QTIMES
JOURNAL OF EDUCATION
Technology and Social Studies

4

Ottobre 2025

Pedagogical and Didactical Reflections about the application of the digitally enhanced learning environment ActiveFloor for children

Riflessioni Pedagogiche e Didattiche sull'Applicazione dell'Ambiente di Apprendimento Digitalmente Potenziato ActiveFloor per Bambini/e

Stephanie Mian, Katja Kansteiner, Susanne Schumacher
Libera Università di Bolzano

Stephanie.Mian@unibz.it
Katja.Kansteiner@unibz.it
Susanne.Schumacher@unibz.it

Doi: https://doi.org/10.14668/QTimes_17414

ABSTRACT

Learning through play is essential in early childhood and primary education. Digital games employ motivational strategies and create ludic spaces. One example is ActiveFloor, an educational technology (EdTech), which allows children to physically interact with projected learning games. In a pilot project, we evaluated its didactic potential by phenomenological vignettes. By interpreting these condensed narratives in so-called vignette-readings, we analysed didactical challenges regarding children's creativity and teachers' group management activities. We present conclusions

based on one vignette-example and discuss opportunities and limitations of the digital game and its use in educational contexts.

Keywords: Digital Games, Learning Environments, Phenomenological Vignette Research, Didactical Implications.

RIASSUNTO

Il gioco rappresenta una forma di apprendimento essenziale nella prima infanzia e nella scuola primaria. I giochi digitali utilizzano strategie motivazionali e creano contesti ludici. Tra questi si colloca l'ActiveFloor, una tecnologia educativa che permette l'interazione fisica fisicamente con giochi didattici proiettati (dove?). All'interno di un progetto pilota è stato esplorato il suo potenziale didattico attraverso la raccolta e l'analisi di vignette fenomenologiche. La lettura delle vignette ha permesso di individuare le sfide didattiche riguardanti la creatività dei bambini e le attività di gestione del gruppo da parte degli insegnanti. Le conclusioni vengono illustrate a partire da un esempio di vignetta e vengono discusse inoltre le opportunità e i limiti dell'impiego del gioco digitale nei contesti educativi.

Parole chiave: Giochi Digitali, Ambienti di Apprendimento, Ricerca con Vignette Fenomenologiche, Implicazioni Didattiche.

---

1. INTRODUCTION

Prior to reflect on the way, children behave when they interact with the digital learning tool *ActiveFloor*, we wish to make reference to two general theoretical aspects: (1) If lesson planning starts out with the decision that a digitally supported game is to be played, the methodical perspective is prioritised over didactical issues. From the German discourse on education theory, this can be seen as critical because the goal of learning should drive the method (Klafki, 2007). (2) Another inconsistency arises when a game is intended to serve as a learning method since the nature of play is often characterised as purposeless and voluntary (Huizinga,1940/2023; Caillois, 1958/2001). Genuine play has meaning and purpose in itself (Mogel, 2008) and is based on the principle of enjoyment (Farné, 2020).

With the research results we present, we set out to show how children create their own reality during play, in which they strive to achieve both the goals set out in the game design and their own (unintentional) goals. This in turn draws attention towards essential didactical reflection. In this paper, we firstly outline the main elements of play theory followed by those of educational technology (EdTech) as part of a digitally enhanced learning environment. Afterwards, we present the educational

technology game *ActiveFloor*. We then introduce the research methodology of phenomenology and present our findings concerning one research vignette, analysing it in terms of didactics and teaching.

2. PLAYING AS A FORM OF LEARNING

From the perspective of cultural studies, play in general is significant for both individual and social development. Huizinga (1940/2023) defines *play* as

> "a voluntary action or activity that is carried out within certain fixed limits of time and space according to voluntarily accepted but absolutely binding rules, has its goal in itself and is accompanied by a feeling of tension and joy and an awareness of 'being different' from 'ordinary life'" (p. 37)[1].

Rule-based games promote the ability to adopt different perspectives and contribute to social development (Hauser, 2013). By creating a small-scale society, rule-based games offer the opportunity to practise essential social communication skills (Thiele, 2020, p. 145). However, games in their natural form (as much as in their most structured and closed forms) manifest complex mechanisms that process ways of organising the world and societies (Caillois, 1958/2001). According to Caillois (1958) practices of gaming can be categorised in four basic modes: competition (*agôn*), chance (*alea*), disguise (*mimicry*), and frenzy (*ilinx)*.

The distinction between the four categories is not always clear-cut. For example, *agôn* and *alea* often occur in combination when an element of chance is integrated into a game in which skills are challenged, and consequently, equal opportunities for players with different starting conditions are given. *Mimicry* and *agôn* can be mixed when spectators identify with players. No connection can be conceptualised between *mimicry* and *alea*, as the former involves active intervention by the player, while the latter involves passively waiting for fate to take its course. Neither is the combination of *agôn* and *ilinx* possible, as skillful manipulation contradicts deliberate failure.

Play activities differ with increasing experience in handling materials, fine motor precision, concentration and metacognitive abilities (Mogel, 2008). In the first three years of childhood, functional and symbolic play occur as much as constructive activities in individual play. This reflects the levels of reality (*ibid.*). By playing roles, children experience themselves as part of a play community. Children adopt, repeat, imitate, comment, or modify the behaviour of others who are playing. By taking over a role, children can get to know themselves better, expand their experience, and express and project desires (Mogel, 2008). During play, children construct scenarios that reflect both their present interests and developmental stage. Consequently, as Heimlich (2023) notes, "[p]lay has an educational character because it enables children to engage independently with their cultural environment" (p. 138). These self-directed activities of playful learning are characterised by moments

[1] All quotes were translated by the authors.

of wonder and lingering, repetition and enjoyment, exploratory movements, digression and interruption (Duncker, 2011).
From a phenomenological perspective, which forms the basis of our research, such moments are seen as children's responses to external demands, which initiate learning, understood as experience, and reveal new horizons (Meyer-Drawe, 2012). In pre-school age such "moments of unstable learning" (Duncker, 2011, p. 28) are common, and becoming familiar with reality occurs by playful, situational, and incidental forms of learning. In primary school age, these forms recede into the background in favour of systematic learning, which is significant but time-consuming. Playful forms of learning or hybrid forms that combine playful forms with linear forms of learning can still be found in primary school education but become less frequent as children grow (ibid.). One way of creating playful learning environments that link diverse play formats with concrete learning objectives for pre-schoolers as well as for primary school children, is the use of educational technology.

3. THE ACTIVEFLOOR AS A DIGITALLY ENHANCED LEARNING ENVIRONMENT

In game design, the challenge is to combine components, game formats, and aesthetics in such a way that they enable a holistic gaming experience that affects players. In sports games, the competitive nature clearly predominates. Compared to competitive games, action-packed games are usually linked to an additional reward system (higher levels). Jump "n" runs are a mixture of rule-based competition and random principles. Mimicry is naturally a factor in role-playing games, but it also comes into play in simulations. Flow can occur in all game genres, for example through immersive immersion in the game, expectations of gratification or stimulating challenges (Hunicke *et al*., 2004).
Educational technology refers to electronic devices and applications that support the provision of learning subjects and promote learning processes. These tools offer functions for serial or parallel presentation of information or learning content in formats such as text, images, sound, videos, as well as tools for synchronous or asynchronous collaboration on a single user interface. If based on a moderate constructivist understanding of learning, in digital educational game formats, the ratio of instruction and personal involvement, the cognitive performance requirements through exploration, and the variable game components for activating intrinsic and extrinsic motivation are therefore fundamental design elements.
Some positive effects of digitally enhanced learning environments that are met by characteristics of the game *ActiveFloor* considered here, are:

- The presence of changeable game elements has the capacity to activate both intrinsic and extrinsic motivation (Wolling *et al*., 2008)
- Digital educational games that integrate structured learning content have a greater potential for successful learning (Wolling *et al*., 2008)
- Playful interaction and cognitive identification with goals are conducive to effective learning (Cohen, 2001)
- Using appealing graphics facilitates the activation of emotional involvement (Thielsch & Wirth, 2017).

However, the results might turn out differently for diverse learners, e.g. for a person with an affect-based or cognition-based behavioural style of play (Naumann, 2004).

ActiveFloor is an innovative edtech device that combines the characteristics of digital games with a variety of graphically animated game formats, opportunities for integrating subject specific learning units (https://activefloor.com/en/learning-games/). The various game formats are hosted by a cloud service provider and managed in a content management system. Remote access is possible worldwide; teachers and learners at an institution form a licensed user group and can copy any game released by an author for the gaming community to a user-specific playlist. Hereafter, the educator can tailor the game template to the users' prior knowledge and skills by either adapting the language or modifying the content. Finally, the chosen game is projected onto a white and non-slip vinyl floor (necessary equipment) via a projector installed on the ceiling (figure 1). The media technology package comprises (aside from the projector) an on-board PC and a tracking camera that registers all movements and synchronises them with the moves the players make.

Fig. 1: The projected picture plus the question posed to the children (How many calves does a cow have per year?); both prepared by the researcher.

4. DESIGN OF THE PILOT

Games to be played with *ActiveFloor* are designed for small groups in pre-school, schools, hospitals, libraries, etc. Considering the requirements for differentiation, personalisation, and individual support in the classroom, it is essential to investigate the specific (game-)didactic stimuli that arise for each child and analyse the dynamics during its application. In the pilot project, we explored *ActiveFloor's* potential and identified examples of educational opportunities for an effective learning implementation.

The research question is: "What experiences do children have when playing with the ActiveFloor, and what do the documented experiences imply from a didactic perspective of the game as a learning environment?" The pilot project was run by capturing the players' experiences through phenomenological vignettes (Agostini *et al*., 2024) as a co-experiential viewpoint. This approach furthermore focuses on the aesthetic and sensory aspects of play (Huizinga, 1940/2023) and the meanings that the game reveals to children as players. Data was collected when a group of children visited the EduSpace Lernwerkstatt at Free University of Bozen-Bolzano/Campus Brixen-Bressanone where it is in use for demonstration in initial and further teacher training and research interests.[2] As we are in the initial phase of the project, the data we refer to was the first to be collected and analysed. Below, we present an illustrative sample from the corpus together with its interpretation.

4.1 Methodology

Phenomenological vignettes are methodologically based on Husserl's (2001) descriptive phenomenology, Merleau-Ponty's (1945/2005) phenomenology of the body and Waldenfels' (2024) responsive phenomenology. These theoretical positions are founded on the assumption that other people, the world and things can only be perceived the way they are experienced bodily with all the senses by the individual. The world, learning and learners are viewed as meaningful (offering meaning and possessing a demanding character), as experience (which is undergone and enacted) and as experiencers (who complete the meaning offered) (Meyer-Drawe, 2012). From a phenomenological perspective, it cannot be directly researched how someone experiences something and responds to external demands. However, it can be described and recorded what and how researchers have experienced others as experiencers within a shared context of experience (Laing, 1967).

The preferred method of phenomenology is the exemplary description (Lippitz, 2019). It is how the phenomenological vignette, a qualitative research tool, can be understood. When collecting vignettes, researchers enter the research setting with an open mind and without prejudice, recording moments of experience in the form of notes or initial drafts known as raw vignettes. They capture moments that draw their attention and affect them. These moments are then condensed in a multi-step process (Agostini *et al*., 2023; Zadra & Mian, 2023) from the initial draft to an intersubjectively validated final vignette - a dense and aesthetically appealing narrative that opens up spaces of resonance and experience of the co-experienced situation (Mian & Agostini, 2025). The surplus of meaning generated in the vignette through the process of condensation and evocative writing (Mian, 2019), can bring different aspects of the situation into focus when analysing the vignettes in the so-called vignette readings (Schratz *et al*., 2012). Moreover, interpretation depends on the reader's horizon of

[2] https://www.unibz.it/de/faculties/education/eduspace-lernwerkstatt/

experience and adopted theoretical perspective. The aim of this interpretive-descriptive approach (see also Mian & Kansteiner, 2025) is to understand (a) what is happening between the individuals involved and the world, (b) what meanings arise between the self, the world and others in relation to the self, the world and others, (c) and which possible moments of experience are inherent in the situation. By interpreting it from different (theoretical) perspectives, referring to it in a (theoretical) reflective manner, and pointing out different options of understanding, the rich variety of the experience is revealed and can be differentiated (Schratz *et al*., 2012). Accordingly, "readings of vignettes raise further questions that cannot be answered conclusively but allow for a diversity of perspectives and thus for reflection and expansion" (Agostini *et al*., 2024, p. 117).
We present an exemplary vignette with its phenomenological reading to illustrate children's possible play experiences with the *ActiveFloor*. The reading serves as a basis for reflection on both its inherent didactic potential and the forms of didactical support it may afford.

4.2 The phenomenological vignette and its reading

> *Vignette: Daniel and the Cow... and Lukas*
> The 14 children are standing with their teachers, Ms. Heinz and Ms. Mark, as well as a member of the research team at the edge of the *ActiveFloor*, situated in the Lernwerkstatt. Daniel is standing at the corner of the vinyl field. With his head slightly tilted, he looks at the image of a cow, projected onto the floor along with the corresponding quiz question. Slowly, he kneels down, squats, and steadies himself with one hand while using the other to explore the projected image of the cow. He presses his fingers onto the floor, and strokes it, examining. His gaze follows his touch. Suddenly, he looks up searchingly. His eyes find those of Lukas, who is watching him and is laughing. Daniel returns his classmate's laughter and continues to touch-explore the cow. He alternates his gaze between the cow and Lukas.
> Lukas' laughter grows louder. Daniel begins to scratch the cow under its chin with one finger. Lukas laughs even louder, and Daniel's scratching becomes more intense. The two exchange glances: Daniel grinning, giggling, and scratching, Lukas laughing louder and louder.
> Quickly Ms. Heinz rushes over, places a hand on Daniel's shoulder, bends down with a serious expression on her face, and whispers something firmly into his ear. As she hurries back to the children in the other corner of the field, Daniel follows her with his eyes, expression-less. He remains in his squatting position for a moment before slowly standing up. With his head tilted to one side and his mouth slightly twisted, his gaze again finds the cow.

Vignette reading:
A group of 14 children stands at the edge of the vinyl field with their two teachers. Daniel is at the corner, his head slightly tilted as he gazes at the image of a cow projected onto the floor (see picture 1). The quiz question, which would normally command his attention, goes completely unnoticed; the cow has fully captured his focus. It seems to engage him so completely that the competitive game, designed for the children to demonstrate through play their previously acquired knowledge, fades into the background. The cow seems to have issued an appeal to Daniel, to which he responds, not only by directing his gaze toward it but also by moving closer to the image. Slowly, Daniel kneels down and squats. He is approaching the image, in this in-between space, which in this *inter-esse* (Latin for being in between, Interesse: German for being curious) can take on various forms. Daniel supports

himself with one hand while using the other to seek out the projected image of the cow—or is it the cow he is searching for? Did he expect something different than what he now finds through his exploratory movements? The fur, the warmth, the softness of the cow - in short, the cow itself?
His gaze follows his tentative movements, his touch, as if to visually confirm the tactile information from the floor. Does he not trust his sense of touch? Daniel examines the image, stroking it gropingly. Does this reveal Daniel's pathic and embodied prior knowledge, "which represents more of a pre-reflective sensing than a recognition" (Stieve, 2010, p. 273)? Does a "time-consuming irritation" (Meyer-Drawe, 2012, p. 15) arise here, a *pathic event* (Waldenfels, 2024), constituting something foreign intruding into the familiar lifeworld and thereby opening up the potential for a learning process? Could the gap between expectation and actual perception, in this encounter between analog expectations and digital experience, pave the way for a transformative experience in which a new understanding of the self, matter, and other might take shape? What might unfold through the other person, who is able to recognise and seize the fruitful moment? How can a dashed expectation, arising from prior tactile perception, be transformed into something productive and how might the learner be accompanied on this path toward a new horizon (Mian, in press)?
Learning as relearning *(Umlernen)* – that is, the transformation of one's horizon from lifeworld knowledge, this pre-reflective, sensuous, embodied mode of experience, to scientific recognition – always entails learning from another person in relation to a particular subject (Meyer-Drawe, 2012). What is the subject matter for Daniel, and what might it become when the teacher's perspective competes with his own, potentially opening a space for him to reconsider and relearn? Could it turn into a matter of optics, projection, technology, or digital media? A question of photography and art? "Forgetting spreads over the matter and over us, over how it and we were, before we learned." (Meyer-Drawe, 2005, p. 26) Could the teacher, in turn, be reminded of the lifeworld knowledge and understanding on which all knowledge is founded through Daniel's perspective and his engagement with the image of the cow, thereby gaining insights into the learning process and deriving implications for teaching?
In any case, the cow – or the image of the cow – appears questionable. Does it become question-able – both open to question and worthy of being questioned? Daniel seems to lack someone with whom he can interrogate the cow and thereby achieve an open space for relearning. Or will one of the teachers have to keep Daniel and his experience in mind and follow up on it in the next lesson in a way that is fruitful for him – or perhaps for all the children?
Nevertheless, the 'inter-space' expands: the pathic and dynamic space in which the image of the cow affected Daniel, engaged him in a creative act and drew him away from the game and the rules inherent in the learning arrangement. Daniel looks up in a searching way and finds Lukas, who was attentive to Daniel and his exploratory movements and is watching him with a smile. Daniel sees Lukas and experiences himself in Lukas' gaze, as the one being seen. Does the child feel validated in what he is doing, or perhaps even as a person? My body, which enables me to perceive, exposes me to others (Merleau-Ponty 1945/2005). What does Daniel become in Lukas' perception?
Daniel continues to develop the connection established through eye contact with Lukas, who initiated it with his smile. He returns the other child's smile and continues to 'feel' the virtual cow. By alternating his gaze between the cow and Lukas, he seems to be trying to maintain contact with Lukas through the movements he makes, attributing the connection between himself and the other boy to these movements. Daniel's laughter grows louder. Encouraged by this, Daniels' actions take on a new quality: He begins to scratch the image of the cow, making it resemble a 'real' cow even more as he

strokes it under the chin with his finger. The scratching seems to demonstrate his lifeworld knowledge of how to interact with an animal. Is he ultimately stroking it as if it were a small, cute animal, like a cat, even though the cow is much larger, but appears small due to the projected image on the floor? Daniel might know how to scratch a cat. But what about scratching a cow? Should his lifeworld experience also be further differentiated?

Lukas' laughter grows louder, while Daniel's stroking becomes more intense. The two exchange glances: Daniel grinning, giggling, and stroking; Lukas laughing increasingly loudly. Together with, and enabled by the cow, they form an *intermediary space* (Stieve, 2010), in which, through interaction, the cow as well as the children gain a new meaning both for themselves and for each other. "Intermediary, in the phenomenological sense, does not mean a space between pre-existing subjectivity and objectivity, but can be understood as an appearing, as a phenomenal sphere in which a perceiver and the perceived first reveal themselves" (*ibid*., p. 267), thereby producing meanings between them that cannot be fully attributed to either. What do the cow, the play, Daniel, and Lukas become for one another? The image of the cow, which initially invited exploration and perhaps became a 'real' animal 'cow' – at the forefront for Daniel at the beginning—now seems to recede into the background in favour of the emerging and evolving relationship with Lukas. Is this a new kind of relationship? Are the two perhaps discovering new facets of each other, thereby opening up the possibility of a new quality of relationship as children within a group?

In any case, their exchange, which does not correspond to the assigned task, does not go unnoticed: Ms. Heinz quickly rushes over. Have the two of them also violated her rules concerning smooth flow of the play or lesson? Ms. Heinz seems to regard their behaviour as a disruption and seeks to eliminate it: She places a hand on Daniel's shoulder, bends down with a serious expression on her face, and whispers something firmly into his ear. Has Daniel, as a learning participant in the game, failed to recognise the demands of the game mechanics and the play format itself, and with them the intentions for learning and practice embedded by the teacher in the game – in short, has he misunderstood the seriousness of the (practice) game? The seriousness of the digital learning arrangement? What is this 'game' with the *ActiveFloor* really all about – for the teacher, for Daniel, for Lukas, for the others?

Ms. Heinz seems to be in a hurry: She hurries back to the children in the other corner of the playing field. The fact that, and how, Daniel initially struggled/engaged with the matter – the image of the cow and his sensation of it – seems to have escaped her attention. For Ms. Heinz, Daniel's irritation – which might also have become a matter of *inter-esse* or been perceived as questionable by Lukas and the rest of the class – appears to be regarded solely as a disruption of the task, of others, and of the practice. Or was the "removal of the cause of the disruption" a professional act, a situationally necessary measure to maintain the smooth progression of learning according to the principles of classroom management (Putra & Yanto, 2025)? Why did her attention fall only on Daniel and not on Lukas? Do she and Daniel share a prior history that leads her to attribute the disruption to him, to stop it through him?

Daniel follows the teacher with his eyes, expressionless, and remains in his squatting position for another moment before he slowly stands up. Is he trying to make sense of what just happened, to understand it, to get a grip on it? In any case, he seems to have difficulty letting go of the cow and appears aware of the (playful) opportunities that he might have missed, as his gaze – with his head tilted to the side and his mouth slightly twisted – finds the cow again.

5. DIDACTICAL IMPLICATIONS

To us, the moments of experience differentiated in the reading of the vignette point to four relevant didactical phenomena. First, it becomes obvious that the child was placed in an unfamiliar situation of having to play a digital game including projection technology. The boy's movements show that he perceives this virtual space in a somewhat analogue way. This might have happened also because the image of a farm animal is a figure familiar from board games, pictures, and books, albeit shown here in an unfamiliar digital form. The child's searching movement indicates that he has not fully understood the digital nature of the situation. He associates the unaccustomed with the accustomed and thus transforms it into something known. By doing so, the child copes with it. Referring to the meaning of the game, we would define that a subversive moment arises that shows that the game (here conveyed in the *ActiveFloor*) can be understood as much an introduction to or an integration into (digital) culture as a challenge for creativity in which the self and the world are transformed (Weiß, 2020).

We conclude that this presents an opportunity for the boy to learn how digital projection works, how the gaming device functions technically, etc. This situation therefore provides a learning opportunity that could be addressed in a domain-specific manner – for example, from a scientific or media technology perspective – and lead to an educational experience – for him and duly for the other children. The playing situation could be a starting point for learning to understand this new part of the world.

Likewise, from the perspective of aesthetic education, this contingent situation can be seen as an educational opportunity when we classify the child's actions as a creative act within the playful and creative use of the digital world. Against the backdrop of comparable experiences in nature and with animals in the closer environment, the child transforms what is available or shown in this digital space into a scenic moment. The boy develops a connecting story within two forms of representation and formulates an entertaining meaning. This is reminiscent of artistic forms of expression: art performance, installations, musical performance with avatars. From the perspective of a less frequently discussed objective of media education, namely the ability to use digital media creatively and constructively in life (Baake, 1996), this impulse can be regarded as a didactical stimulus for further creative exploration that the children could explore in and beyond the playing situation.

Additionally, we recognise that this playful activity generates a power for social interaction and concurrent social integration. By playing creatively with the projected cow, the boy shows a behaviour that seems to be stimulating and amusing to another child. This moment makes bonding possible, demonstrated by shared laughter, and thus a sense of social belonging derives from an unexpected situation in playing. Since social belonging is one of the key characteristics of motivation and learning (Deci & Ryan, 1993) it can be regarded as a beneficial situation for both children. On the other hand, such peer dynamics in a bigger group context might have an undesirable side effect on the group processes when discipline is disturbed along with concentration on the task. In the situation analysed, from the teacher's point of view the boy's behaviour is perceived as disruptive and is punished with a warning. So, while supporting the learning (Hardy, Stephan-Gramberg & Jurecka, 2021) could have been a professional way of handling the situation and of facilitating the unexpected potential that emerged, from the didactic perspective of the teacher, maintaining discipline in the group is the primary orientation and thus the emerging learning potential is not recognised.

The vignette reading allows us to exemplify how a digital learning environment – here playing a learning game with *ActiveFloor* – offers far more learning opportunities than might have originally been foreseen by the actual game format. This can result from discrepancies that arise between prior knowledge and new experiences, and from creative actions that children naturally bring to a play situation. For teachers, who are equally responsible for each individual child and for the group as a whole, this unexpected and additional dynamic must be actively reflected and form part of their didactical planning from the outset. They face a greater challenge because they have to ensure that the intended learning process can succeed and, at the same time, identify the educational impulses of individual children and incorporate them for further learning.
In general, we suggest that by co-experience or observation and documentation, it would be possible to at least record the 'uninhibited' moments in which children engage with the subject matter in a specific way and when intensity or irritation may occur. If the teacher cannot react to it immediately, he/she should ensure that it can be returned to with the single child or, if beneficial, with all children in class at a later point. In the event of two teachers present in the situation analysed here, the possibility would have existed for one to lead the group while the other captured ongoing micro-activities by observation.

6. CONCLUSION

Based on these preliminary insights, we conclude the following as a first approximation for the use of *ActiveFloor* and as a general reflection on a digitally enhanced learning environment in children's education:

Even if a learning tool is offered as ready-made, it must not only be well regarded according to the goal intended but also accompanied by well-reflected didactic support. We are thinking not only of the appropriate selection of topics, but also of education-related contingencies at content, social, physical and aesthetic levels. How that can be done with particular reference to the use of *ActiveFloor* in teaching, is a target addressed by our future research and conceptual development work.

On the one hand, *ActiveFloor* offers opportunities for a digitally enriched learning environment as outlined above: appealing to children, motivating, with structured learning content. On the other hand, the design with the idea of a defined output is not as clear-cut as one would expect. Human experiences that evolve within the environment generate equivocation – the cow as an animal, image, object of play and medium of interaction – and that is actually beneficial since it produces opportunities for unexpected but desirable learning processes. In addition, the intertwining of visual, tactile and kinaesthetic modes of experience, as intuitively performed by the child in the situation analysed, points to enduring importance of the physical dimension in digital learning environments. Despite the involvement of experts in *ActiveFloor's* development, its use still requires didactically all-encompassing preparation and reflection in order to grasp educational opportunities from sensitive moments initiated ad hoc by the child. The priority of didactical reflection before methodological decision making as it is discussed in theory can be emphasised according to our first data.

Finally, the vignette shows that children, by responding to the demands of the Other, can generate spaces for themselves within a pre-structured and prescriptive learning environment, which can be regarded as crucial and – in the broadest sense – beneficial to educational goals.

REFERENCES

Agostini, E., Peterlini, H. K., Donlic, J., Kumpusch, V., Lehner, D., & Sandner, I. (eds.). (2023). *La vignetta come esercizio di percezione: Manuale di professionalizzazione dell'agire pedagogico.* Opladen: Barbara Budrich. https://doi.org/10.25656/01:26128

Agostini, E., Schratz, M., & Eloff, I. (2024). *Vignette Research. Research Methods.* London: Bloomsbury.

Baacke, D. (1996). Medienkompetenz als Netzwerk. Reichweite und Fokussierung eines Begriffs, der Konjunktur hat. M*edien praktisch, 20*, 4–10.

Caillois, R. (2001). *Man, Play and games* (M. Barash, Trans.). Urbana, Chicago: University of Illinois Press. (Original work published 1958).

Cohen, J. (2001). Defining identification: a theoretical look at the identification of audiences with media characters. *Mass Communication and Society*, *4*(3), 245–264.

Deci, E. L., & Ryan, R. M. (1993). Die Selbstbestimmungstheorie der Motivation und ihre Bedeutung für die Pädagogik. *Zeitschrift für Pädagogik, 39*, 223–228.

Duncker, L. (2010). Methodisch-systematisches Lernen im Kindergarten? Thesen zu einem schwierigen Balanceakt. In G. E. Schäfer, R. Staege, & K. Meiners (eds.), *Kinderwelten – Bildungswelten. Unterwegs zur Frühpädagogik* (pp. 26–37). Berlin: Cornelsen Scriptor.

Farné, R. (2020). Prefazione. In A. Ligabue, *Didattica ludica: Competenze in gioco* (pp. 9–12). Trento: Erickson.

Hardy, I., Stephan-Gramberg, S., & Jurecka, A. (2021). The use of scaffolding to promote preschool children's competencies of evidence-based reasoning. *Unterrichtswissenschaft, vol. 49*, 91–115. https://doi.org/10.1007/s42010-020-00094-4

Hauser, B. (2013). *Spielen. Frühes Lernen in Familie, Krippe und Kindergarten.* Stuttgart: Kohlhammer.

Heimlich, U. (2023). *Einführung in die Spielpädagogik* (4th ed.). Bad Heilbrunn: Klinkhardt.

Huizinga, J. (2023). *Versuch einer Bestimmung des Spielelements der Kultur* (A. Wunschel, Trans.). Paderborn: Brill Fink. (Original work published 1940).

Hunicke, R., LeBlanc, M., & Zubek, R. (2004). MDA: A Formal Approach to Game Design and Game Research. *Proceedings of the AAAI Workshop on Challenges in Game AI, 4*(1), 1722–1726. https://users.cs.northwestern.edu/~hunicke/MDA.pdf

Husserl, E. (2001). *Logical Investigations, vol.1.* (J. N. Findlay, Trans.). London: Routledge.

Klafki, W. (2007). *Neue Studien zur Bildungstheorie und Didaktik zeitgemäße Allgemeinbildung und kritisch-konstruktive Didaktik* (6th ed.). Weinheim, Basel: Beltz.

Laing, R. D. (1967). *The politics of experience.* New York: Pantheon Books.

Lippitz, W. (2019). Exemplarische Deskription (1984). Die Bedeutung der Phänomenologie für die erziehungswissenschaftliche Forschung. In M. Brinkmann (ed.), *Phänomenologische Erziehungswissenschaft von ihren Anfängen bis heute: Eine Anthologie* (pp. 315–336). Wiesbaden: Springer VS. https://doi.org/10.1007/978-3-658-17082-0

Merleau-Ponty, M. (2005). *Phenomenology of Perception.* London: Taylor and Francis. (Original work published 1945).

Meyer-Drawe, K. (2012). *Diskurse des Lernens* (2nd and rev. ed.). München: Fink.

Meyer-Drawe, K. (2005). Anfänge des Lernens. In D. Benner (ed.), *Erziehung – Bildung – Negativität* (= *Zeitschrift für Pädagogik. Beiheft 49*, pp. 24–37). Weinheim, Basel: Beltz. https://doi.org/10.25656/01:7782

Mian, S. (in press). Within and beyond Learning: Learning as a Responsive Event – Pedagogical Reflections and Didactic Implications through the Example of a Board Game. *Pedagogia e Vita, 83*(2).

Mian, S., & Agostini, E. (2025). Sensitization to the Other – The phenomenological vignette as a resonating body of sound. *Studium Educationis, XXVI*(1), 60–70. https://doi.org/10.7346/SE-012025-07

Mian, S., & Kansteiner, K. (2025). The Potential of Phenomenological Vignettes to Discover Play Experiences in a Game with Perspectives on Teacher Education and EduSpace Lernwerkstatt. *Formazione & insegnamento, 23*(2), 95–103. https://doi.org/10.7346/-fei-XXIII-02-25_11

Mogel, H. (2008). *Psychologie des Kinderspiels von den frühesten Spielen bis zum Computerspiel: die Bedeutung des Spiels als Lebensform des Kindes, seine Funktion und Wirksamkeit für die kindliche Entwicklung* (3rd rev. and expanded ed.). Berlin: Springer.

Putra, E., & Yanto, M. (2025). Classroom management: boosting student success – a meta-analysis review. *Cogent Education, 12*(1), 2458630. https://doi.org/10.1080/2331186X.2025.2458630

Schratz, M., Schwarz, J., & Westfall-Greiter, T. (2012). *Lernen als bildende Erfahrung. Vignetten in der Praxisforschung.* Innsbruck, Wien, Bozen: StudienVerlag.

Stieve, C. (2010). Diesseits und Jenseits des Konstruierens. Phänomenologisch-gestalttheoretische Ansätze zur leiblichen Präsenz der Dinge. In G. E. Schäfer, R. Staege (eds.), *Frühkindliche Lernprozesse verstehen. Ethnographische und phänomenologische Beiträge zur Bildungsforschung* (pp. 257–277). Weinheim, München: Juventa.

Thiele, R. (2020). Spielend lernen. Was macht ein gutes Lernspiel aus? In V. Mehringer, & W. Wiebke (eds.), *Spielzeug, Spiele und Spiele. Aktuelle Studien und Konzepte* (pp. 143-153), Wiesbaden: Springer.

Thielsch, M. T., & Wirth, M. (2017). Web-based annual reports at first contact: corporate image and aesthetics. *Technical Communication, 64* (4), 282-296.

Waldenfels, B. (2024). *The Birth of Ethos out of Pathos*. Tübingen: Mohr-Siebeck. https://doi.org/10.1628/978-3-16-163539-7

Weiß, G. (2020). *Spiel*. In G. Weiß & J. Zirfas (eds.), Handbuch Bildungs- und Erziehungsphilosophie (pp. 77–88). Wiesbaden: Springer VS. https://doi.org/10.1007/978-3-658-19004-0

Wolling, J., Quandt, Th., & Wimmer, J. (2008). Warum Computerspieler mit dem Computer spielen. In Th. Quandt, J. Wimmer, & J. Wolling (eds.), *Die Computerspieler. Studien zur Nutzung von Computergames* (pp. 13–21). Wiesbaden: VS Verlag für Sozialwissenschaften.

Zadra, C., & Mian, S. (2023). Catturare esperienze, sviluppare riflessione. La vignetta ad orientamento fenomenologico come pratica riflessiva. *Educational Reflective Practices, 13*(1), 190–205.

How to cite this paper: Mian, S., Kansteiner, K., Schumacher, S. (2025). Riflessioni Pedagogiche e Didattiche sull'Applicazione dell'Ambiente di Apprendimento Digitalmente Potenziato ActiveFloor per Bambini/e [Pedagogical and Didactical Reflections about the application of the digitally enhanced learning environment ActiveFloor for children]. *QTimes webmagazine*, anno XVII, n. 4, 195-208. Doi: https://doi.org/10.14668/QTimes_17414