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Theoretical Foundations for Playful Learning Design in Digital Flexible Higher Education

Fundamentos teóricos para o desenho lúdico da aprendizagem no ensino superior digital flexível

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Abstract

Playful learning offers an innovative pedagogical framework for addressing the challenges of engagement and creativity in digital and flexible higher education. This paper examines how play, imagination, and creativity are foundational elements for effective learning design, drawing on Vygotskian theory to explore the progression from playful activities to creative expression. It proposes practical strategies for incorporating playful learning approaches to foster critical thinking, adaptability, and intrinsic motivation. The article highlights the potential of playful learning to enrich educational experiences within technology-mediated contexts. By proposing a pathway from play to creation, this theoretical analysis informs the design of dynamic, student-centred digital learning environments, encouraging innovative practices in higher education.

Keywords: Playful Learning; Higher Education; Learning Design; Flexible Learning; Digital Learning

Resumo

A aprendizagem lúdica oferece um quadro pedagógico inovador para enfrentar os desafios do envolvimento e da criatividade no ensino superior digital e flexível. Este artigo analisa a forma como o jogo, a imaginação e a criatividade são elementos fundamentais para uma conceção eficaz da aprendizagem, baseando-se na teoria vygotskiana para explorar a progressão das atividades lúdicas para a expressão criativa. Propõe estratégias práticas para incorporar abordagens lúdicas de aprendizagem para promover o pensamento crítico, a adaptabilidade e a motivação intrínseca. O artigo destaca o potencial da aprendizagem lúdica para enriquecer as experiências educativas em contextos mediados pela tecnologia. Ao propor um percurso que vai do jogo à criação, esta análise teórica contribui para a conceção de ambientes de aprendizagem digitais dinâmicos e centrados no aluno, incentivando práticas inovadoras no ensino superior.

Palavras-chave: Aprendizagem Lúdica; Ensino Superior; Desenho da Aprendizagem; Aprendizagem Flexível; Aprendizagem Digital

Introduction

The concepts of play, imagination, and creativity are of paramount importance in the comprehension of learning design, particularly within the context of digital learning environments in higher education. These interrelated constructs provide the basis for the design of pedagogical practices that foster student engagement, critical thinking, and

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adaptive problem-solving. In this paper, we draw on Vygotskian theory to explore the progression from playful learning to creative expression. We examine how imagination evolves from a precursor of play into a mature cognitive function that underpins creativity. The objective is to emphasise the importance of this pathway for digital learning design and educational practices.

The advent of digital and flexible education has transformed the landscape of higher education, necessitating the development of novel approaches to ensure student engagement and foster meaningful learning outcomes. The integration of game elements and creative exploration, which characterises playful learning, has gained traction as a means of enhancing motivation, interaction and critical thinking. This article builds on existing research and theoretical insights to present a comprehensive framework for playful learning design tailored to digital and flexible higher education.

The article begins with a comprehensive analysis of the theoretical foundations, which includes key concepts such as play, imagination, and creativity. The article places considerable emphasis on Vygotskian theory, elucidating the progressive evolution from play to imagination and creativity and situating this as a pivotal avenue for pedagogical design. The discourse incorporates interdisciplinary perspectives on play and playfulness, underscoring their significance as both developmental and pedagogical phenomena.

The structure of the article reflects this developmental trajectory, beginning with foundational definitions and theories about play, progressing to the role of playfulness in fostering imagination, and concluding with its application to creative thinking and learning design. The integration of playful and flexible learning principles in higher education is presented through detailed frameworks, including the "magic circle" and gamified instructional strategies. The frameworks illustrate how these methodologies can transform traditional educational practices, enhancing engagement, motivation, and critical thinking in digital environments.

The practical applications of these theories are elucidated with case studies and contemporary research. For example, the article considers strategies such as role-playing, gamified assessments and immersive digital simulations, and suggests that they have the potential to stimulate creativity and foster collaboration. These are supported by models such as the TANC framework for social virtual reality (SVR) environments, which connect theoretical insights with innovative design practices.

The article concludes by examining the interrelationship between playful and flexible learning, emphasising their reciprocal reinforcement. Flexible learning structures provide adaptability to the diverse needs of learners, while playful approaches enhance these environments with curiosity, experimentation, and joy. Taken together, they create transformative educational experiences that prepare students for dynamic and complex professional challenges.

1. Theoretical foundations of playful learning

1.1. From play to imagination: a developmental pathway

1.1.1. Play

The literature reveals that play is a multifaceted and expansive domain of activity that has been increasingly recognized as fundamental to lifelong learning (Wood & Bennet, 1998; Glenn et al., 2012; Jensen, 2013; Wood, 2007).

Play is a complex phenomenon with no universally consensual definition. It can be conceptualized as an exclusively human pursuit, a highly structured activity, or a nuanced manifestation of human emotional experience (Jensen, 2013). Consequently, the concept of play remains theoretically and practically problematic.

Scholars from diverse disciplines have proposed distinct yet complementary definitions of play (Huizinga, 1965; Vygotsky, 1967; Lieberman, 1977). Notably, the conceptualization of play is intrinsically linked to the disciplinary context (Peloquin & Henricks, 2011; Glenn et al., 2012):

- Psychological perspectives focus on individual behaviour and subjective experience
- Sociological approaches examine social interactions and their contextual embeddings
- Anthropological views explore publicly shared meaning systems
- Pedagogical interpretations concentrate on learning processes
- Individual players' perspectives highlight socially situated personal understandings

Prominent scholars have offered illuminating interpretations:

- Vygotsky (1967) conceptualizes play as the imaginary realization of unrealizable desires.
- Huizinga (1955) posits play as a civilizing factor in human development.
- Callois (1961) emphasizes the "spontaneous" manifestations of play.
- Lieberman (1977) characterizes play as a fundamental infrastructure of creative thought.

This analysis adopts an interdisciplinary and contextually nuanced perspective on play and, rather than attempting to provide an exhaustive definitional taxonomy, seeks to elucidate the underlying mechanisms of the complex phenomenon of play.

Developmental perspectives on play

Vygotsky's (1967) seminal work on human development illuminates the intricate relationship between play and cognitive-emotional growth. In the play, children create an imaginary situation through their capacity to separate vision and meaning. Within this constructed scenario, children develop the ability to act independently of immediate perceptual constraints, learning to guide their behaviour through situational meaning rather than direct visual cues. In this line of thought, key arguments supporting the significance of play include:

- Play functions as a primary source of developmental progression
- Play encompasses both cognitive and affective dimensions
- Play is not merely a symbolic action but fundamentally connected to motivational incentives

The functional dynamics of play

The most critical function of play involves processing experiential knowledge as preparatory groundwork for mastering real-world activities (Lieberman, 1977). Vygotsky (1967) eloquently articulates this process: "The child in wishing carries out his wishes; and in thinking he acts. Internal and external action are inseparable: imagination, interpretation, and will are internal processes in external action" (p.13).

In this conceptualization, play is understood as a mechanism of affect generalization. Preschool children engage in play without fully comprehending the underlying motivational structures. As children progress through developmental stages, play transitions from external manifestations to internalized processes, ultimately becoming intellectualized imagination during adolescence.

Imaginary situations and rules

A critical attribute of play is the creation of an imaginary situation, which is inherently rule-bound. As Vygotsky (1967) noted, "All games with imaginary situations are simultaneously games with rules and vice versa" (p.6). Factor (2009, in Peloquin & Henricks, 2011) further emphasizes the importance of participant agency, highlighting how individuals develop and apply rules, where the continuation of play supersedes the imperative of winning.

Developmental characteristics of play

Several key developmental characteristics of play are identified:

- Play as a developmental catalyst: play contains developmental tendencies in a condensed form, creating zones of proximal development (ZPD) that extend beyond childhood into adulthood.

- Evolutionary progression of play: play evolves from rudimentary recollection towards purposeful, consciously realized activity. As it develops, play becomes increasingly organized, rule-bound, and focused on specific means and ends.

- Cognitive transformations: through play, children develop conscious recognition of their actions and understanding that objects possess intrinsic meanings. Play serves as a critical mechanism for developing abstract thought.

- Rule-Based nature: contrary to popular perception, play involves a structured framework of rules. Following these rules becomes a source of intrinsic pleasure, with rules emerging through adult guidance or collaborative self-determination.

Theoretical perspectives and contemporary understandings

In contemporary scholarship, play is conceptualized as a social practice distributed across multiple contexts and influenced by cultural tools and symbolic systems (Wood, 2009). Despite extensive research, a unified theory of play remains elusive, underscoring the field's complexity and potential for further investigation.

Play is herein understood as a bio-psycho-social phenomenon facilitating symbolic and abstract thinking through the continuous integration of fantasy and reality. It creates developmental opportunities by enabling children to progress through imaginative engagement and is of profound significance in human development.

1.1.2. Playfulness

Lieberman's (1977) seminal work introduces a critical dimension of play: playfulness, conceptualized as "physical, social and cognitive spontaneity, manifest joy, and sense of humour." (p. 23). This element transcends childhood, emerging as a persistent personality trait that develops through adolescence and into adulthood. Playfulness represents a qualitative aspect of play characterized by intrinsic enjoyment, spontaneity, and humour.

Subsequent research (Chang et al., 2013) has substantiated and expanded upon Lieberman's initial conceptualization and has consistently identified key characteristics of playfulness:

- Independence from external requirements: playfulness represents an internally generated state of being, a psychological freedom to explore, experiment, and enjoy without external constraints.

- Social context-dependent manifestation: playfulness is not a fixed, individual trait, but a dynamic, socially negotiated mode of engagement that adapts to and is shaped by surrounding social contexts.

- Enduring personal characteristics: playfulness becomes a core, relatively stable aspect of an individual's psychological condition, consistently informing how they perceive and interact with the world.

Bozionelos and Bozionelos (1999) define playfulness as a "disposition manifested by the qualities or attributes that individuals bring to their environment" (p. 749). This conceptualization suggests that playfulness extends beyond mere engagement in play activities, representing a comprehensive state of mind that infuses the essence of play into diverse actions (Wood, 2007).

In adulthood, playfulness is associated with several distinctive psychological attributes (Bozionelos & Bozionelos, 1999): intrinsic motivational disposition, goal setting and accomplishment orientation, and striving for personal independence. The essence is that playfulness in adulthood represents a dynamic approach to personal engagement, characterized by self-driven motivation, purposeful goal orientation, and a fundamental drive for authentic, independent functioning.

Developmental and evolutionary perspective of playfulness

Empirical research consistently demonstrates play's integral role in learning and development, acknowledging its context-dependent nature (Wood & Bennet, 1998; Wood, 2007).

A scholarly consensus emerges regarding play(fulness) as a lifelong phenomenon manifesting through structured and informal activities and increasingly recognized as fundamental to lifelong learning; creativity; and general well-being.

The fundamental recognition stems from understanding play not as a peripheral activity but as a core mechanism of human development, learning, and psychological well-being. This perspective represents a paradigm shift from viewing play as a childish or trivial activity to recognizing it as a sophisticated, essential process in human adaptation, learning, and growth.

Lieberman's (1977) longitudinal studies propose that playfulness evolves through incorporation into experimentation. The underlying theoretical framework posits spontaneity, joy, and humour as existing on a continuum within individual psychological development. This perspective suggests a direct correlation between the degree of playful disposition and an individual's creative potential. In this perspective, playfulness represents a sophisticated psychological disposition that actively facilitates and enhances creative potential by providing a cognitive and emotional framework that supports innovative thinking, breaks traditional thought patterns, and encourages exploratory approaches to problem-solving.

Contemporary contexts and technological influence on playfulness

Emerging digital technologies and contemporary popular culture have dramatically expanded play's conceptual boundaries. Glenn et al. (2012) highlight these new contexts as offering "extended affordances for interactivity, meaning-making and representation" (p. 310). This technological evolution has precipitated a significant research paradigm shift, encouraging (Wood, 2009): broader theoretical frameworks; expanded

methodological approaches, a nuanced understanding of play behaviour and the exploration of play contexts.

Playfulness emerges as a sophisticated psychological construct, a dynamic, evolving capacity that transcends age-based limitations and contributes significantly to human creativity, learning, and interpersonal engagement.

Despite extensive research, a unified theoretical framework for playfulness remains elusive. The field persists as a complex, multidimensional area of inquiry that cuts across multiple domains of human activity. This complexity underscores the critical importance of continued interdisciplinary inquiry into the phenomenology of play and playfulness.

1.1.3. From imagination to creative thinking

By creating new combinations and relationships, the mind constructs a structure - imagination - that exists independently before being realized. Several factors appear to influence imagination, including the perceived need to adapt to the environment, prior experiences, needs and interests (as expressions of needs), combinatorial abilities (and their practice), technical skills, and exposure to creative models (Vygotsky & Rieber, 1997).

Research indicates that the factors shaping creative imagination manifest differently across developmental stages. For instance, children's experiences, interests, and engagement with their context are significantly more limited compared to adults. Consequently, "in the process of development, the imagination evolves like everything else and reaches full maturity only in adulthood" (Vygotsky & Rieber, 1997, p. 32).

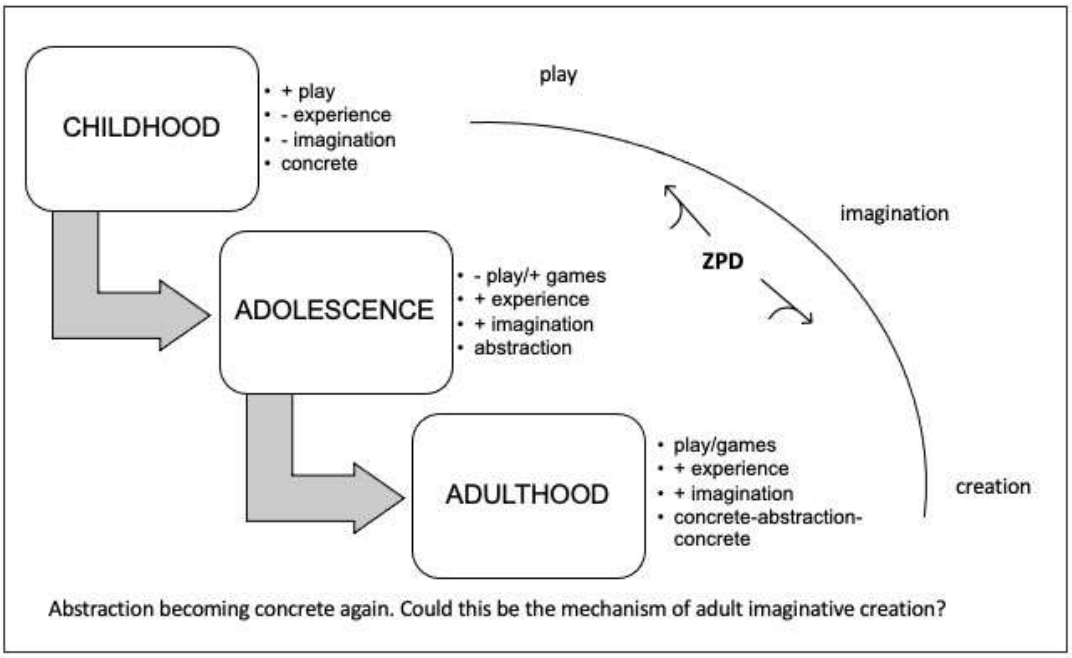
Adolescence represents a stage where imagination is further enhanced through accumulated experiences and cognitive development. Both subjective (emotional) and objective (external) forms of imagination emerge, merging in increasingly sophisticated ways (Moran & John-Steiner, 2003 in Sawyer et al., 2003). Emotional content becomes vital in shaping these images, contributing to their significance. As individuals move into adulthood, imagination continues to be intertwined with conceptual thinking, producing creative thought embedded in tangible, innovative outcomes (Ribot, in Vygotsky, 1967).

Vygotsky (1967) posited that creativity and imagination are intrinsically linked to freedom, mental and conceptual freedom that emerges only through mastery of abstract thinking. This intellectualized imagination finds expression in adulthood through artistic and scientific endeavours that aim to address problems and adapt to new challenges. Creativity, then, is crystallized imagination, a reworking of thought into tangible forms.

In adulthood, imagination and conceptual thinking are fully integrated, enabling artistic and scientific creativity. At this stage, emotional and plastic imagination (Ribot, n.d., in Vygotsky, 1967) become evident, and creativity provides opportunities for the development of zones of proximal development, helping adults adapt to unsatisfying realities.

Is it possible to imagine a path from play to creation? Play, as a precursor to imagination, remains a constant presence, evolving as the focus shifts from the concrete to the abstract. Imagination, in turn, seeks embodiment, leading to creativity as crystallized imagination. In adulthood, the integration of concrete and abstract thinking builds new forms of concrete creation.

Figure 1
Path from play to creation



Source: Author (2024)

1.1.4. Playfulness as a bridge in digital learning design

Playfulness acts as a catalyst for the development of imagination and creative thinking, especially in digital and distance learning contexts. Integrating playful elements into digital learning design can create a space where students feel safe to take intellectual risks, explore new ideas, and engage in self-directed learning. The ability to foster playfulness within structured learning environments is supported by Lieberman's (1977) work, which emphasizes the role of joy, spontaneity, and humour as essential components of play that enhance engagement.

In this line of thought, it is important to highlight that the main difference between playful design and gameful design lies in activities and their associated goals. While playfulness focuses on open-ended, intrinsically motivated experiences, gamefulness emphasizes structured, extrinsically motivated interactions that drive progress toward explicit goals. The authors position both as complementary ends of a continuum of play (Lucero et al., 2014).

The practical application of playful learning design is demonstrated by recent studies (Hijkoop et al., 2024; Mystakidis, 2022) that integrate theoretical and practical approaches.

Hijkoop et al. (2024) highlight strategies such as adopting playful activities and infusing playfulness into existing learning formats to engage students and stimulate creativity. Examples include interactive drama-based role-playing and the use of gamified assessments that promote ownership and engagement. The challenge, however, lies in aligning these activities with theoretical frameworks to maximize their educational impact.

Mystakidis (2021, 2022) further expands on this by presenting the TANC Model for Social Virtual Reality (SVR) environments, which shows how immersive, theme-based learning can create deeper engagement and reduce fatigue in distance learning. The TANC Model's use of themes, actions, narratives, and sensory elements aligns with the Vygotskian (1931, 1966) idea of imaginative play transforming into abstract thought and creativity. These digital environments provide opportunities for collaborative activities and problem-solving tasks that mirror real-world challenges, fostering both imagination and creative thinking.

Digital learning environments offer unique opportunities for fostering playful learning and imaginative thought. Integrating elements of play into digital course design can promote deeper engagement and enhance creativity. Playfulness, as a key component that links play, imagination, and creativity, encourages learners to take intellectual risks and explore new ideas within a safe, rule-mediated context. This dynamic is essential for higher education, where the ability to think beyond traditional boundaries is crucial for both personal and professional growth.

Designing for playfulness in digital learning involves balancing structured tasks with opportunities for free expression. This may include collaborative projects, scenario-based simulations, and activities that allow for experimentation and personal interpretation. Drawing on the work of Lieberman (1977), aspects of play such as joy, spontaneity, and humour can be leveraged to foster a learning atmosphere that stimulates imagination, creativity and socialization. These elements, when integrated thoughtfully, create environments where learners are motivated to engage in creative problem-solving and innovation.

1.2. Principles of playful learning

1.2.1. Frameworks for playful learning

Play is conceptualized as a dynamic and multifaceted activity that fosters creativity, intrinsic motivation, and problem-solving. The theoretical basis for playful learning draws on principles of constructivism, experiential learning, and established play theories (e.g. Vygotsky, Piaget). However, some critique the fragmented nature of these frameworks in higher education (Hijkoop et al., 2024; Heidari-Shahreza, 2024):

- The "magic circle" (Huizinga, 1965) metaphor, highlights three key characteristics of play: i) *Positive framing of failure* (play treats failure as a learning opportunity rather than a setback); ii) *Voluntary adherence to rules* (play creates a democratic environment where learners willingly engage with the structure and norms of learning) and, iii*) Intrinsic motivation* (play fosters an engaging and self-rewarding process, encouraging deep participation and sustained effort). It provides a metaphorical space where students can freely explore and engage without fear of failure; this concept is also applied in e-learning to create virtual environments that encourage experimentation.

- The Framing, Connection, Impression and Emergence model supports the design of open-ended, collaborative learning experiences that are adaptable to digital platforms.

- The Signature Pedagogy (Nørgård et al., 2017), as a framework for integrating playful learning into adult education. This approach acknowledges the discipline-specific norms, practices, and values of various fields, ensuring that playful learning is both relevant and sustainable. This approach promotes a "playful mindset" and cultivates a "play culture" among learners and educators, transforming educational practices at both micro and macro levels.

These frameworks emphasize the role of digital tools in enabling playful exploration. Examples include gamified interfaces, virtual collaborative spaces, and interactive simulations that mimic traditional hands-on activities. A consistent limitation is the lack of a unified framework tailored to the complexities of higher education, particularly in digital or remote contexts. The study suggests a need for clearer guidelines that integrate digital tools into playful learning frameworks effectively.

Hijkoop et al. (2024) emphasize the growing importance of playful learning in higher education to foster creativity, engagement, and satisfaction among students. The authors highlight the lack of a unified framework for playful learning in higher education, noting that existing approaches often fail to fully connect play theory with design practices. Despite increasing interest, playful learning in higher education is often underdeveloped compared to its use in early education.

1.3. Integrating playful learning design in higher education

The field of playful design as applied to adult learning has been explored and expanded, although a lack of comprehensive theoretical frameworks persists.

Whitton (2018) and Whitton and Moseley (2019) argue that there is no singular approach to playful design. Instead, they emphasize the diversity of playful methodologies in teaching, learning, research, academic practice, and design. To address this diversity, they propose a framework tailored to higher education, categorizing playful approaches into three major types: playful tools, playful techniques, and playful tactics. These categories are further elaborated in Table 1 including detailed descriptions and examples.

Table 1
Playful learning tools, techniques, and tactics

Playful Learning	Description	Examples
Tools	Objects, artefacts and technologies that signify a playful environment.	Games Toys Simulations Puzzles Virtual environments
Techniques	Pedagogies and learning approaches that facilitate play.	Role play Making Performance Problems Quests
Tactics	Mechanics and attributes that engender playfulness.	Surprise Humour Chance Competition Storytelling Mystery Badges

Source: Whitton (2018)

Heidari-Shahreza (2024) explores the concept of playful learning as a transformative philosophy and methodology in adult education. The author critiques the current state of adult education, which is dominated by instrumentalism and performativity, and advocates for a more humanistic approach that emphasizes the dual purposes of education: instruction and delight. A shift toward playful learning is proposed as a means of countering these deficiencies, reintroducing creativity, joy, and engagement into adult education while retaining its practical objectives.

Playful learning is an emerging field in higher education that emphasizes the integration of play and playfulness into formal learning environments. This approach seeks to foster creativity, engagement, and a deeper understanding of educational processes by leveraging the inherent enjoyment of play. The literature indicates that playful learning can significantly enhance student-centred pedagogies, which are increasingly necessary in contemporary educational contexts (Jørgensen et al., 2022).

Hijkoop et al. (2024) identify three distinct strategies for integrating playful learning in higher education, each with its approach to engaging students and fostering creativity:

- **Adopting playful activities**

This strategy focuses on embedding specific playful activities directly into the curriculum, such as LEGO Serious Play or interactive drama-based role-playing. These activities aim to motivate students, develop reflective and social skills, and cater to diverse learning styles. Digital learning contexts see applications like virtual collaborative activities, emphasizing ownership and engagement. Examples include using digital tools like virtual design platforms to replicate hands-on playful activities and historical simulations in Social Virtual Reality (SVR) environments, which can motivate students and develop social and reflective skills (Mystakidis, 2022). Challenges include limited integration of theoretical frameworks with practical designs, where activities often lack explicit connections to play theory.

- **Adding playfulness to existing learning formats**

Playfulness is infused into traditional teaching formats to make learning more engaging. For instance, instructors might gamify assessments, use playful metaphors, or encourage imaginative thinking in virtual group projects. Incorporating interactive design elements, including sensory tools and narrative structures, can keep students engaged in e-learning and distance education. This approach is particularly relevant to distance and e-learning contexts, where elements like surprise, repetition, and risk-taking are incorporated to maintain engagement in asynchronous learning environments. For example, in the context of problem-based learning, playful learning can be implemented by incorporating playful materials and activities that encourage exploration and creativity. For instance, using story cubes or other playful artefacts can facilitate brainstorming and idea generation among students, allowing them to engage with the material in a more dynamic way (Jørgensen et al., 2022). This approach aligns with the notion that playfulness can catalyse creativity, enabling students to think outside the box and approach problems from multiple perspectives (Zhou, 2017, p. 11). Also, MOOCs leveraging playful design elements saw higher than average course completion rates (32% compared to the typical 4-7%), highlighting the effectiveness of gamified and narrative-driven strategies (Mystakidis, 2022).

- **Designing with play properties**

In this strategy, learning environments are intentionally designed around key play properties like safety, exploration, and the acceptance of failure. Frameworks such as the "magic circle" (Huizinga, 1965) metaphor provide a structured way to develop trust and openness in both physical and virtual learning environments. In distance learning, these frameworks can be applied through virtual safe spaces, facilitated trust-building activities, and collaborative digital tools. For example, the TANC Model, focusing on Theme, Actions, Narrative, and Components, can guide the design of engaging SVR learning experiences and, also, utilizing digital affordances like avatar customization and interactive soundscapes helps create immersive and motivating learning environments, building a sense of co-presence that combats digital fatigue (Mystakidis, 2022).

2. Playful learning design in digital flexible learning

2.1. Playful learning design

Playful learning introduces curiosity, creativity, and enjoyment into the learning process, fostering intrinsic motivation and critical engagement. Rooted in methodologies such as gamification, project-based learning, and simulations, playful learning creates a "magic circle" where students can explore concepts in a safe, experimental space. As Whitton (2022) describes, this approach challenges the traditional performance-focused culture by promoting deeper engagement through failure, risk-taking, and democratic participation.

Playful learning approaches can address these needs by offering flexible, autonomous, and engaging educational experiences. Although the value and appropriateness of playful methodologies in higher education remain topics of debate (Nerantzi & James, 2015; Brown & Vaughan, 2010), strategies such as role-playing, problem-based scenarios, and collaborative games align with adult learners' preferences for practical, contextualized learning opportunities.

In digital education, playful learning must adapt to virtual environments. Interactive simulations, virtual reality (VR), and augmented reality (AR) offer immersive experiences that foster exploration and creativity. Additionally, digital platforms can facilitate gamified assessments, peer collaboration, and real-time feedback.

Moreover, the integration of digital technologies into playful learning environments can further enhance the learning experience. Digital tools can provide interactive and immersive experiences that promote engagement and collaboration among students (Zhou, 2017). For example, incorporating gamified elements into online learning platforms can create a more playful atmosphere, encouraging students to participate actively and take ownership of their learning (Jørgensen et al., 2022).

Technological advancements, including virtual learning environments (VLEs), AI, and gamified applications, have expanded the possibilities for playful learning. The article highlights "iPlay" (intelligent play) as a concept that leverages AI to personalize and enhance playful learning experiences. These technologies make playful learning scalable and adaptable to diverse educational contexts, ensuring its relevance in a rapidly evolving educational landscape (Heidari-Shahreza (2024).

Numerous studies highlight the benefits of incorporating game elements within a playfulness-oriented approach to enhance motivation in distance learning contexts. For instance, this approach has demonstrated positive effects in programming courses (Pilkington, 2018) and language learning (Astruc et al., 2022). Similarly, gamified instructional designs have been successfully applied to open and distance learning (ODL) courses (Gomes & Pereira, 2021) as well as to fostering engagement within online learning communities and networks (Saraiva et al., 2019).

2.2. Digital flexible learning

Dikilitaş and Noguera-Fructuoso (2023) explore the evolving nature of flexible learning, emphasizing its applicability in contexts like flipped classrooms (FC). The authors define flexible learning as a pedagogical approach that eliminates restrictions of time, place, and pace, offering learners choices tailored to individual needs and circumstances.

Flexible learning is characterized by adaptability to individual learner needs, allowing students to manage their learning pace, schedule, and environment. This approach utilizes technology, blended learning, and multimodal resources to offer personalized and inclusive digital education.

Flexible learning designs leverage technological tools, integrate synchronous and asynchronous modalities, and promote self-regulated learning (SRL). The flipped classroom is highlighted as a flexible framework, offering opportunities for pre-class preparation, in-class collaboration, and individualized pacing. The proposed framework for flexible learning design (Dikilitaş & Noguera-Fructuoso, 2023) identifies dimensions of flexibility across several domains:

- Inclusivity: adapting to diverse needs and backgrounds.
- Learning Styles: catering to visual, auditory, and kinaesthetic learners.
- Task Approaches: allowing multiple paths to achieve learning objectives.
- Interaction Patterns: supporting varied group sizes and collaboration modes.
- Multimodality: providing content in multiple formats (e.g., text, video, audio).

Within this framework, flexible learning is designed to accommodate students' diverse contexts by adapting to their needs, schedules, and learning environments. It emphasizes autonomy, inclusivity, and personalization through modalities such as blended learning, asynchronous access, and multimodal content delivery. By offering students the freedom to control their pace, time, and learning preferences, this approach fosters self-regulated learning and better work-life balance. As Valdivia-Vizarreta and Montalvan-Castilla (2023) note, flexible learning is essential in preparing students for a constantly evolving global environment, equipping them with the skills and agency to manage their educational journeys.

2.3. Synergies between playful and flexible learning design

Flexible and playful learning methodologies complement each other to create an adaptive and engaging educational experience that addresses the diverse needs of students while fostering intrinsic motivation and creativity. Together, they align with transformative pedagogy, emphasizing inclusivity, active participation, and critical engagement.

The integration of playful learning within flexible learning frameworks creates a holistic approach to education. While flexible learning offers the structural adaptability needed to address diverse learner circumstances, playful learning ensures that these environments remain engaging and meaningful. Combining these strategies provides "Approaches that incorporate flexibility and play transform classroom dynamics and equip students with valuable tools for managing stress, promoting adaptive problem-solving, and developing critical thinking skills" (Valdivia-Vizarreta & Montalvan-Castilla, 2023).

Flexible learning structures allow for personalized pathways, while playful strategies enrich these pathways with creativity and enjoyment. For example, a blended flexible and playful classroom can incorporate game-based activities for asynchronous preparation - allowing students to engage with content at their own pace, complemented by synchronous problem-solving sessions that simulate real-world scenarios - emphasizing collaboration and critical thinking. Such an integration not only enhances motivation but also nurtures collaborative skills and creativity.

3. Final Remarks: implications and future research directions

The concepts of play, imagination, and creativity are not just theoretical constructs but are critical for designing effective digital learning experiences. Higher education pedagogical practices should aim to create spaces where these elements are nurtured and integrated, supporting students in developing both cognitive and creative capacities. While there is no unified theory of play, the role of playfulness as a connecting element between play, imagination, and creation is clear. Recognizing the social and cultural mediation of these processes is vital for designing inclusive and effective learning environments. As Samli (2011) suggests, imagination and critical thinking are foundational for identifying and addressing challenges, and creativity serves as the bridge to innovation. Designing learning experiences that encourage these connections can lead to more adaptive, engaged, and innovative learners who are prepared to meet complex demands in their academic and professional lives.

Playful learning has the potential to transform digital and flexible higher education by fostering engagement, motivation, and creativity. By aligning playful approaches with pedagogical objectives, educators can create dynamic and effective learning environments.

The integration of playful design into flexible learning ensures that education remains engaging and inclusive while fostering autonomy and innovation. This synergy enables learners to co-create knowledge, explore new concepts dynamically, and connect with content meaningfully.

Flexible learning methodologies emphasize personalized, adaptive learning experiences that accommodate learner needs through technology and inclusive practices. When integrated with playful learning, this approach becomes a dynamic pedagogical strategy that fosters engagement, creativity, and critical thinking. Playful learning introduces

elements of fun, experimentation, and discovery, enriching the educational environment and motivating learners to take active roles in their education.

The interplay between flexibility and playfulness is pivotal in addressing contemporary educational challenges. Flexible learning allows learners to control their pace and environment, while playful methodologies add layers of enjoyment and experimentation, transforming passive instruction into active, immersive experiences. This integration highlights the evolving role of educators as facilitators and co-creators, supporting students in navigating complex, playful tasks while maintaining academic rigour. Playful learning design, embedded within flexible learning systems, fosters an inclusive and equitable approach, ensuring that all learners can thrive in a rapidly changing educational landscape.

Future research can significantly enhance the effectiveness of playful learning designs in digital higher education, supporting the development of innovative, engaging, and inclusive learning environments. Deeper research work is needed on the following areas:

- Contextual adaptation in learning design: Explore how playful learning principles can be adapted to suit diverse institutional, cultural, and disciplinary contexts in digital higher education. This includes identifying key factors that influence the successful implementation of playful methodologies across various digital learning environments.

- Effectiveness of digital learning design elements: Investigate the impact of specific design elements - such as gamified assessments, immersive simulations, and narrative-driven activities -on student engagement, creativity, and learning outcomes in digital contexts. This research should focus on how these elements align with educational goals and promote active learning.

- Innovations in digital pedagogy: Examine how advanced technologies such as AI, VR, and AR can support playful learning designs to create more personalized and engaging experiences. Research could assess the integration of these technologies in fostering collaborative and imaginative learning spaces that scale effectively in higher education.

- Faculty-centric learning design strategies: Study the professional development needs of educators in implementing playful learning in digital formats. This includes designing and testing training programs to help faculty incorporate playful methodologies effectively into online and hybrid course designs.

- Equity and accessibility in digital learning design: Explore the scalability and inclusivity of playful learning in digital higher education. This involves investigating how playful learning design can be tailored to accommodate students with diverse needs and varying levels of access to technology, ensuring equitable learning opportunities.

- Sustainable and adaptive frameworks: Develop and test unified frameworks for playful learning design incorporating flexibility and adaptability for continuous improvement. These frameworks should account for emerging pedagogical trends and the rapidly evolving landscape of digital higher education.

While playful learning offers significant benefits, challenges such as technological barriers, faculty resistance, and resource constraints must be addressed. Collaborative efforts among educators, institutions, and policymakers are essential to overcoming these obstacles.

The integration of playful learning into digital and flexible higher education represents a paradigm shift towards more engaging and creative pedagogical practices. By drawing on theoretical foundations and practical strategies, this article provides a roadmap for designing effective playful learning environments. As higher education continues to evolve, embracing playfulness can unlock new possibilities for student success and innovation.

References

Astruc, L., Arias-Manzano, X., Santos-Grimaldos, E., Mackenzie, P., & Marino, P. (2022). Exploring playful learning in adult distance education. In *INTED2022 Proceedings* (pp.6365–6365). https://doi.org/10.21125/inted.2022.1619

Bozionelos, N. & Bozionelos, G.. (1999). Playfulness: its relationship with instrumental and expressive traits. *Personality and Individual Differences, 26*, 749-760.

Brown, S., & Vaughan, C. (2010). *Play: How it shapes the brain, opens the imagination, and invigorates the soul*. Avery.

Caillois, R. (1961). *Man, play, and games*. London. T. & H.

Chang, C.-P., Hsu, C.-T., & Chen, I-J. (2013). The relationship between the playfulness climate in the classroom and student creativity. *Quality & Quantity: International Journal of Methodology, 47(3)*, 1493–1510. https://doi.org/10.1007/s11135-011-9603-1

Dikilitas, K., & Fructuoso, I. N. (2023). *Conceptual framework for flexible learning design: The Context of flipped classroom*. University in Stavanger. https://doi.org/10.31265/USPS.267

Glenn, N. M., Knight, C. J., Holt, N. L., & Spence, J. C. (2013). Meanings of play among children. *Childhood, 20(2)*, 185-199. https://doi.org/10.1177/0907568212454751

Gomes, C., & Pereira, A. (2021). Feedback e Gamificação em Educação Online. *EaD Em Foco, 11(1)*. https://doi.org/10.18264/eadf.v11i1.1227

Heidari-Shahreza, M. A. (2024). Light and delight: Playful learning as an ideology and methodology in adult education. *Adult Learning*, 10451595241237554. https://doi.org/10.1177/10451595241237554

Hijkoop, V., Skovbjerg, H. M., & Bekker, T. (2024). Playful learning: Linking play properties to learning designs - a higher education scoping review. *The Journal of Play in Adulthood, 6(1)*. https://doi.org/10.5920/jpa.1329

Huizinga, J. (1965; 2015). *Hommo Ludens*, Edições 70

Jensen, G. H. (2013). Making sense of play in video games: Ludus, paidia, and possibility spaces. *Eludamos: Journal for Computer Game Culture, 7(1)*, 69–80. https://doi.org/10.7557/23.6148

Jørgensen, H. H., Schrøder, V., & Skovbjerg, H. M. (2023). Playful learning, space and materiality: An integrative literature review. Scandinavian Journal of Educational Research, 67(3), 419–432. https://doi.org/10.1080/00313831.2021.2021443

Lieberman, J. N. (1977). *Playfulness: Its relationship to imagination and creativity*. Academic Press.

Lucero, A., Karapanos, E., Arrasvuori, J., & Korhonen, H. (2014). Playful or Gameful?: Creating delightful user experiences. *Interactions*, *21*(3), 34–39. https://doi.org/10.1145/2590973

Mystakidis, S. (2022). Sustainable Engagement in Open and Distance Learning With Play and Games in Virtual Reality: Playful and Gameful Distance Education in VR. In O. Bernardes, V. Amorim, & A. Moreira (Eds.), *Handbook of Research on Gamification Dynamics and User Experience Design* (pp. 409-424). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-6684-4291-3.ch019

Mystakidis, S. (2021, 2022). Combat tanking in education: The TANC model for playful distance learning in social virtual reality. *International Journal of Gaming and Computer-Mediated Simulations, 13(4)*, 28–47. https://doi.org/10.4018/IJGCMS.291539

Nerantzi, C., & James, A. (Eds.). (2015). Exploring play in higher education. Creative Academic Magazine Special Issue.

Nørgård, R. T., Toft-Nielsen, C., & Whitton, N. (2017). Playful learning in higher education: Developing a signature pedagogy. *International Journal of Play, 6(3)*, 272–282. https://doi.org/10.1080/21594937.2017.1382997

Peloquin, L. & Henricks, T.. (2011). What is it About Play that is Playful? Analyzing University Students' Conceptions of Play. *National Social Science Journal, 2011, 37 (1)*, 98-107.

Pilkington, C. (2018). A playful approach to fostering motivation in a distance education computer programming course: Behaviour change and student perceptions. *The International Review of Research in Open and Distributed Learning, 19(3).* https://doi.org/10.19173/irrodl.v19i3.3664

Salimi, M., et al. (Eds.). (2022). Proceedings of the 6th International Conference on Learning Innovation and Quality Education (ICLIQE 2022). Advances in Social Science, Education and Humanities Research, 767. https://doi.org/10.2991/978-2-38476-114-2_70

Saraiva, F. B., Morgado, L., & Rocio, V. (2021). Gamificação de uma plataforma social académica numa universidade de ensino a distância. *RE@D - Revista de Educação a Distância e Elearning*, 120-153. https://doi.org/10.34627/VOL2ISS1PP120-153

Sawyer, R. K., John-Steiner, V., Moran, S., Sternberg, R. J., Feldman, D. H., Nakamura, J., & Csikszentmihalyi, M. (2003). *Creativity and development*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195149005.001.0001

Valdivia-Vizarreta, P., & Castilla, J. E. M. (2024). *Flexibility and playful learning as strategies for a transformative pedagogy in higher education*. University of Stavanger. https://doi.org/10.31265/USPS.295

Vygotsky, L. S. (1933, 1967). Play and its role in the mental development of the child. *Soviet Psychology, 5(3)*, 6–18. https://doi.org/10.2753/RPO1061-040505036

Vygotsky, L. S., & Rieber, R. W. (1997). The collected works of L. S. Vygotsky. 4: The history of the development of higher mental functions. Plenum Press.

Whitton, N. (2018). Playful learning: Tools, techniques, and tactics. *Research in Learning Technology, 26*. https://doi.org/10.25304/rlt.v26.2035

Whitton, N. (2022). *Play and learning in adulthood: Reimagining pedagogy and the politics of education*. Springer International Publishing. https://doi.org/10.1007/978-3-031-13975-8

Whitton, N.; Moseley, A. (2019). *Playful learning: Events and activities to engage adults*. Routledge.

Wood E. (2009). Developing a pedagogy of play. In Anning A., Cullen J. & Fleer M. (Eds), *Early childhood education: Society & culture* (pp. 27–38). Sage.

Wood, E. (2007). New directions in play: consensus or collision? *Education 3-13, 35(4),* 309–320. https://doi.org/10.1080/03004270701602426

Wood, E., & Bennett, N. (1998). Teachers' Theories of Play: Constructivist or Social Constructivist? *Early Child Development and Care*, 140(1), 17–30. https://doi.org/10.1080/0300443981400103

Zhou, C. (2017). How Ha-Ha Interplays with Aha! Supporting a Playful Approach to Creative Learning Environments. In Chemi, T., Davy, S. G., & Lund, B. (Eds.). (2017). *Innovative pedagogy: A recognition of emotions and creativity in education* (pp. 107-124). Brill | Sense.

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