processes embedded within the rule system of the game. GBL is grounded in constructivist learning theory: learning is an active process of knowledge construction driven by interaction, problem-solving, and experience (Lourenço & Machado, 2019; Dewi & Oktapiani, 2024). The distinctive structure of games allows learners to experiment in a safe yet challenging environment, make decisions, and receive immediate feedback. GBL is not simply "playing games in education"; it represents a learning environment in which the mechanisms and goal structure of the game serve pedagogical functions. One of the major strengths of GBL lies in its reliance on intrinsic motivation and its capacity to support deep, voluntary learning through the experience of flow (Csíkszentmihályi, Abuhamdeh & Nakamura, 2005). A meta-analysis published in the Revista de Psicodidáctica (Anggoro, 2025) comprehensively examined the effects of game-based learning on students' mathematical higher-order thinking skills (HOTS). The analysis incorporated empirical studies published between 2010 and 2024, assessing a total of 40 effect sizes derived from 13 research studies.

The results indicate that game-based learning exerts a positive but moderate effect on higher-order thinking skills, with an overall effect size of $g = 0.134$ ($p < 0.001$). This suggests that game-based learning environments contribute statistically significantly—but not to a large extent—to the development of complex cognitive operations such as problem-sol ving, analysis, reasoning, and abstraction. The authors emphasize that the magnitude

of the effect depends on several factors, and the study therefore analyzed moderator variables: educational level, the method used to measure higher-order thinking, the continent in which the study was conducted, and the duration of the intervention all proved to be significant factors, whereas sample size did not produce meaningful differences.

The conclusions of the meta-analysis suggest that game-based learning alone does not guarantee outstanding improvements in higher-order thinking skills; however, it can be an effective tool when embedded within an appropriate pedagogical framework. The playful environment in itself is not sufficient; learner motivation, teacher scaffolding, and support for reflective learning processes are essential for ensuring that the experiences gained during gameplay translate into genuine knowledge construction and cognitive development.

Thus, the study provides important empirical evidence that game-based learning has relevant—but context-dependent—effects in educational settings. The authors suggest that future research should place greater emphasis on comparing pedagogical environments, assessment methods, and game types (digital vs. analogue). Such analyses would allow for a more precise understanding of the conditions under which learning through play becomes a truly effective tool for cognitive development.

Non-Digital Game-Based Learning (NGBL)

Non-digital forms of game-based learning are increasingly present in education, as not all games are digital in nature. Non-Digital Game-Based Learning (NGBL) refers to pedagogical approaches in which learning takes place through the rule systems and interactions of analogue games—such as card games, board games, and role-playing games. This method follows the same principles as digital game-based learning but relies on physical, socially interactive learning environments instead of digital ones (Szilágyi et al., 2025). The primary aim of NGBL is to engage learners actively in the learning process while the mechanisms of the game—such as rule-following, decision-making, competition, or cooperation—develop cognitive, social, and emotional skills. The advantage of non-digital playful learning lies in its immediate feedback and social context, which fosters communication, teamwork, as well as problem-solving and reflective thinking (Debrenti, 2025).

In an empirical study examining the effectiveness of non-digital game-based learning, Szilágyi, Palencsár, Körei, and Török (2025) analyzed university students' mathematical learning outcomes. The goal of the research was to explore how learning methods based on physical, non-digital game elements affect student motivation, depth of understanding, and long-term retention of knowledge.

In the experiment, computer engineering students were divided into two groups: one received traditional lecture-based and problem-solving instruction, while the other participated in a course using non-digital, game-based learning methods. According to the results, the gamified, interactive learning environment significantly increased students' engagement, intrinsic motivation, and learning enjoyment, while maintaining the depth of content understanding.

This study is particularly important because the playful format relied on physical, board-game-like tools, in which students worked in teams by identifying relationships between symbols and mathematical concepts. The researchers found that this approach enhanced collaborative problem-solving, the development of conceptual thinking, and fostered a positive attitude toward the subject.

The authors emphasize that non-digital game-based learning is particularly suitable for integrating cognitive and affective learning goals in higher education, as it unites elements of experiential learning and constructivist learning theory. The findings thus provide empirical support for the idea that educational formats built on physical card or board games—such as Møbee—can produce developmental effects on cognitive, emotional, and social levels.

The conclusions of the study indicate that game-based learning is not merely an alternative method but an effective complement to traditional instruction, enhancing learner activity, cooperation, and deeper learning processes. The researchers recommend that future higher education courses intentionally integrate non-digital game-based approaches into instructional design, particularly in areas where the practical understanding of abstract concepts poses a challenge.

Comparison of Digital and Non-Digital Games

The 2025 thematic volume of Frontiers in Education (STEM: Innovation on Teaching and Learning, edited by Vanda Santos, Cecília Costa, and Dina Tavares) presents multiple studies demonstrating how game-based learning can be applied across educational levels and disciplines. According to the authors, GBL is particularly effective for developing 21st-century skills—such as creativity, problem-solving, collaboration, and communication—as well as for enhancing learner engagement and self-efficacy.

In one relevant study, Edith Debrenti (2025) compared digital and non-digital games in the context of primary mathematics education. The results showed that digital games were most effective in developing logical thinking and rapid decision-making, whereas non-digital, board game–based learning formats supported the deepening of cooperation, communication, and experiential understanding. The author emphasizes that the two approaches are not alternatives but complementary pedagogical tools: digital games offer structured feedback and dynamic practice, while

analogue game-based learning develops social and reflective dimensions.

The collective insights of the studies in the volume suggest that game-based and experiential learning exert their greatest impact when consciously integrated into the educational process. Games are not merely motivational elements but structured pedagogical methods that support cognitive, affective, and social learning goals.

Experiential Education and Experiential Learning

Experiential learning and experience-based (or experience-oriented) education are closely related but not identical concepts. Experiential learning is primarily understood as a theoretical model developed by David A. Kolb (1984), building on the work of Dewey and Piaget. Its core premise is that learning is an active, cyclical process in which the learner constructs new knowledge from personal experience through alternating phases of reflection, abstraction, and application (Borsodi, 2025). In contrast, experience-based education refers more to pedagogical practices or methodological approaches that apply the theoretical foundations of experiential learning in real, emotionally engaging learning situations. In this sense, "experience" does not merely denote an event, but a motivating and personally meaningful learning encounter in which emotional and cognitive processes are simultaneously activated (Itin, 1999; Beard & Wilson, 2006).

While experiential learning explains the cognitive and psychological mechanisms of learning, experience-based education describes its pedagogical realization.

Experiential learning theory is grounded in Kolb's model, which conceptualizes learning as a cyclical and reflective process. The model identifies four successive phases: concrete experience, reflective observation, abstract conceptualisation, and active experimentation. The dynamic unity of these stages ensures that learners transform lived experiences into knowledge and are capable of applying new understandings in future contexts. Experiential education is particularly effective in learning environments where real-world problems, social interactions, and decision-making situations play a central role—such as clinical training, project-based courses, or game-based learning scenarios (Vajda et al., 2018).

Vajda, Kívés, Endrei, and Boncz (2018) investigated the effectiveness of experiential education in the clinical training model implemented at the Faculty of Health Sciences at the University of Pécs. The study aimed to explore how reflective learning processes embedded in authentic professional environments support the development of students' practical knowledge, communication skills, and professional identity. In this model, students are not merely observers but active participants in clinical care, while instructors serve as facilitators: guiding, but not controlling, the learning process.

The findings indicated that this form of experiential learning significantly increased students' sense of responsibility, independence, and decision-making confidence, as the learning situation centered on solving real, complex problems. According to participant feedback, reflective discussions and opportunities for self-assessment supported deeper professional understanding and contributed to the development of critical thinking. The method enacted all elements of the classical Kolb learning cycle: concrete experience was followed by reflection, then abstraction, and finally active application.

The results also confirmed that experiential learning has long-term motivational effects, as students' personal involvement and emotional engagement enhanced the learning experience, leading to deeper retention of knowledge. Vajda and colleagues highlight that the method shapes not only professional competencies but also attitudes, strengthening empathy, ethical sensitivity, and cooperative dispositions.

While Kolb's experiential learning emphasizes the processing and cognitive transformation of experience, experience-oriented learning focuses on how the experience itself becomes the driving force of learning. In this sense, experience-oriented learning is not merely about learning from experience but about how learners reflect on their experiences and connect them to personal development, motivation, and the formation of attitudes (Beard & Wilson, 2006; Illeris, 2015).

A study by Hansen, Hees, and Jeschke (2013) examined the "Hands-on Robotics" laboratory program at RWTH Aachen University, which was built on the theoretical foundations of the experience-oriented learning model. The program aimed to create a learning environment for engineering students in which practical experimentation, problem-solving, and reflective learning functioned in an integrated manner. In this context, "experience-oriented learning" meant that students were not simply observing robotic processes but constructing knowledge through their own experiments and errors, while the learning process remained experiential and emotionally engaging.

The structure of the program aligned closely with the principles of experience-oriented learning: students encountered concrete technical problems, developed solutions collaboratively, tested and refined them in the laboratory environment, and engaged in reflective discussions and self-assessments throughout the process. This approach fostered not only technical understanding but also metacognitive and social development. The study demonstrated that experience-oriented learning—an extension of experiential learning—is particularly effective for understanding complex, interdisciplinary problems, as the experiential nature of the activities increases motivation, engagement, and self-regulated learning.

One of the most significant findings of the research is that introducing an

experience-oriented model substantially improved students' collaboration skills, experimental attitudes, and learning self-confidence. The authors emphasize that such learning environments not only develop professional knowledge but also enhance motivation and long-term knowledge retention by deepening the learning experience.

Integration of STEM Pedagogy and Playful Learning

STEM pedagogy (Science, Technology, Engineering, Mathematics) is an interdisciplinary educational approach that connects scientific and technological knowledge through the solving of real-world problems (Bybee, 2013). Its foundation lies in exposing learners to authentic problems whose solutions require inquiry-based, creative, and reflective engagement. STEM pedagogy therefore not only conveys knowledge but also develops 21st-century key competencies such as critical thinking, collaboration, communication, and self-directed learning (Santos, Costa & Tavares, 2025).

One of the recent studies published in Frontiers in Education—the STEM × Play program by Lai and Cheng (2025)—demonstrates that STEM pedagogy is most effective when combined with elements of game-based learning. A playful environment increases learner motivation, reduces anxiety, and encourages collaborative thinking and creative problem-solving. In this sense, play is not merely a motivational tool but a pedagogical form in which learning and cognitive development naturally intertwine.

STEM pedagogy is thus applicable not only in science education but also in higher education and cognitive-developmental game-pedagogical contexts, as it simultaneously draws upon constructivist learning theory, experiential education, and game-based learning (Santos, Costa & Tavares, 2025; Lai & Cheng, 2025). Consequently, the Møbee game can be interpreted as a non-digital, cognitively oriented variation of STEM pedagogy's practical application, forming a bridge between theoretical knowledge, playful experience, and personal learning processes.

Gamification

Gamification is an educational or organisational process that is not itself a game but integrates game mechanisms—such as point scoring, levels, badges, feedback, competition, or narrative—into an existing non-game activity in order to increase learners' motivation, engagement, and active participation (Deterding et al., 2011; Fromann, 2016). The aim of gamification is to foster positive emotional involvement and joy in learning by incorporating elements of playful thinking and experiential learning.

This approach fits within the broader pedagogical perspective of learning through play, which holds that learning unfolds through game-like experiences, exploration, self-direction, and joyful engagement (Zosh et al., 2018; Hirsh-Pasek et al., 2020).

While the previously discussed learning theories treat the game itself as the medium of learning, gamification uses the toolkit of gamefulness to enhance motivational aspects of the learning environment. For example, in a Moodle course, students may receive badges or points for completing tasks, creating a reward- and competition-based system that makes education more experiential, motivating, and interactive (Kapp, 2012). Møbee, however, is not a gamified educational environment but an autonomous, game-mechanism-based developmental tool in which the game itself functions as the learning medium rather than an added motivational feature.

Application: The Møbee Study as a Research Case

The Møbee Study as a Foundation for the Conceptual Framework

Based on considerations from learning theory and educational psychology, there is a growing need for empirical interventions that apply the principles of these theories in playful, experience-based forms within higher education. Guided by these conceptual and methodological foundations—and in response to the challenges outlined above—the Møbee study was developed to examine the possibilities and effects of adapting game-based pedagogy in a controlled educational environment. The investigation employs a focus group and a control group design: members of the focus group participate in regular, twice-weekly, 45-minute game-based sessions across two consecutive semesters, using the Hungarian-developed Møbee (Ruff, 2024) and Møbee Twin (Ruff, 2025) logic and speed card games, while the control group does not receive any intervention. Both groups complete the assessment instruments before the start of the intervention and after the second semester: the Piéron Test of Attention and Concentration (Arany et al., 2017), the STAI-T Trait Anxiety Inventory (Spielberger et al., 2017), and the Satisfaction With Life Scale – Hungarian version (SWLS-H) (Martos et al., 2014), which measure changes in cognitive focus, anxiety, and subjective well-being. For the reliability and validity of the Møbee study, a deeper understanding of game-pedagogical concepts is essential, as the research does not merely examine the mechanism of a single game, but a complex learning process in which attention and motivation are developed through playful activity. The Møbee game family is approached as a non-digital card-based learning tool grounded in the theoretical foundations of experiential and game-based learning, investigating over two semesters how cognitive and psychological skills can be developed in an interactive, experience-oriented higher education environment.

This approach makes it neces-sary to precisely define the core concepts related to game-based learning, as these determine the psychological and pedago-gical dimensions through which learning and development are interpreted in the study.

Ongoing Empirical Research: The Møbee Project

This study follows a theoretical–conceptual methodology based on structured literature analysis and comparative synthesis. The methodological framework of the study was a two-semester, quasi-experimental design aimed at exploring the cognitive and affective effects of non-digital game-based learning (NGBL) in higher education. The investigation was conducted using a focus group–control group design to clearly distinguish the impact of the game-based intervention from changes that could arise due to the passage of time or other external factors. Students in the focus group participated in regular sessions that incorporated the Hungarian-developed Møbee and Møbee Twin card games, held twice a week for 45 minutes across two consecutive semesters, while the control group received no intervention. The primary aim was to determine whether the two-semester game-based pedagogical intervention produced measurable changes in students' attentional performance, anxiety levels, and life satisfaction. Three validated psychological instruments were administered in the study:

1. The Piéron Test of Attention and Concentration, assessing shifts in focus and attentional load;
2. The STAI-T Trait Anxiety Scale, measuring changes in students' stable levels of anxiety;
3. The SWLS-H Life Satisfaction Scale, capturing variations in subjective well-being and overall satisfaction.

Measurements were conducted at two time points: prior to the intervention (T1) and at the end of the second semester (T2), enabling comparative analysis of long-term effects. This methodological approach aligns with international standards in game-based learning research, which emphasize the experiential, constructivist, and motivational nature of game-based environments, as well as the need for comprehensive examination of cognitive and affective processes. The focus group participated in twice-weekly 45-minute game sessions designed around fast symbol recognition, cognitive load, and attentional flexibility. The intervention aimed not only to improve cognitive performance but also to investigate the effects of flow experiences, engagement, and experiential learning. The methodological framework was built on the assumption that non-digital game-based learning provides a highly engaging, motivating environment capable of generating measurable psychological and performance-related changes among higher education students.

Conclusion and Future Perspectives

Summary: Theoretical Connections to the Møbee Study

The reviewed studies and theoretical perspectives highlight that playful learning is not a single, uniform method, but a complex approach situated at the intersection of several pedagogical traditions. These game-pedagogical approaches, together with the empirical research built upon them, share a common foundation: they

can all be interpreted within the paradigm of learning through play, as each places learner activity, experiential engagement, discovery-based knowledge construction, and intrinsic motivation at the centre of the learning process. Game-based, experiential, non-digital, and interdisciplinary (STEM) approaches all emphasize that knowledge becomes durable when learners construct it through their own experiences, decisions, and interactions. In this context, play is not merely a motivational tool but a structured form of learning that activates cognitive, affective, and social processes simultaneously.

The overview of conceptual and theoretical frameworks demonstrates that different types of playful learning environments contribute to learning goals in varied yet complementary ways. Situating the Møbee Study within this diversity is particularly valuable, as it allows the pedagogical functions of the game to be interpreted from multiple perspectives: it simultaneously incorporates the cyclical nature of experiential learning, the structured problem-solving of game-based learning, the cognitive challenges characteristic of STEM approaches, and the socially interactive features of non-digital learning environments.

This multifaceted interpretive framework not only clarifies the position of Møbee within game-pedagogical research but also supports the intentional design, methodological development, and increased effectiveness of playful learning implementations in higher education.

Potential Future Research Directions

One potential direction for future research is the further development and adaptation of the Møbee and Møbee Twin games to various educational levels and disciplinary contexts, enabling the exploration of how game pedagogy can be applied across different age groups and fields. Additionally, it would be valuable to compare Møbee-type non-digital developmental games with other strategy- or party-style games of similar cognitive difficulty, particularly in terms of their effects on attentional capacity, motivation, communication skills, and logical reasoning. Such comparative investigations may contribute to a deeper understanding of which game mechanisms are most effective for enhancing cognitive focus, learner engagement, and social interaction, and how these mechanisms can be purposefully integrated into the design of higher education game-pedagogical programs.

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