Narrative Experiences between Play and Education: A Study on Narrative Learning Through Eudaimonic Design

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Abstract

This study challenges the conventional separation of play, education, and narration, positing that play and learning are inherently interconnected. While critics of a reductive interpretation of gamification argue that superficial applications of game mechanics (e.g., points, levels, leaderboards) reduce education to manipulation, this research asks whether play and learning can be promoted through eudaimonic design, an approach that fosters the experience of autonomy, competence, and connection. Drawing from narrative thinking as a foundational cognitive ability as well as constructivist frameworks, this paper explores under what circumstances digital storytelling among primary school children facilitates meaningful engagement. Using two case studies, which both involve the development and classroom application of a digital storytelling tool, the research illustrates how guided narrative play can promote creativity, personal identification, and collaboration among primary school children. The findings highlight key design strategies that support motivating, playful learning experiences and suggest potential starting points for didactic approaches that engage students more deeply.

1. Introduction

In recent decades, play has been acknowledged as an essential element in educational processes. While describing play as a fundamental aspect of human culture, Huizinga (1949, p. 46) suggested that there is actually an etymological link between "care" and "play". Even before that, Vygotsky (1934/1978, p. 102) famously stated that "in play a child always behaves beyond his average

Part of
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age, [...] as though he were a head taller than himself". This concept of play as a zone of proximal development describes how social play activities allow children to explore possibilities beyond their current capabilities. And this opens up the possibility of various scaffolding strategies to promote beneficial play, such as multi-age groups, symbolic toys and props, and preparing extended play scenarios through field trips and background knowledge (Bodrova, 2008). Regarding games in education, researchers like Gee (2005) have emphasized the potential of games, i.e. certain features of video games, to captivate students' attention and foster deeper learning. At the same time, there is the notion that narrative thinking plays a fundamental role in social cognition (Bruner, 1991; Herman, 2003), highlighting the importance of storytelling for playful experiences as well.

In recent discourse, gamification has gained significant traction as an approach to make use of this potential of games, offering a streamlined method for integrating game-like mechanics to motivate users by integrating common game elements like points, levels, leaderboards and badges. According to Zichermann and Cunningham (2011), gamification can be defined as "the process of game-thinking and game mechanics to engage users and solve problems". Perrotta et al. (2019) note how gamification has become increasingly important in European education policy and research funding. However, by focusing primarily on external incentives, gamification risks reducing education to a series of mechanical tasks, potentially sidelining more meaningful, symbolic aspects of learning. Thus, gamification may inadvertently reinforce a dichotomy, suggesting that education – unless "made fun" – is inherently unengaging. At the same time, scholars such as De Castell (2011, p. 21) suggest that a ludic epistemology in education means "thoroughly challenging traditional dichotomies between learning and leisure, between education and entertainment, between work and play".

In response to these limitations, this paper explores how a broader concept of game-based design, also known as "eudaimonic design" (Detering, 2014) can be applied in educational settings. Acknowledging that the educational value of storytelling and imagination is not always captured in experiences that merely apply game-like mechanics, the goal is to create learning experiences that are not only engaging but also meaningful and aligned with students' deeper curiosities. This paper explores this issue by analysing data

from two studies that are part of a larger design-based research project on narrative-based tools for learning (Schlauch, 2023). The analysis addresses the research question: What design strategies can enhance guided storytelling activities to create playful learning experiences for primary school children? The first part of the paper examines the limitations of gamification and explores the broader concept of eudaimonic design in educational settings. Data is then presented, showcasing the development of a narrative tool that serves as an example of this approach.

2. Approaches to Game-based Learning

Upon close examination, schools are already deeply embedded with mechanisms that resemble gamified structures, such as grades and rankings. This raises the question: if some of these are already in place, why would further gamified elements be able to make education more engaging and playful? In the debate about gamification in education, several arguments cast doubt on the viability of such a mechanistic understanding of gamification.

According to Deci et al. (1999), extrinsic rewards are able to undermine free-choice intrinsic motivation. In other words, children's natural interest and inclination to explore determinate activities could diminish if they are gamified. If pupils are already interested, there is a risk that extrinsic incentives, rather than increasing motivation, will replace the intrinsic motivation already present, with negative long-term effects. For example, children could lose interest in an activity that had been initially perceived as interesting once they become accustomed to the expectation of external reward (Greene & Lepper, 1974). In practice, extrinsic rewards can be beneficial if they are used individually, in moderation and not offered "for mere participation in a task without regard for completion and quality" (Akin-Little et al., 2004, p. 357). However, according to self-determination theory (Ryan & Deci, 2000), before considering extrinsic rewards it is essential to firstcreate long-term engagement by making activities meaningful and engaging at a deeper level, therefore cultivating the student's inner drive for autonomy, competence and connection to others.

Over the years, there has been much criticism of educational games that can be described as "chocolate-covered broccoli" (Laurel, 2001). Here, game-like features are added to mask an otherwise unengaging experience, yet they do little to enhance the actual learning process. In terms of interactive experiences in general, Koenitz (2023) refers to the practice of treating interactivity as an afterthought as *interactivization*. Interactive design is not an add-on feature, but should be considered from the start of the project where digital artifacts intertwine interactivity and narrative aspects.

Furthermore, Bogost (2013) criticises the very idea of replacing real incentives with fictional ones as a form of "exploitationware". He argues that rather than fostering genuine engagement, many gamified systems prioritize immediate behavioral outcomes and exploit addictive mechanisms. The gamification concept gains its lure through its easy, cheap and replicable formula. However, promoting self-regulated, lifelong learning is unlikely to be achieved through one-size-fits-all solutions. According to Bogost (2013, p. 142), rather than points, badges, levels, challenges and leaderboards, key game mechanics consist of "the operational parts of games that produce an experience of interest, enlightenment, terror, fascination, hope or any number of other sensations".

2.1 Eudaimonic Design in Education

Detering (2014) suggests expanding the concept of gamification beyond simple rule-based systems to a more comprehensive approach that broadens its focus from games to socio-technical systems that afford motivational experiences in general. He defines eudaimonic design as a "a critical, transformative, socio-technical systems design practice for motivational affordances in the service of human flourishing." (Detering, 2014, p. 307).

Dimensions that are often overlooked, such as autonomy, situational and social norms and the ways in which educational experiences are framed by signals and actors, come to the forefront. By focusing on the experience itself, eudaimonic design is closely related to the MDA (Mechanics, Dynamics, Aesthetics) model (Hunicke et al., 2004), which is a framework used in game design to understand how different components of a game interact to create player experiences. Here, the mechanics and rules of a game are only the first

component that determines possible player's actions. Those give rise to interactional dynamics, which in turn result in experiential aesthetics.

Table 1 shows how gamification and eudaimonic design relate to each other. In terms of scope, gamification is primarily concerned with creating game-like and playful experiences. This approach uses game design elements to enhance engagement in non-game contexts. In contrast, eudaimonic design encompasses a broader range of motivating experiences aimed at promoting well-being and personal growth. In other words, in order to make an experience more motivating and engaging, it doesn't have to fit into a current game genre or necessarily be identified as a game.

Table 1 – Main characteristics of gamification and eudaimonic design

	Gamification	Eudaimonic Design
Scope	gameful and playful experiences	a wide range of motivating experiences
Means	application of technical design elements like mechanics, elements, patterns	wider systems: social situations, frames, meanings, norms, and practices
Strategy	structure, goals and rules, feedback	situationally appraised meanings, design lenses
Desired Effects	behaviour, competence, recognition	curiosity, exploration, transgression, creativity, innovation
Paradigm	additive-deterministic paradigm	interaction-based, situated, dynamic

Regarding means, eudaimonic design considers a wider range of factors including social situations, cultural norms, and practices that shape user experiences. This approach recognizes that motivation is not solely derived from game mechanics but is highly contextual. Gamification typically aims to guide user behaviour through structured goals, rules, and feedback mechanisms. As a strategic approach, eudaimonic design advocates for understanding the situational meanings behind actions, focusing on fostering intrinsic motivation through contextually relevant *design lenses* (Schell, 2008). As a more open alternative to prescriptive game patterns, design lenses formalise desired motivational experiences as short descriptions, i.e. lenses, to analyse

target activities and then tweak socio-technical systems until they deliver the targeted motivational experience. In short, patterns are prescriptive and domain-bound, whereas design lenses are context-sensitive.

The desired effects of gamification are often behaviour change, competence development, and recognition through external rewards. While these outcomes can lead to short-term engagement, they may not sustain long-term intrinsic motivation. With eudaimonic design, the desired outcome shifts from behaviour change to creating meaningful experiences that inspire curiosity, exploration and creativity, ultimately contributing to personal growth. Finally, the underlying paradigms differ significantly between the two approaches. Gamification is characterised by an additive-deterministic paradigm that views experiences as a sum of added game elements. In contrast, eudaimonic design operates within an interaction-based, situated paradigm that acknowledges the complexity of user experiences shaped by social interactions and contextual factors. On the other hand, creating meaningful experiences that resonate on a deeper psychological level requires much more contextual knowledge and experimentation than the application of given recipes.

3. Methods

This paper focuses on evaluating and synthesising data from two interconnected studies with the aim to develop a web-based storytelling tool that facilitates storytelling about specific subjects defined by the teacher. Thus, the digital storytelling tool called "Fantastinomio" was developed during a broader design-based research project (McKenney & Reeves, 2018; Schlauch, 2023) that involved a variety of substudies in various locations. Fantastinomio (Schlauch, 2022) is designed to help children construct narratives on determinate subjects by selecting and arranging story elements that are customisable. Upon launching the tool, children are introduced to an interface featuring a magic hat, which enables them to select from different categories of story elements, such as characters, settings, or items, by presenting up to three options at each step. As children select elements, the chosen images appear sequentially, building a visual narrative that culminates in a story

sequence, which can be exported and printed. Fantastinomio supports multiple languages (Italian, German, English, Portuguese) and includes a text-to-speech option, which can be activated or disabled to support reading or collaborative engagement. In the backend, teachers can customise the story element library, adding specific themes or educational content relevant to subjects like science or social studies, by adjusting entries in an online spreadsheet. This customisation provides teachers with the flexibility to tailor the storytelling experience to different educational needs and age groups.

The first study considered here employed an exploratory design-based research approach to create and refine the tool, with methods grounded in cooperative inquiry (Druin, 1999; Guha et al., 2013). This involved direct engagement with 14 children aged 6-13 years in a Montessori setting to design story elements and gather insights through contextual inquiry, involving groups of 3-4 children in specific workshop settings over a 6-week period. Data collection included observational notes, audio recordings, screen recordings, and children's digital and hand-drawn story artifacts, which were analysed to assess usability and developmental outcomes.

The second study, set in a Portuguese primary school, focused on the use of the Fantastinomio tool within a structured curriculum on social-emotional learning. This phase used qualitative case study methods, including semi-structured interviews, field notes, and the analysis of narrative artifacts. These were produced during whole-class lessons in a fourth grade classroom with 19 children, ages 9-10, over the course of a month. The goal was to understand how digital storytelling influenced children's reflection on emotions and social interactions. Children were guided through storytelling tasks that required selecting, organising, and contextualising their own emotions and experiences.

For the purpose of this paper, a secondary analysis was conducted across datasets with an inductive, qualitative approach, examining common patterns in children's engagement and contextual challenges in relation to the research question of possible design recommendations for supporting narrative play experiences. The analysed data consists of observational notes collected during both the design workshops (first study) and the classroom intervention (second study), supported by audio and video recordings. In both cases, a think-aloud approach was adopted to track children's thought pro-

cesses; they were encouraged to verbalize their ideas and reflections in dialogue with peers (Markopoulos et al., 2008, p. 189). The data collection followed the contextual inquiry technique, which aims to "observe and analyze the users' environment for patterns of activity, communication, artifacts, and cultural relationships" (Druin, 1999, p. 593). The collected data was compiled into a contextual inquiry diagram, organizing insights under categories such as time, quotes, activities, activity patterns, roles, and design ideas. However, for clarity and alignment with the analytical focus of this paper, selected observations are presented in summarised form.

4. Findings: Design Lenses for Narrative Play

This section reexamines the design study results from the perspective of eudaimonic design, utilizing the MDA (Mechanics-Dynamics-Aesthetics) framework (Hunicke et al., 2004). The outcomes indicate specific design lenses that facilitate the aesthetic experiences of (a) creativity, (b) identification, and (c) collaboration. These aesthetic experiences, in turn, contribute to meeting fundamental psychological needs – namely, (a) competence, (b) autonomy, and (c) connection – as described by Ryan and Deci (2000). Therefore, the following didactic recommendations can be given in order to create playful learning experiences and enhance guided storytelling activities.

4.1 Provide Space for Creative Fillings

Observations have shown that children would add their own ideas and details to story characters, places and events whenever they were required to reinterpret a graphical picture of a story element in their own words, or to transform an orally presented story into written form. For example, in one storytelling session, the children's initial narrative idea – shared during the selection of story elements – closely mirrored the visual prompts provided:

> Once upon a time there was a dragon who read in a book that there is a catastrophe. And afterwards he followed a data trail that led to his grandmother. She had a magic pen and with it she saved the earth . Then the grandmother twirled the pen around and the dragon became a tree horse.

Through several rounds of storytelling, discussion, and iterative writing, the children elaborated on their initial idea, introducing new characters and refining the plot. Notably, after the initial selection of story elements, the default titles associated with those elements disappeared from view, prompting the children to create their own descriptions and narrative phrasing. The final version (translated from Italian) read:

> The Dragon Eragon: Once upon a time, there was a dragon named Eragon who read in a book that a catastrophe was imminent. He followed a data trail that led to his grandmother Frida. For she possessed a magic pen. The dragon asked Frida if she could reverse the catastrophe? Frida said she had to turn Eragon into a tree horse, because only such a creature had the power to save the world. Eragon agreed and Frida performed the spell. They lived happily ever after until end of their lives.

This suggests that by engaging students in activities where they translate meanings across modes, educators can foster a creative environment.

In discussing the implications of different modes, such as verbal, visual, auditory, spatial and gestural forms of representation, in educational settings, Kress (2003, p. 100) refers to the process of transforming meanings from one modality to another as transduction. Transduction is not merely a translation of content but a complex process that takes into account the unique characteristics and affordances of different modalities.

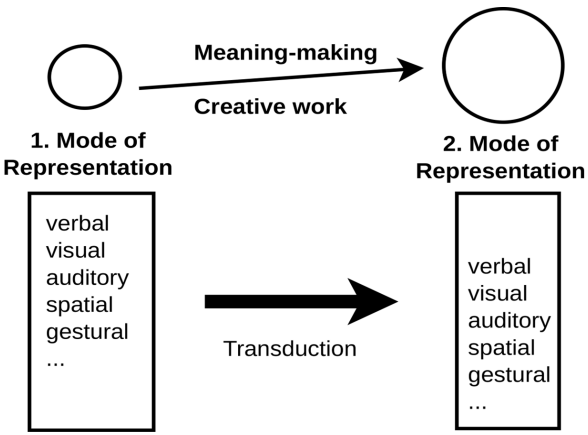

Figure 1 – As children move meanings between representational modalities, they engage in transduction.

Figure 1 shows how meaning moves between different modes of representation during storytelling activities. By actively engaging in the translation of an idea or concept from one mode to another, children reinterpret the content and shape it into their own different representational form. Based on this notion, the Fantastinomio storytelling tool has been designed so that children first witness how a word they click on, i.e. the title of a story element, is represented as a drawing on a storyboard-like display. Based on that nonverbal drawing, children would often make slight modifications and additions to the wording of the original title during their oral retelling, ultimately taking ownership of the full meaning of their story at the end of the process. Figure 2 shows how this need to «fill in the blanks» across modes within the storytelling activity leads to processes of transduction that ultimately allow children to nurture their creative competence. This dynamic gives rise to the experience of creative expression.

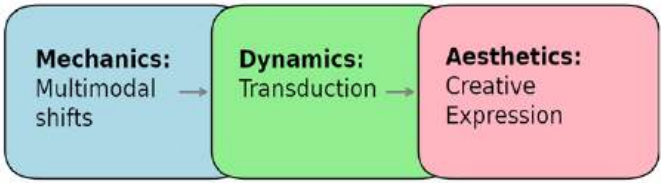

Figure 2 – MDA-model and creative expression

4.2 Provide Means of Identification

The analysis of the collected cases has shown that story elements, which are offered to students as a creative input to work from, are more effective when they provide the opportunity for students to identify with them. Moments of identification were observable through group-wide immediate agreement on a specific element, expressions of excitement or laughter, and spontaneous comments such as "Wow, an electronic pig!" Such instances tended to result in more enriched stories with more connections to personal experiences and more detailed characters descriptions. Based on the identification of some common characteristics of story elements that children prioritized (Schlauch, 2023, p. 113), we are now able discuss these story elements as shaping narrative choices that are perceived as meaningful to the children, leading eventu-

ally to a greater identification with their work that can be shaped in a unique way, promoting autonomous decision-making. The connection between story elements, dynamics of meaningful choice and identification can again be displayed in Figure 3.

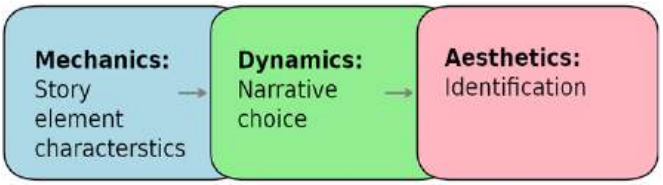

Figure 3 – MDA-model and identification

Whenever a storytelling activity involves the selection of story elements which students would later use to construct stories, the following criteria can be applied during the design of these story elements.

- Narrative fit: story elements should fit within the current context and feel like plausible additions that make sense within the storyline and the lived experiences of the student. Each element should enrich or advance the story without disrupting its flow. For example, this can be achieved by providing a mix of different categories of elements (e.g. places, characters, events) that are compatible to each other.
- Novelty: unexpected elements introduce unexpected twists and spark curiosity. Interestingly, the additions provided by children themselves often offer the greatest novelty, linking a familiar background with new ideas. For example, seeing a custom story element entitled "electronic pig" lets children speculate about the drawings of their classmates.
- Amusement: elements that add amusement make sessions more engaging and lighthearted, encouraging children to entertain themselves and each other.
- Convenience: refers to choices based on simplicity or ease of use, often relating to language or reading skills. Elements that are easier to understand, pronounce, or incorporate are more likely to be selected. Therefore, it is essential to take children's prior knowledge into account when preparing story elements.

- Personal connection: children select story elements that hold specific meaning, relevance, or emotional resonance for them. Elements with a personal connection often reflect their interests, concerns, or cultural backgrounds, allowing them to embed personal identity into the narrative. For example, a picture of a girl might represent "my best friend Dina," or a t-shirt could symbolize a favorite football player, allowing children to personalize the narrative.

By supporting these diverse preferences, the tool fosters a more inclusive and engaging storytelling environment, where children can contribute in ways that resonate personally and socially.

4.3 Provide Roles for Collaboration

Affording separate roles for collaboration in a storytelling activity can significantly enhance the group experience. This division of responsibilities encourages a structured approach to collaboration, allowing children to focus on specific aspects of the storytelling process, whether it's generating narrative content, analyzing story elements, or navigating the storytelling tool. In group-based storytelling sessions, children often spontaneously took on roles and fluidly shifted between them according to situational needs. However, the following key roles could be observed that children tended to assume when working in groups:

- Operator: manages the technical aspects of the storytelling tool (e.g. selecting the correct image) and ensures that the group's choices are reflected in the narrative
- Language mediator: translates or reads aloud if comprehension difficulties arise
- Participant: shows agreement and disagreement, ensures a turn-taking routine
- Interpreter: decodes and explains story elements, also through nonverbal cues, to facilitate decision making
- Analyst: verifies the storyline, asks follow-up questions when something is unclear, makes sure everyone is updated
- Storyteller: articulates narrative ideas as a suggestion, integrates story details, relabels story elements and removes them as needed

If children are unable to assign or adopt these roles among themselves, the resulting story tends to be less coherent and offers fewer opportunities for identification. A storytelling activity that supports differentiated roles allows each participant to meaningfully engage according to their strengths and preferences. This role differentiation promotes collaboration by clarifying individual contributions, reducing conflict, and fostering a collective sense of ownership of the final narrative (see Figure 4).

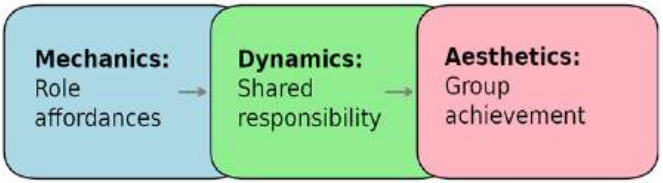

Figure 4 – MDA-model and collaboration

5. Limitations

Several limitations affect the interpretation and generalizability of the aforementioned findings. First, the range of contexts and participants was limited, with participants drawn from two different primary schools already open to game-based approaches. Further testing of the findings should include a greater variety of educational settings, pedagogical philosophies, and student backgrounds. Second, because of their focus on design, the studies reviewed here don't address long-term effects on student outcomes and rely on observations, whereas further research could assess learning outcomes such as content knowledge, literacy and language skills, and motivation with appropriate instruments. Another limitation is the reliance on teacher competence and support. It hasn't been addressed that these may vary significantly based on individual familiarity with digital storytelling tools and game-based pedagogy. Further studies should address the need for consistent training and support to ensure effective integration of the recommendations.

6. Conclusion

The shift from gamification to eudaimonic design underscores the importance of treating play as an integral part of learning rather than as a superficial motivator. The study examples discussed here demonstrate that integrating storytelling into playful educational experiences can meaningfully enhance learning by fostering creativity, identification, and collaboration. The concept of eudaimonic design, as applied here, allows the storytelling process to transcend conventional gamified approaches by focusing on deeper psychological engagement rather than extrinsic rewards. By implementing eudaimonic principles in the Fantastinomio, this research illustrates how educational tools can foster a deeper, more authentic engagement by prioritizing autonomy, competence and connection through collaboration rather than purely outcome-based incentives. This suggests that eudaimonic design can bridge the gap between enjoyment and learning, framing them as complementary rather than opposites.

For practitioners, this study highlights the need for practical resources that translate eudaimonic principles into actionable classroom strategies. Teachers would benefit from professional development programs offering adaptable materials that support creative expression, techniques for facilitating collaboration, and formative assessment approaches aligned with intrinsic motivation.

More broadly, play-based learning resources should be designed to leverage the transition between multiple modalities to provide space for students' creative contributions. Involving students early in the design process helps cultivate personal identification with characters and themes, deepening emotional and cognitive engagement. To foster meaningful collaboration, teachers need strategic lesson planning skills and a strong grasp of the digital or analog technologies they employ, enabling them to assign roles that support shared responsibility and interdependence.

Further design-based studies could explore the effectiveness of this approach across different educational contexts, subject domains, and age groups, amplifying the original focus on storytelling toward broader curricular activities.

In light of the paper's primary focus, the design lenses presented offer a structured approach to crafting storytelling activities in a way that encourages collaboration, creative expression and identification, thereby enhancing the storytelling experience for each participant.

References

Akin-Little, K. A., Eckert, T. L., Lovett, B. J., & Little, S. G. (2004). Extrinsic reinforcement in the classroom: Bribery or best practice. *School Psychology Review*, *33*(3), 344–362. https://doi.org/10.1080/02796015.2004.12086253

Bodrova, E. (2008). Make-believe play versus academic skills: A vygotskian approach to today's dilemma of early childhood education. *European Early Childhood Education Research Journal*, *16*(3), 357–369. https://doi.org/10.1080/13502930802291777

Bogost, I. (2013). Exploitationware. In R. Colby, M. S. Johnson *& R. S. Colby (Eds.) Rhetoric/composition/play through video games* (pp. 139–147). Palgrave Macmillan US. https://doi.org/10.1057/9781137307675_11

Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry*, *18*(1), 1–21.

De Castell, S. (2011). Ludic epistemology: What game-based learning can teach curriculum studies. *Journal of the Canadian Association for Curriculum Studies*, *8*(2), 19–27.

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627–668.

Detering, Sebastian: Eudaimonic Design, or: Six Invitations to Rethink Gamification. In: M. Fuchs, S. Fizek, P. Ruffino, N. Schrape (Eds.), *Rethinking Gamification*. Lüneburg: meson press 2014, pp. 305–331. https://doi.org/10.25969/mediarep/727.

Druin, A. (1999). Cooperative inquiry: Developing new technologies for children with children. In *Proceedings of the SIGCHI conference on Human Factors in Computing Systems* (pp. 592–599). Association for Computing Machinery. https://doi.org/10.1145/302979.303166

Gee, J. P. (2005). Learning by Design: Good Video Games as Learning Machines. *E-Learning and Digital Media*, *2*(1), 5–16. https://doi.org/10.2304/elea.2005.2.1.5

Greene, D., & Lepper, M. R. (1974). Effects of extrinsic rewards on children's subsequent intrinsic interest. *Child development*, 1141–1145.

Guha, M. L., Druin, A., & Fails, J. A. (2013). Cooperative inquiry revisited: Reflections of the past and guidelines for the future of intergenerational co-design. *International Journal of Child-Computer Interaction*, *1*(1), 14–23. https://doi.org/10.1016/j.ijcci.2012.08.003

Herman, D. (2003). Stories as a tool for thinking. In *Narrative theory and the cognitive sciences* (pp. 163–192). Stanford University Center for the Study of Language; Information.

Huizinga, J. (1949). *Homo ludens: A study of the play-element in culture*. Routledge.

Hunicke, R., LeBlanc, M., Zubek, R., et al. (2004). Mda: A formal approach to game design and game research. *Proceedings of the AAAI Workshop on Challenges in Game AI*, *4*(1), 1722.

Koenitz, H. (2023). *Understanding interactive digital narrative*. Routledge.

Kress, G. (2003). *Literacy in the new media age*. Psychology Press.

Laurel, B. (2001). *Utopian entrepreneur*. MIT Press.

Markopoulos, P., Read, J. C., MacFarlane, S., & Hoysniemi, J. (2008). *Evaluating children's interactive products: Principles and practices for interaction designers*. Elsevier.

McKenney, S., & Reeves, T. (2018). *Conducting educational design research* (2nd ed.). Routledge.

Perrotta, C., Bailey, C., Ryder, J., Haggis-Burridge, M., & Persico, D. (2019). Games as (not) culture: A critical policy analysis of the economic agenda of horizon 2020. *Games and Culture*, *15*(8), 902–922. https://doi.org/10.1177/1555412019853899

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Schell, J. (2008). *The art of game design: A book of lenses*. Morgan Kaufmann.

Schlauch, M. (2022). MEKIDS Media Education with Kids through Interactive Digital Storytelling. In *Proceedings of the 2022 ACM Interaction Design and*

Children Conference (pp. 676–678). Association for Computing Machinery. https://doi.org/10.1145/3501712.3538832

Schlauch, M. (2023). *Mekids: Media education with kids through interactive digital storytelling, a design-based research study* [Doctoral dissertation, Free University of Bozen-Bolzano]. https://hdl.handle.net/10863/36753

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Harvard University Press. (Original work published 1934)

Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. O'Reilly.