

Digital Play-Based Learning.

A philosophical-pedagogical perspective on learning and playing in computer games.

Abstract:

A majority of investigations examine the potentials of computer games in enriching learning processes, however, only little research has been carried out in examining the role of irritations and disillusionments in digital games. It appears reasonable that educational game design focuses on the programming of well structured and entertaining games that support the player in his linear learning process until the defined teaching-targets are reached. In contrast to this understanding of learning and playing, an anthropological theory of playing, and a philosophical-pedagogical perspective on the process of learning will be investigated, opening up a new perspective on computer games. In providing insights into circulating and non-linear process of relearning and learning anew, combined with the spontaneous and unstructured dimension of play in games, a different concept of learning will be proposed: Digital Play-Based Learning. This multidisciplinary paper draws on game studies and educational theory to develop a concept for a novel understanding of learning based on playing games.

Keywords:

learning, games, educational theory, playing, new media literacy

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1. Introduction

In the last few years, that the potentials of computer games for learning and teaching have increasingly become a focus in scientific research and the computer industry. It is argued that computer games are a valuable tool to enrich learning. The idea behind using games to encourage teaching, may be as old as our habit to play games (cf. Schiller, 1795), but the target-oriented adoption of games in the context of learning reached a new level with the implementation of digital media. The vast majority of studies focuses on the entertainment aspects of playing games combined with new technologies and certain goals of teaching and training (cf. Mitchell & Savill-Smith, 2004). Only very few investigations have explored the role of errors, mistakes, and failures in learning software (cf. Kay, 2005) and computer games (cf. Schank, 1997). Therefore, most educational theories centre on the engaging force of digital media (cf. Jenkins 2006). In recent years this combination of playing and learning based on digital technology has been labelled “*Digital Game-Based Learning*” (Prensky, 2001).

On the one hand this new digitised way of learning based on the amusing effects of playing games opens up novel dimensions of teaching (cf. Filipczak, 1997; Gee, 2003; Prensky, 2001 and 2003), on the other hand, it remains questionable whether playing games can significantly enhance learning: “To turn learning into fun is to denigrate the two most important things we can do as humans: To teach. To learn.” (Stoll, 1999, p. 22). Within an anthropological theory of playing, and a philosophical-pedagogical perspective on the process of learning I will propose a new approach to the discussion centred on issues of digital games and learning.

Most concepts of *Digital Game-Based Learning* implicate a reduced understanding of learning processes and essentially restrict the fruitful aspects of playing, while other aspects such as the phenomenon of *relearning* or *learning anew* are largely overlooked.

Considering the dimension of inordinate, creative, innovative and free play within the structures of games, the concept of *Digital Play-Based Learning* will be developed. This kind of learning focuses on circular processes of learning and the play dimension of games (cf. Caillois, 1958). Furthermore the possibilities and limits of *Digital Play-Based Learning* for teaching and learning will be considered. The objective of this paper is not to dismiss *Digital Game-Based Learning*, but to give novel insights into learning based on playing.

2. Digital Game-Based Learning

The term “*Digital Game-Based Learning*” (DGBL), in the majority of studies referring to Marc Prensky’s book of the same title (2001) embrace „*any marriage of educational content and computer games.*“ (p. 145). Prensky points out that the process of learning is very much related to the learner’s motivation. In traditional educational institutions the enhancement of motivation for learning *something* is often reduced to a pressure to perform for *someone*: “More generally, students’ motives for learning are a mixture of intrinsic goals and extrinsic rewards, combined with psychological factors such as fear and need to please.” (Prensky, 2002, p. 1). Although academic learning implicates a high quality of meaningful content, the engagement of learners seems difficult to enhance. In contrast to that, computer games engage the player in a highly significant way, but – until now – in less substantive content. Given this, it may be concluded that *Digital Game-Based Learning* facilitates a reasonable symbioses of meaningful content (learning) and an engaging environment (games), transformed through digital media (Prensky, 2001, p. 146). Reasons as to why computer games engage learners were recently pointed out by Alice Mitchell and Carol Savill-Smith’s (2004) review of literature:

Computer games represent fantasies and follow a simple principle of winning or loosing, with instant, quick outcomes (Prensky, 2001; Roubidoux et al., 2002); They use aesthetic modelling and recognisable features to engage the learner’s attention (Poole, 2000) by stimulating the learner’s enjoyment with visual feedback (Bisson & Luckner, 1996); They

provide a complete and interactive playing environment and a immersive experience (Presky, 2001). Furthermore they open up different solutions and ways of solving problems (cf. Gee, 2003; Mitchell & Savill-Smith, 2004). On this basis it may be concluded that computer games implicate the potentials to engage the learner's attention. But does this activity effectively enrich learning? What understanding of learning does this digital panacea implicate? And how is *game* characterized as one that can be learnt from? In the following, two notions will be critically analysed and reflected: games (2.1) and learning (2.2).

2.1 What is a Game?

To begin with, what understanding of games can be found within the concept of learning based on games? In the early stages of development digital learning games were held in bad repute. The reason why learners in the last decades rejected games with arranged learning content was due to their unsatisfying gameplay and their simple linear structure. In these games, the structure of digital media was used to lead the user to a well defined goal - mostly in the form of written content. These so-called *games*, that made you practise vocabulary, maths or history, were (and still are) typically structured as "tell-tests" (Prensky, 2001, p. 71-72).

A much more progressive understanding of games and learning can be found in Marc Prensky's approach (cp. Prensky, 2001, 2002, 2003). Within his query on the engaging power of games, he differentiates between three dimensions of playing games: *fun*, *play* and *game*. Firstly, the dimension of *fun* refers to the relaxing and motivating aspects of playing and includes the dichotomy of "enjoyment and pleasure (good), and amusement and/or ridicule (bad)" (Prensky, 2002, p. 5). Secondly, the aspect of *play* in games, as investigated by the anthropologists Johan Huizenga (1956) and Roger Caillois (1958), implicates the free activity and the uncertain outcome of playing. Furthermore Rosemary Garris defines the playing of games as "voluntary, non-productive, and separate from the real world" (Garris et al, 2002, p. 452). Finally, *Games* restructure the play and fun dimension in "rules, goals and objectives, outcomes and feedback, conflict/competition/ challenge/opposition, interaction and representation or story" (Prensky, 2001, p. 119). Accordingly, games perform as "organized play" (119). On this basis, Prensky argues, that by combining the structure of games and the unstructured dimension of playing, the engagement of the gamer in his learning process becomes enhanced: "People play games because the process of game playing is engaging" (Prensky, 2002, p. 2). Therefore *Digital Game-Based Learning* deals with the question, of how to introduce game-play into education and learning. The next chapter offers insights into the underlying theory of learning in Prensky's approach.

2.2 Learning based on games

As mentioned, in learning games of the 20th Century play was often reduced to following instructions, and learning meant drill and practice. In these "tell-tests" (Prensky, 2001) the learner has to follow a clear target and the pleasure of playing is reduced to a minimum. The rationale of these kind of learning games can be found in Behaviourism (Thorndike, 1913), Cognitive Science (Gagne, 1985) and in other modern psychological theories of learning and instruction. The main problem underlying these learning and training games is not only their dysfunction (Schrage, 2006), but also their manipulative concealment of beliefs and strategies. This sort of teaching, negates independent thought, understanding and judgement, by transmitting content without allowing for the learner's critical reflection. It is more indoctrinating than instructional (cf. Snook, 1972). If new media is used to enhance the manipulation of the learning process, this problematic form of teaching can be considered as digital indoctrination or "e-indoctrination". The theory of learning in "E-indoctrination-Based Games will not be examined in this paper, but is still being used today in many e-learning

environments (cf. Mitgutsch, 2007). But how can a more sophisticated understanding of learning in games be developed?

Digital Game-Based Learning in the 21st Century (cf. Prensky, 2002) postulates a specific perspective on the process of human learning. While traditional theories of learning concentrate on the content of learning, and fathom learning under the condition of teaching (which goes back as far as Plato's *Menon*, cp. Mitgutsch & Sattler, 2007), today's typical theories focus on cognitive processes and try to locate acts of learning in the human brain (e. g. GOMS). Contrary to this, an understanding of learning based on games, asks the question of *how one learns what*. In addition to this, Prensky recommends a learner-centred perspective, which focuses on the learner's motivation to engage with a particular content. He defines learning as follows: "*Human Learning is the set of processes people employ, both consciously and unconsciously, to effect changes to their knowledge, capacities and/or beliefs*" (Prensky, 2003, p. 4).

In this understanding – which Prensky admits to being fragmentary – learning implicates several related and interrelated processes and an engagement with a learning object. Furthermore it can not be substituted, because it has to be done by the learner himself (in his mind) and it "involves not only 'knowledge' (facts, groups of facts, relationships between facts), and 'doing' (capacities tasks, skills and behaviours) but also 'beliefs' (theories, understanding of how and why things work or happen)" (p. 4). Furthermore Prensky stresses that the success of learning relates to the "type of material to be learned" (p. 4) and to the knowledge the learner has already achieved. In the typical group-oriented teaching situation criticised by Prensky, individual access to content by the learners can rarely be achieved, because learners' subjective learning habits are ignored.

The theory of *Digital Games-Based Learning* argues that gaming holds the ability to be completely learner-centred and to engage the learner's attention. On the whole, *Digital Game-Based Learning* focuses on learning based on the condition of the learner's motivation to engage with a certain type of content. However, it remains questionable if this reduction of the human process of learning on the learner's motivation is reasonable. To sum up, learning is understood as a set of linear processes that effect changes in the learner's knowledge, capacities and/or beliefs (cf. Prensky, 2001). What about knowledge that we are highly motivated to achieve, but that eludes us? Are knowledge, capacities and beliefs things we have a direct unobstructed access to, that we simply *employ*, or vice versa, do not things mostly happen *to us*, that we learn *from*? What about experiences that befall us, that employ *us*? And is learning in computer games limited to the content provided by the game designers? Questions such as these remain unanswered in the concept of *Digital Game-Based Learning*, but are essential to an extended understanding of learning. Therefore I will examine a philosophical perspective, that on first glance might seem not applicable to games, but on a second (closer) is very applicable to playing!

3. An educational theory of learning

Before entering the following discourse it seems necessary to indicate the theoretical leap that is going to be examined. Instead of reconsidering learning under the perspective of narrative structures (cp. Murray, 1997; Ryan, 2004), under a substitution to theories of playing (cp. Aarseth, 1997, 2004; Frasca, 2003) or related to questions of game-design and learner-motivation (Prensky, 2001, 2003) an philosophical approach to the phenomenon of learning will be undertaken. In contrast to a ludological, narratological or design-based perspective on learning, where learning is subordinate to playing games, firstly the process of learning shall be examined (3.1) and according to this, the act of playing will be reconsidered (3.2).

3.1 Learning anew

In present-day investigations learning is understood as a direct process in which knowledge and ability are appropriate. In this view learning is exclusively understood as a straight-lined, direct or indirect act of transferring knowledge and abilities from teachers to learners (cf. Budin, Swertz & Mitgutsch 2006). Nevertheless, some investigations focus on a so-called *negative dimension* of learning, which has been overlooked in the majority of studies (cf. Buck, 1989; Meyer-Drawe, 1982; Burgos, 2004; Mitgutsch & Sattler 2007). In this dimension learning is conceived as a “*process in which one’s experience of one’s own knowledge and ignorance, ability and inability plays a central role*” (Benner & English, 2004, p. 412). An insight into the meaning of the negativity of experience for learning can only be given by focussing on the execution of learning as a process of achieving experience. Learning in this respect indicates that expectations and prejudgements are confronted with unexpected resistance in the process of gaining experience. How can learning in this sense be defined?

The historical roots of theories of learning and negativity reach back to Aristotle’s theories of *epagoge* (often translated as induction) and can only be touched on briefly in this paper: Aristotle’s theory of learning is connected to his understanding of induction. *Epagoge* (or Induction) is the inductive and intuitive (Greek: *nous*) recognition of the *one* in the many, in the process of gaining experience. By recognizing the universal principles which are implicated in the particulars, one can proceed to the universal principles. For Aristotle, one’s experience arises from a particular experience to universal experience of causes through the process of induction (cp. Aristotle, *Metaphysics*). Learning in this ancient understanding is a process of ascending order of experiences.

Centuries later Francis Bacon reclaimed the superior force of negative instances in his theory of induction overlooked by Aristotle (cf. Bacon, 2000). Gaining experience is dependent on *negative instances* that help to correct incomplete pre-experiences and anticipations. Departing from Aristotle’s *epagoge*, Hans-Georg Gadamer states that the refutation of wrong generalisations through new experience is central to every process of experience. He argues that the negativity of experience has a certain productive meaning to the process of gaining experience. A new experience does not only lead to a realised disillusion, it gains “better knowledge through it” (Gadamer, 1998, p. 353).

The central aspects of Gadamer’s considerations about the negativity of experience are as follows: One experiences something new about an object (1), about the limitation of his prior anticipation (expectation) (2), about the limitation of one’s own consciousness (3) and finally one reaches a new horizon of consciousness as an experiencing subject (4). Based on Gadamer’s investigation, the educationalist Günther Buck has transformed Gadamer’s analysis of negativity and experience in educational discourse. In his book, “*Lernen und Erfahrung*” (1989) (learning and experience), he describes the relation between learning and experience as reciprocal and conditional. Learning is founded on experience and – vice versa – experience depends on learning. Günther Buck states that learners are able to boycott the process of learning by keeping a firm and dogmatic hold on their current pre-experience and knowledge. In this case, habits and familiarities turn against new experience. Günther Buck argues (with reference to Edmund Husserl) that every pre-experience is unspecific and therefore also the condition of the possibility for learning. If the learner’s anticipation of *something* is disillusioned, his knowledge of this object (1), of his former anticipation (2) and of his horizon (3) transforms. Learning from the productive negativity through experience manifests as an overcoming of dogmatic anticipations, and proceeds as a change of the horizon of experience. Buck calls this fundamental kind of learning “*umlernen*” (p. 42), a process of learning anew or relearning by negative instances. Therein, the experience of disillusion and the confrontation with your own anticipations and experiences are key moments. In conclusion, learning is a process of confrontation with resistant experience and knowledge that transforms the learners’ experience (1), their pre-experiences (2) and their knowledge (3).

While learning anew they relearn their former knowledge and have an experience of their own process of learning. But an experience of negatives instances does not automatically lead to a learning process. Have we not all experienced disillusionments that we did not learn from, that did not lead to a process of *relearning* or *learning anew*? Within Gadamer and Buck's understanding, learning appears to be dependent on negative instances, but it remains questionable, why in some places learning gathers momentum and in others it freezes.

In the 1980s the phenomenologist Käte Meyer-Drawe followed Günther Buck's analysis on learning. She showed that learning is essentially related to the "resistance of things" (Meyer-Drawe, 1996). To stimulate learning, the teacher must force the learner to the limits of their pre-judgments, their pre-experiences and their dogmatic beliefs (cf. Meyer-Drawe 1982, 1996; Benner & English, 2004). Furthermore, the philosopher Bernhard Waldenfels (2002) states, that every process of learning immediately opens up a large number of new pre-experiences, expectations and anticipations, that enrich further experiences. Furthermore, the learner does not *passively receive*, nor *actively gain* experiences, things *passionately* (greek: pathos) *move* him (cf. Mitgutsch & Sattler 2007).

To enrich learning, the instructor's task is to open up an un-dogmatic environment, which enables *passionate* experiences. The disappointment one experiences while learning, might feel like suffering, but it gains new experiences and gathers momentum in the learning process. But can learning – understood as *relearning* and *learning anew* – be enriched through games?

3.2 Learning anew based on games?

Returning to the theories of *Digital Game-Based Learning*, this negative understanding of learning seems unsuitable. Marc Prensky admits that his definition of learning omits aspects such as experience, improvement or permanence, because he assumes that whilst these factors are related, they are "not intrinsic to learning" (Prensky, 2003, p. 4). In direct opposition to the passionate dimension, learning based on games aims to throw off "the shackles of pain and suffering, which have accompanied it for so long" (Prensky, 2002, p. 4). *Digital Game-Based Learning* targets the overcoming of the pain of learning, by incorporating the enjoyment of games. At this point the limited perspective on the process of learning in the discourse of *Digital Game-Based Learning* becomes evident: Learning is not understood as a circular process of experiencing (relearning), but as an act of linear instruction of content (further learning). One might argue that even in the concept of *Digital Game-Based Learning* this circular and "negative" aspect is considered in the theories of "Learning by failure" (Schank, 1997 in: Prensky, 2001, p. 159). But in this respect, the learner's "mistakes" are exploited to immediately correct his actions or his assumption. In this sense, mistakes are reduced to a key figure for leading the player to the "correct" predetermined path in his game. The learner does achieve new knowledge about the correct path or the correct answers, but he barely forms a reflected experience about his pre-experiences; he does not *learn anew* or *relearn* by resisting experiences. In other words: He might correct his action, or achieve a given content, but the learner does not become aware of his own process of experience, of himself or his own restricted anticipations. Like the rat in the t-maze (Behaviourism) the player learns which path to follow through his mistakes, but he does not recognize the limits of his pre-experiences, the capacity of his process of learning.

By reconsidering this assumption, it may appear questionable whether circulating learning processes could ever be reached by digital games. How *learning anew* and *relearning* may necessarily be gained by playing will be examined in the next chapter. One might not learn anew by *games*, but by *playing*!

4. Learning based on play: Digital Play-Based Learning

If learning is understood as a circular process of gaining experience through negative instances, which confront the learner with his incomplete prejudgements and pre-experiences, a direct access by instructors or teachers appears impossible. This applies to games that structure the process of learning to a well defined goal (Tell-tests). It remains questionable whether games, that – as a matter of principle – are based on rules, goals, outcome and structure (cf. Huizinga, 1956) provide *relearning* or *learning anew*. How can highly structured environments like computer games enable an opened and essentially unstructured and circulating process of learning? The answer to this question lies in a specific human action that *games* try to structure: *playing*!

4.1 Play vs. Game?

In his expansion of Johan Huizinga's game theories (1956/1938) the French ludologist Roger Caillois postulates an essential differentiation between *play* (*paidia*) and *game* (*ludus*) (cf. Caillois 1982/1958). Roger Caillois' postulates *paidia* (*play*) and *ludus* (*game*) as the main principles that characterize games (cf. Schrammel & Mitgutsch, 2007). On this basis he defines *paidia* as a free, not obligatory, act, separated from any sanctions, and circumscribed only by limits of space and time. *Paidia* follows uncertain targets and remains essentially undetermined, as it performs as a spontaneous manifestation of the play instinct (cf. Caillois, 1982). This spontaneous act is accompanied by *ludus*, which confronts *paidia* with structures, rules, goals and limits and furthermore transform *paidia* into institutional forms of games. The structure of *ludus* enriches the act of *paidia* with competition, excitement and social entertainment. The ludologist Gonzalo Frasca recently proposed “‘paidea’ as an equivalent to the English noun ‘play’, and ‘ludu’ for the noun ‘game’” (Frasca, 1999). In conclusion, the notion of *play*, refers to the unstructured, spontaneous and free act subordinated to the institutional and obligatory structure of games (cf. Adamowsky, 2005).

While *Digital Game-Based Learning* focuses on the *game-dimension* of game-play, as rules, goals and structures, the *play-dimension* remains relatively untouched. Prensky for example, defines his idea of learning, based on the structure of games, not on an unstructured act of playing. He certainly refers to the theories of Huizinga and Caillois (cf. Prensky, 2001, p. 111-112), but only focuses on the game dimension and the practical implementation of learning content to games (cf. Leopold, 2007, p. 30). It is fairly certain that the reason for this may be found in the highly structured environments that game-design programs. The question that remains is, how can a computer game be designed, that on one hand opens up an environment for free and unstructured gameplay and on the other hand enriches the game with target oriented learning content? How can the structuring media of a computer be used to open up a learning process that remains opened and unstructured? How this kind of learning based on playing could be considered (and maybe realized) will be examined in the last step:

4.2 Learning based on play

Having discussed this understanding of learning, it is now possible to reassess initial thoughts on learning based on *play*. To contradict assumptions, that learning *anew* and *relearning* based on the unstructured act of playing can not be realized through computer games, a statement by James Paul Gee shall be mentioned. In Gee's introduction to his book “What video games have to teach us about learning and literacy” (2003) he illustrates his impressions after playing his first digital game:

“This game – and this turned out to be true of video games more generally – requires the player to learn and think in way in which I am not adept.[...] Oddly enough, then, confronting what was, for me, a new form of learning and thinking was both frustrating and life enhancing.” (Gee, 2003, p. 5)

What Gee articulates in this quotation prototypical for circulating *learning anew*, based on the play dimension of computer games. What Gee experienced by playing a game, was a change of his prior horizon of experiencing and learning. He learnt more than just a new content, he *relearnt* his own way of learning, about personal limits and potentials, about his desire to play and the power of frustration. And, what seems to be most important, he learnt about himself as a learning and experiencing subject, imbedded in a cultural environment. Furthermore it should be mentioned that this act of *Digital Play-Based Learning* was not based on a typical learning game, but on the game “The New Adventures of the Time Machine (DreamCatcher Interactive/ Cryo Interactive 2000).

This example might give an initial idea as to what learning based on playing looks like. In a related but different understanding Carlo Fabricatore stresses, that “new paradigms in educational game design are needed” (Fabricatore, 2000) that reconsider a wider examination of the connection between learning processes and computer games. He points out, that learning based on games, includes more than just the transport of content, but a whole virtual learning environment:

“In this sense, it is in first place important to understand that a virtual gaming environment is per se a learning environment, since it offers conditions free of any functional pressure and negative consequences, and constantly faces the player to situation that engender changes, thus involving her in an experience that demands learning and developing skills and abilities during each instance and repetition of the basic interactive cycle which the game-playing is based on.” (Fabricatore, 2000)

Fabricatore’s understanding of playing and learning opens up a new perspective on learning based on computer games. Although his concept of “edugaming” (Fabricatore, 2000) focuses more on the dimension of *game* rather than *play*, and restricts learning to an act of achieving knowledge via content (similar to Prensky), he recognizes the potential of virtual environments for learning. But *playing*-environments contain more potentials for learning, than simply enjoyment and learning content. Gonzalo Frasca reminds us of how game-environments can be understood, that focus on the *play* (or *paidea*) dimension of games:

“Paidea [play-based] videogames have no pre-designated goal. So, there is no ‘winning plot’, as in adventure videogames. The player has more freedom to determine her goals. As we have seen, as soon as the paidea player determines a goal with winning and losing rules, the activity may become a ludus [game].” (Frasca, 1999 [by the Author])

Learning based on a playing environment, which enables *learning anew* and *relearning*, does not directly determine the player’s learning path via goals and rules. It opens up a wide range of opportunities, and gives the learner the freedom to choose, and the possibility to reflect upon, experienced negative instances. Compared with James Paul Gee’s thirty-six learning principles in video games, *Digital Play-Based Learning* involves active and critical learning (Principle 1), the reflection of meta-levels of semiotic domains (principle 5), the gain of self-knowledge (Principle 9), the aspect of rethinking (Principle 15) via multiple routes (Principle 16) and the reflection of cultural models of principles and of learning itself (Principle 30 & 31) (cp. Gee, 2003). In a last step the idea of *Digital Play-Based Learning* will be assessed:

5. Conclusion

Digital Play-Based Learning is a phenomenon that refers to a nonlinear, but circulating, process of learning and the unstructured act of play in games. It can be characterized as an act of *learning anew* from *negative instances* experienced in an opened virtual learning environment. It aims to teach the learner about his prior horizon of experience and to relativize his prejudgments and his premature beliefs. Therefore, learning based on play does not only engage the learner by entertainment and challenge, but by confrontation and passion. This understanding of learning in games is not a substitution for *Digital Game-Based Learning*, but it focuses on a different aspect of learning and playing.

Learning based on *play* includes more than the transfer of content surrounded by an engaging entertaining environment. The virtual environment itself, with its own culture, its specific social aspects, its horizon of experiences, with its implicit knowledge and beliefs and with its drive to confront the learner's prior experiences, appears to be the vital key to enrich learning. It opens up a multitude of potentials that allow the player to experience unknown situations and experiment with situations that he would not have access to in his *normal* life. Learning based on the unstructured, spontaneous and free act of *play* (Caillois, 1958) uses the learner's experience of *negative instances* that confront him with resisting knowledge and new perspectives within his game-play. Instead of leading the learner to the correct path of achieving knowledge and true content (DGBL), the learner is forced to be a *player* that experiments without functional pressures of negative consequences or social sanctions. To support this uncontrollable way of learning, the *player* should be capable of reflecting upon and rethinking meta-levels of semiotic domains, models of game- and learning-cultures and predetermined goals that restrict his learning habits. Furthermore the learner should be enabled to understand the impact of media on our culture, beliefs and fields of knowledge (cf. Swertz, 2007). In this sense, the learner is challenged to develop a *new media literacy* that allows him to *play* within the limits of games and to rethink, reflect upon and relearn his actions in games. How this *new media literacy* can be arranged and how games can be designed that open a wider learning environment, appears to be a major task for the future of learning based on video games. *Digital Play-Based Learning* places an emphasis on aspects of *play*, *learning anew* and *relearning* which so far have not been considered educators or game designer.

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