Chapter 28
The Role of the Teacher in Game-Based Learning: A Review and Outlook

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Abstract This chapter looks at the role of the teacher in game-based learning to contribute to current understanding of the agentive role of the teacher in game-based learning. There is a current trend to use digital games as tool to engage students and to enhance the learning experience in the classroom; the game-based learning discussion mainly focused on how to empower students in the classroom. Thus, the objective of this chapter is to address the role of the teacher and the most dominant obstacles in game-based learning and teaching. The chapter will illuminate and review the multiple roles the teacher currently performs in game-based learning. Moreover, this chapter will draw on Goffman's frame analysis and teacher agency to demonstrate the implications when digital games are situated in an educational context. The chapter contends that instead of seeing the role of game-based learning to motivate and engage students, games should be viewed as an opportunity to teacher learning and empowerment, giving teachers a sense of ownership of game-based teaching and learning.

Keywords Game-based teaching • Game-based learning • Teacher agency • Goffman frame analysis • Game design • Digital games • Teacher role

28.1 Introduction

Recent scholars suggested that digital games in the classroom may be an ideal solution to engage students, to prepare current generations for the future challenges in the twenty-first century, and to bring education out of the twentieth century (Gee 2004, 2007; Kapp 2012; McGonigal 2011; Prensky 2001; Ramirez and Squire 2014; Shaffer 2007; Squire 2011; Steinkuehler et al. 2012). It is widely assumed that games can provide learners with engaging learning conditions for exploration, interaction, and knowledge creation (Louise et al. 2008). Cognitive learning theorists (Bruner 1962; Piaget 1951) support this idea by arguing that

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play-like activities promote intrinsic motivation, which enables deep learning as students find themselves spending more effort and time learning, as they enjoy the activity and use the learned more in the future (Malone 1981).

Yet more and more researchers (De Freitas 2007; Girard et al. 2013; Kapp 2012) are suggesting that we need more longitude studies that prove the effectiveness of game-based learning for learning. Moreover, an overlooked/marginalized element in the ecosystem of learning is the teacher. Teachers are seldom invited in the co-development of game-based learning solutions. Likewise, their role and participation is usually not considered in the actual game design, and research on the role of the teacher in game-based learning is still in its infancy (Chee et al. 2014; Hanghøj and Brund 2010; Magnussen 2007; Berg Marklund and Taylor 2015; Shah and Foster 2015; Ulicsak and Williamson 2010).

The aim of this chapter is to address the various obstacles teachers often face and the current roles the teacher facilitates in game-based learning. Hence, this chapter will firstly draw on existing research on the importance of addressing and integrating the teacher in game-based learning. Secondly, various surveys and studies will be used which examined the teacher's perspective on game-based learning, in order to derive main barriers teachers face when integrating digital games into their teaching. Thirdly, three empirical studies will be used to emphasize main challenges and to review current roles teachers perform during game-based learning sessions. By looking at these empirical studies, Goffman's frame analysis will be used to discuss the wider implications of situating digital games in an educational environment and how digital games, as any new policy or tool, also affect teacher's agency and sense of professional identity.

Lastly, the chapter ends with a discussion about game design and game literacy as part of teacher education and about the future design of digital games for learning/teaching. This research aims to contribute to the development of a better understanding of the role of the teacher in game-based learning and future design strategies of educational games.

28.2 The (Missing?) Role of the Teacher in Game-Based Learning

28.2.1 The Teacher as Key for Learning to Occur

John Dewey (1938), who can be seen as an advocate of the progressive education movement, suggested that education needs to be active and interactive as well as child centered (Mooney 2013). In regard to the role of the teacher, he suggested that the teacher should observe children to develop an understanding of what they need in order to be able to offer appropriate guidance. According to Dewey, appropriate guidance does require a high degree of teacher confidence, which means knowing the child and the child's needs to ensure that experimenting results in learning

experience (Mooney 2013). Hence, Dewey stated that appropriate guidance consists of the teacher's ability to provoke the mind of children by asking questions. Thus, Dewey already imagined the role of the teacher as very active in terms of their teaching and the relationship with their students.

If we look at Lev Vygotsky's (1978) concept of the zone of proximal development (ZPD for short) and the concept of scaffolding, we can project an even more active role than Dewey had imagined. The ZPD describes the distance between the most challenging task a child can achieve alone and with the help of peers, teachers, or adults. Vygotsky referred to the leveraging of the abilities of a child to achieve a more difficult task with the help of others, as scaffolding (1978). Thus in Vygotsky's opinion, good learning occurs when children cannot complete a challenging task on their own, but through scaffolding.

Therefore, in Vygotsky's eyes, the teacher designs her/his teaching in a way that allows a zone of proximal development. This implies that the teacher needs to be able to facilitate such a zone by not only designing the teaching in such way but also by actively providing guidance/mentoring to facilitate scaffolding.

More recently, Ken Bain (2004) investigated more than 70 college teachers, who were described by their student as the best teacher they ever had. The teachers were defined as having a strong impact on their students' mind-set, and some students stated that their teachers "changed their life." Bain discovered that the reason why those teachers could achieve such a positive impact on their students was due to the teacher's ability to show their students the beauty of profound learning and comprehension thereof, rather than bulimic learning (Bain 2004). Hence, these teachers were able to challenge their student's knowledge and showed them a way to find pleasure in learning. Moreover, Bain discovered that those teachers were able to create conditions for natural critical learning environments, in which learning takes place rather than simply "transmitting" knowledge (Bain 2004). This is of importance as those teachers were able to help them to find pleasure in learning, rather than seeing learning as an inconvenient necessity that is necessary for passing exams and progressing in life (Bain 2004). In such critical learning environments, students encountered "safe yet challenging conditions in which they can try, fail, receive feedback, and try again without facing a summative evaluation" (Bain 2004, p. 108).

Hattie's (2003) research about key variances in student achievements confirmed that the teacher has the most significant impact. The key variances on students' learning performance, after the student itself (50%), are not the school structure, peers, or class sizes; it is the teacher (30%) (Hattie 2003). Hattie further distinguishes between experienced and expert teachers, stating that the latter is able to:

- Identify essential representations of their subjects
- Guide learning through the use of classroom interactions
- Monitor learning and provide feedback
- Attend to affective attributes
- Influence student outcomes

Overall, the aforementioned literature highlights the role of the teacher as crucial, to create critical learning environments to promote deep and collaborative learning. Therefore, the role of the teacher in game-based learning needs to be crucial as well, which also means that game-based learning could be an opportunity to empower teaching and to create new meanings of the role of the teacher in the digital age.

28.2.2 Addressing the Role of the Teacher in GBL

It is the teacher who makes the difference in the classroom and who is the most influential factor on a student's learning performance and experience (Hattie 2003). However, the current game-based learning discussion underplays this crucial role (Hanghøj and Brund 2010; Shah and Foster 2015; Silseth 2012).

Recent scholars argue that teachers are key to the success of video games as tool to motivate students and promote deep learning (Kenny and Gunter 2011; Koh et al. 2012). Yet there are gaps in how the teacher can be empowered and supported. Teachers need to be provided with the necessary knowledge and skills teachers can integrate game-based learning effectively and efficiently in their classroom (Shah and Foster 2015; Silseth 2012).

Ulicsak and Williamson (2010) and Hanghøj and Brund (2010) suggested that it is important to start recognizing the role of the teacher in game-based learning, as teachers need to have a sense of ownership in order to be able to use games effectively. Therefore, it is suggested that "if the teacher does not take an active role when facilitating the game, and there is no purpose for using the game, then the learning will be ineffective" (Ulicsak and Williamson 2010, p. 39). Thus, Hanghøj argues that games need to be able to empower the current role of the teacher, which means to adapt to existing teaching practices, instead of requiring the teacher to adapt to game practices (Hanghøj and Brund 2010).

Watson et al. (2011) also emphasized the importance of the teacher being able to identify "teachable moments" during gameplay, which is yet another challenge experienced by many teachers due to their lack of knowledge and skills. However, this also highlights shortcomings of currently used games in game-based learning, as teachers have to adapt to game practices instead of vice versa. Furthermore, Eastwood and Sadler (2013) support Watson's argument by stating that it is of importance to provide guidance for teachers to make connection between the game and their teaching. Though Eastwood and Sandler also argue that this support and guidance needs to be of systematic nature, hence, schools and educational facilities need to provide the necessary professional development and tools to support teachers in acquiring the required knowledge and skills in order to effectively integrate games in the curriculum (Eastwood and Sadler 2013). Silseth (2012) underlined these arguments in her study, in which she documented the different roles teachers performed while using games for learning/teaching. Shah and Foster (2015) summarized the most pivotal roles including:

(a) Expert guide to help students making connections with the learning goals
(b) Facilitator of pedagogical approaches such as instruction, discussion, and observation to provide space for reflection and feedback
(c) Connector, to help students to see and understand the relevance of their acquired knowledge beyond the classroom

Teachers, as with any other digital technology for learning, are pivotal when it comes to meaningfully using games for teaching and learning. Hence, teachers, as the primary drivers for new educational innovations, have "... the potential to augment the effect of games on students' interdisciplinary knowledge construction and motivation to learn" (Shah and Foster 2015, p. 242).

At a panel discussion at the IDC 2004 Conference, Marvin Minsky and Alan Kay mentioned that children feel demotivated if teachers assign them something that they (teachers) don't do by themselves (Kestenbaum 2005). Hence, this indirectly signals disinterest which can result in disengagement. Moreover, Minsky and Kay also highlighted the importance of "learning by copying the way more knowledgeable and experienced people think and complete a task" (Hourcade 2008, pp. 284–285).

28.2.3 The Marginalized Role of the Teacher in the Design of GBL Applications

Teachers who are interested in game-based learning are often facing several challenges that make a meaningful and effective implementation of game-based learning in their classroom difficult. Several occurring challenges and barriers can be identified, when we look at several recent scholars (Kenny and Gunter 2011; Koh et al. 2012; Razak et al. 2012; Shapiro et al. 2014; Silseth 2012; Takeuchi and Vaala 2014; Ulicsak and Williamson 2010; Watson et al. 2011), who investigated game-based learning from a teacher's perspective and what barriers often hinder the integration of game-based learning. Thus, there is a strong body of evidence that suggests that:

- Teachers only have a limited time to prepare and play a game for game-based learning.
- Teachers feel uncertain about using games in the classroom due to their limited knowledge of digital games.
- Teachers have difficulties identifying appropriate assessments.
- Teachers have difficulties integrating video games effectively and efficiently in their classroom.
- Teachers have difficulties choosing appropriate games for teaching.
- Students have difficulties to connect the acquired knowledge in a game and real-world learning.
- There is a lack of support by the school/administration to support and enhance their competences in game-based learning.

- Poor technical infrastructure, inadequate resources, and high game or licensing costs make it difficult to meaningfully apply game-based learning.

Moreover, if we look more closely at several of the aforementioned studies (Shapiro et al. 2014; Takeuchi and Vaala 2014; Wastiau et al. 2009), we can identify a repeating pattern. The greatest barriers so far have been the insufficient time, high costs, lack of tech resources, difficulties finding games that fit curriculum, and not being sure how to integrate games in teacher's teaching. Therefore, it can be argued that these findings are a strong indicator that the role of the teacher in game-based learning has been marginalized/neglected when it comes to the development of game-based learning applications. Thus, I suggest that game developers need to not only include teachers in the development process but also design games in a way that teachers can easily adapt those games to their needs. Therefore, it is important to highlight Ehn and Kyng's (1987) view on participatory design, which emphasizes the importance of genuinely including important stakeholders in the development or design process of new tools for their environment. Hence, for developing novel game-based learning approaches for the classroom, the designer should not only include primary drivers in the design but also learn from and about them, to create genuinely novel and realistic innovations (Leinonen 2010).

28.2.4 Teacher Education and Professional Development in GBL

To enable an effective and meaningful integration of digital games for learning and teaching, we can argue that it will also require that schools and universities start to provide professional training and courses in game-based learning, as part of teacher's education. Yet, according to recent scholars (Franklin and Annetta 2011; Shah and Foster 2015), teacher education in game-based learning is still in its infancy. This is somewhat of a missed opportunity as a recent study by Kennedy-Clark et al. (2013) showed that teachers reported a positive shift in their ability to integrate ICT, the knowledge of games for learning, and the perception of how to integrate games into their teaching, by undertaking preparations, such as workshops, which focused on the integration of digital games for inquiry learning. Hence, a lack of knowledge on how to integrate games in teacher's teaching often leads to ineffective methods such as applying games via, e.g., trial and error (Kenny and Gunter 2011; Takeuchi and Vaala 2014). Consequently, scholars have argued that teacher education in game-based learning, as it counts for all kinds of new educational technologies/tools, will be pivotal in order to successfully and meaningfully use games as teaching and learning tool (Kenny and Gunter 2011; Koh et al. 2012; Shah and Foster 2015).

More recently, Shah and Foster (2015) have developed the GaNA (Game Network Analysis), which is a framework that aims to empower teachers by supporting them to enhance their competence, skills, and knowledge on game-based

learning. Even though the crucial role of the teacher has been widely overlooked in the game-based learning discussion and is still in its infancy (Shah and Foster 2015), this recent attempt shows that research begins to focus on how to empower the teacher in their classroom through tools or frameworks in order to meaningfully merge technology and education.

28.3 Emphasizing Challenges and Reviewing Current Roles of the Teacher in GBL

The previous section highlighted that the current games for learning discussion underplay the role of the teacher when using games in and for an educational context and purpose. Not only has the teacher been marginalized in the design process of game-based learning applications but also overlooked in the game-based learning research community (Bourgonjon and Hanghoi 2011; Chee et al. 2014; Magnussen 2007; Berg Marklund and Taylor 2015; Shah and Foster 2015).

Hence, we can derive two dominant obstacles from the previous section. Firstly, the teachers' role is barely addressed in the design process of games for learning. Secondly, teachers often lack of sufficient knowledge about digital games and game literacy to effectively implement games for learning and teaching.

In order to emphasize and further discuss these challenges, three empirical studies will be used to review the current roles of teachers in game-based learning. Additionally, Goffman's *Frame Analysis* (1974) will be used as theoretical tool to derive a better understanding of the implications when digital games are situated in an educational context.

The first study was conducted by Rikke Magnussen (2007), who investigated the several roles teachers performed while playing, with their students, the learning game *Homicide*. In this game children take over the role of forensic experts to solve a murder case, whereas teachers alternate between fictional roles and supervisors.

The second study was conducted by Björn Berg Marklund and Anna-Sofia Alklind Taylor (2015), who illustrated the many roles teachers performed when using, in this case, *Minecraft EDU* and the challenges, among others, technical practicalities, and teachers' lack of sufficient game literacy.

The third study was conducted by Yam San Chee, Swati Mehrotra, and Jing Chuan Ong (2014), who highlighted the challenges teachers face when attempting to integrate game-based learning into their teaching such as reconstructing their professional identity.

The aforementioned empirical studies are used, because they illustrate very well the most dominant obstacles of implementing games in an educational context and address current roles of teachers in game-based learning. Also, it is important to mention that the aforementioned studies are one of the rare (Chee et al. 2014; Shah and Foster 2015) examples of empirical studies on the practicalities of using games for learning and teachers' role in game-based learning. Hence, it should be

underlined that recent scholars (Bourgonjon and Hanghoi 2011; Chee et al. 2014; Berg Marklund and Taylor 2015; Björn Marklund 2014) stated that more emphasis should be laid on such studies, to develop a better understanding of game-based learning situations and for the future design of digital games for learning.

28.3.1 Goffman's Frame Analysis to Understand the Implications When Digital Games Are Situated in an Educational Context

When we look at the greater discourse around games as tool for learning, the concept of the magic circle is often used to describe one of the unique characteristics of games in relation to the learning experience. The magic circle was initially coined by Johan Huizinga (1949) and was then applied to digital games by Zimmerman and Salen (2004). The concept of the magic circle of a game describes "... where the game takes place. To play a game means entering into a magic circle, or perhaps creating one as a game begin ... the term magic circle is appropriate because there is in fact something genuinely magical that happens when a game begins" (2004, p. 95). Moreover, it was argued that the magic circle creates a new reality, separated from the ordinary life, based on the rules of the game and lived by the player (Copier 2007). Yet recent scholars criticized this concept (Consalvo 2009; Copier 2007; Crawford 2009) as it produces a misleading image of a magical and isolated place, which makes it inevitably difficult to understand what is really going on within such a space. The concept of the magic circle therefore should be arguably seen as a romantic conceptualization rather than an appropriate scientific theory. Thus, the concept of the magic circle should be seen as a design tool rather than a concept to use in the discourse around games and learning.

Consequently, if we look at Erving Goffman's (1974) *Frame Analysis*, we might be able to derive a much better understanding of "what is going on" when digital games are situated in an educational environment and of teachers' role in game-based learning.

In Goffman's book *Frame Analysis: An Essay on the Organization of Experience* (1974), he introduced a theoretical and methodical tool, the Frame Analysis, to understand our experiences in our daily life. Goffman argued that our experience is shaped by frames that determine how one structures our experiences and organize our activity. Concretely, Goffman's frame analysis helps participants to, simply put, understand "What is going on here?" in any particular situation. A frame is embedded in the social context, which shapes the frame by its rules, the norms, the possible roles, the expectations, etc., and is available to "... the social actors to make sense of any given situation or encounter" (Crawford 2009, p. 12). However, as Goffman argued, social encounters and interactions are clearly structured and work on the foundation of shared values, expected and accepted roles, patterns of behavior, and so forth. Social encounters and interactions are therefore somehow

limited to the social context and its commonly shared and agreed values, so not anything is possible. This can be illustrated based on the example of a boxing and street fight. If one witnessed a street fight, you would ideally try to settle the fight, call for help such as the police or ambulance to prevent further escalations and injuries. Yet, if one witnessed the same encounter, but this time the participants are wearing gloves and the fight takes place in a boxing ring within a stadium, one would switch to the role as spectator, who cheers for every successful punch. Hence, the nature of activity is the same, i.e., fighting, though the social context shapes the frame, which in this case helps the social actor to make sense of the given situation and act/behave accordingly.

The boundaries that define each frame are described as "membrane" (Goffman 1961) and can be understood similar to the function of cell membrane, which is to protect the cell from its surroundings. Yet, contrary to a cell membrane, the frame membrane should not be understood as active agent that actively "protects" a frame. Thus, the frame membrane can be seen as filter to separate rules, norms, possible roles, expectations, etc., which reinforces the understanding of a particular situation, from factors that conflict with a frame in a given social contact and ultimately break a frame and cause confusion in the social actor. If we apply the concept of a frame membrane to our aforementioned illustration, concretely to a boxing fight, then factors such as a monumental stadium, an entertaining commentator, light shows, like-minded peers, etc. would reinforce the frame of being in a boxing sport event and acting as a spectator. Though, if, e.g., the boxers suddenly decided to sit down and to play a game of chess or if classical music would play constantly in the background, then this would disturb the frame and break the membrane, which would lead to confusion.

It is important to highlight that Goffman doesn't see frames as engineered or created by social actors, but "... rather as pre-existing schema which they simply employ" (Crawford 2009, p. 13). This limits Goffman's frame analysis to a certain extent, as it can be argued that frames are not just pre-existing schemas, but can be also engineered by social actors for social actors. For instance, if we look at games and game experience, it can be suggested that game developers and game designer are playful frame engineers of their game. Hence, during gameplay players take over game-generated and designed roles in a designed context with its designed rules, behavior pattern, and expectations.

When people are engaged in games, they take over a playful frame and mind-set; hence, games play very well together with the membrane of such a frame as they promote a playful attitude and do not break the membrane. Well-designed games are therefore a very strong catalyst for a playful state, frame, and mind-set. However, if we look at games in an educational setting, we can derive certain problematic as it leads to an unavoidable clash of several frames (Fig. 28.1) and to factors that often break the membrane of a playful frame. The social context, its rules, norms, expected behavior, and roles of a school and classroom environment differ often very much to the ones of a game world. This also accounts for the role of the teacher and the one of a student within an educational environment. If the role within a game world and the role as a student and teacher are not coherent and there is no transition

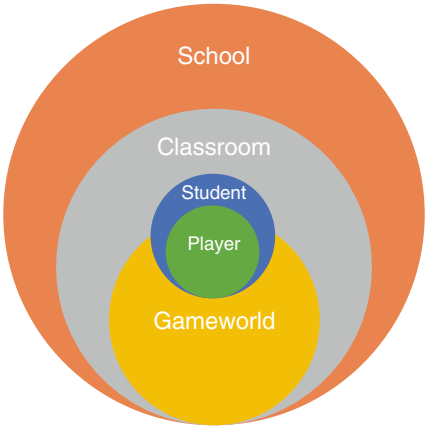

Fig. 28.1 Clash of frames – Each circle represents a frame that is embedded in a different social context, which shapes the frame by its rules, the norms, the possible roles, the expectations, and so forth. Hence, if the school and classroom environment does not interact coherently with the frame of a game world/player, then the usage of games for learning might not produce the desired effect and lead to several practical complications

between the game world and the classroom, then it can be argued that the usage of games for learning will not produce the desired effect and lead to several practical complications. The frame of a school and classroom environment is shaped by their social contexts, which expect different rules, norms, possible roles, and expectations from teachers and students than from, e.g., the social context and frame of a game world. Hence, using games in an educational environment, which often does not interact well with the membrane of a playful frame, will inevitably lead to a break of the membrane and can break a student's playful frame when engaged in a digital game.

Therefore, similar to a game designer, who is in a sense an engineer of playful frames, it can be proposed that a new meaning for the role of the teacher in game-based learning could be an engineer of playful frames that extends the game world to the classroom in order to create a playful knowledge loop between the game and the curriculum. Games should not only be seen as tool to support teacher's teaching but also empower teacher's professional identity as active and self-creating subjects (Lasky 2005). Therefore, extending the game world to the classroom means also to enable an active role of the teacher within the game world, e.g., as co-participant or game master. In addition, it can be proposed that games for educational purposes will have a better effect, when the game world and the classroom environment interact with each other coherently.

Ultimately, Goffman's frame analysis helps to underline and illustrate the complexity and implications when digital games are situated in an educational context, or any other context. Especially in an educational context, many variables need to be addressed and considered before using digital games for learning. Each variable within an educational context, e.g., the curriculum, classroom environment, technical infrastructure, teacher's and student's role in game-based learning, teacher's game literacy, and so forth, needs to be meaningfully connected with the playful frame of a game world. If the digital game and the playful frame do

not interact coherently with all factors and variables within an educational context, digital games for learning might not produce the desired value and practicality.

28.3.1.1 Study I: "Teacher Roles in Learning Games – When Games Become Situated in Schools" (Magnussen 2007)

This section emphasis will be laid on how the game design addresses the role of the teacher, how the lack of sufficient game literacy led to confusion or problems when performing the intended roles, and how such confusion can be better understood when applying Goffman's frame analysis.

Magnussen (2007) investigated the different roles teachers perform while students and teachers played the game *Homicide*, which was developed by the Learning Lab Denmark. In Homicide students take over the role of forensic experts whose mission is to solve several murder cases.

The game is organized in different investigative groups, which work on their individual cases and share their findings and information about their case in group meetings. During the meetings, the teacher performs the role of chief of police to encourage students to set new goals. After each meeting, the teacher unlocks new parts of the game. The game takes place primarily in the classroom and not on the computer. The interface of Homicide acts as extended database, which gives the student access to various information such as videotaped suspect interviews, pictures, maps, and information about evidence. Hence, students have to use the information available in the database, to plan their investigative process and to any execute investigative analysis in the school laboratory. Based on their findings, the groups come up with theories, which are presented to other groups and which end the game.

Homicide is not a commercially available game and was particularly developed as learning game, rather than for a non-educational purpose. Homicide can be seen as a good example of addressing the role of the teacher in the game design of the game. The teacher's role in the game was as following addressed:

> In the manual the teacher's role is primarily defined as a helper and initiator. The teacher has access to all the answers and should advise students by asking open questions that will help players focus and get back on track if they get stuck in the investigation process. The pupils can get the data they need from the 'police database' but the teacher is still in control of what is released at what point in the game. In the manual, the teacher is also encouraged to role-play the chief of investigation who advice the investigators, but let them take the decisions. The chief sets the agenda at the status meetings where all the groups reports to each other and he or she asks critical questions about the further investigation. The teachers should work on striking a balance where they play roles to a degree that feels natural to them instead of not playing roles at all. In the manual, the teachers are reminded that it can be disrupting for the pupils' identification with their roles in the game if they have to step out of the role in the game and into the 'pupils' role whenever they speak to the teacher. In the manual it is stressed that it is important to maintain the illusion throughout the game that the pupils are doing something important in solving the cases, this keeps up motivation for conducting the investigation process.

Hence, educators were intended to perform the role of a game master, who mediates the game, provides in-game support and guidance, and acts as collaborator. Albeit the teacher's was addressed in the game design and communicated to the educator through a manual, the implementation for the teachers was not as straightforward as the developers might have participated. Concretely, the developers and the author of this study received several comments from teachers that they need an overview of the game mechanics and game play itself, which the manual did not provide (Magnussen 2007). Thus, it was necessary to provide several 3-h introduction and training sessions in order to give a good overview of the role of the teacher within the game, the game itself, and the technical aspect (Magnussen 2007). Even though the role of the teacher was acknowledged and addressed in the game design, the actual implementation would have not been successful without providing introduction and training sessions by the author of the study. Therefore, it can be argued that the role of the teacher should not only be included in the game design but also in the game development process as participatory designers in order to design game-based learning application for the actual stakeholders, i.e., teachers. Moreover, this case illustrates very well how teachers need to adapt to the game instead of the other way around, which, again, brings forth one of the dominant obstacles teachers face when implementing games into their teaching: time and lack of sufficient knowledge.

Furthermore, one particular aspect of the above described agenda and role of the teacher in the game should be highlighted, that is, the importance of keeping up the illusion that the students play a game and that their roles within this game context are of importance. Magnussen observed one situation where the teacher fails to keep up this illusion and undermines the game on several levels (Magnussen 2007).

> In the specific situation, members of two groups were standing and sitting around a table in the common area where the workstations were. Two members – a girl and a boy – from different groups were using a brush to apply powder to the objects they had received from the teacher. There were a lot of children from the different groups around the table. These were the first two groups who were lifting fingerprints and members from all groups were interested in how it is done. The girl (girl1) had just finished brushing a hammer that she believed was the murder weapon. The fingerprints she was supposed to lift was not clear. In this example she was asking the teacher Thomas to take a look at the hammer she was testing for fingerprints. Thomas came over and stood beside her while they talked.
>
> **Girl 1**: Thomas could you come over here, please?
> **Thomas**: Yes
> **Girl 1**: I don't think this is clear. I can't even see it.
> **Girl 1**: You can see theirs' (their fingerprints) (points to the CD the other boy at the table is testing for fingerprints)
> **Thomas**: Try this instead, I know that . . . (low-voiced, inaudible)
> **Girl 1**: That's not ours
> **Thomas**: No, I know. It's some extra things I have if it didn't work. Girl 1 uncomprehending takes the plastic bag he gives her.
> Another girl (Girl 2) has been following the conversation between Thomas and Girl 1.
> **Girl 2** to **Thomas**: But what will that help?
> **Thomas**: The point here is that you must practice lifting fingerprints off objects.
> **Girl 1**: Should I just try here again? (she points to the hammer.)

Thomas: Yes, try again, but if you don't find anything, then try those (point to the objects he has just given her).
Girl 1: Yes, then I'll try those.
Thomas: Try and look at those too. (The objects he has given her.)
Girl 1: But this is not some of the things we get?

After this conversation, the girl (Girl 1) kept brushing the hammer, but ultimately tried her luck with one of the objects (a black disc) the teacher had given her. The main purpose of giving the black disc to the student was to practice the skill of lifting off fingerprints; however, since the disc itself was not part of the game, the girl ended about being confused how and if the fingerprints on the black disc are related to the game (Magnussen 2007).

Magnussen argued that this confusion would have not occurred if the teacher told the student to practice this skill in a non-game-based context, or in a non-playful frame. Moreover, the author used the concept of the magic circle of play and breaking the rules of the game as explanation for this confusion (Magnussen 2007). However, Goffman's frame analysis might be a more suitable tool to analyze this situation and to explain the student's confusion. When the girl tried to investigate the hammer and lift off the fingerprints to collect valuable evidence, she was seeing the situation through the frame of a professional police investigator; moreover, the frame of a professional investigator was embedded in the playful frame of a game. Therefore, when the teacher advised her to practice her skill with a black disc, which was not related to the game, the membrane of the playful frame as a professional police investigator broke and resulted in confusion. Thus, in this case keeping up the illusion of playing a game and having an important role in this game world failed because the teacher introduced an activity that was not compatible with the playful frame of a professional police investigator. Additionally, the item the teacher introduced was also not compatible with the playful frame of the game as it was unrelated to the game world.

This particular situation yields the fine balance, when games and roles are situated in an educational environment, between keeping the illusion of a game and of breaking the game frame at all. The teacher definitely wanted to help the kids in achieving their goal, though seemingly unimportant actions or items can lead to confusion and disengagement.

Consequently, situating digital games in an educational environment introduces various challenges. For example, in this study the teacher was not aware of how to meaningfully embed his practice advice in the game world, how to build a connection between the game and his advice, and how this might affect students' engagement with the game. Homicide is a good example of how to implement teachers' role in the game design. However, it can be proposed that this is not enough, as teachers also need to be able to adjust the game in such situations, which means that teachers need sufficient knowledge not only about game literacy but also about game design. Moreover, without the introduction and training sessions, the teachers would have had troubles to fully understand the role and the game, which suggests that when games for learning are designed, it is pivotal to integrate teachers as participatory designers as well.

28.3.1.2 Study II: "Teachers' Many Roles in Game-Based Learning Projects" (Berg Marklund and Alklind Taylor 2015)

In this section emphasis lies on the technical barriers and the time that is required for planning and organizing prior to the actual integration of the game in the classroom. Additionally, how seemingly small details within a game world can lead to disconnect and the many roles teachers need to perform during and to prepare for game-based learning sessions.

Berg Marklund and Alklind Taylor (2015) examined the different roles teachers need to perform when integrating digital games in their educational environment. Specifically, the authors introduced *Minecraft Edu,* which is an adapted version for educational purposes of the commercial pendant *Minecraft*, to integrating it as classroom activity. It is important to highlight that Minecraft's game design and core structure do not address the teachers' role, unlike, for instance, Homicide. Therefore, it does not create a meaning of the teachers' role within the game context. Thus, this study addresses very well the different roles teachers need to abstract and the challenges that come along when situating a digital game within an educational environment. We can divide the roles into two categories: firstly, the roles the teacher has to take on before the actual game session and, secondly, the actual roles teachers perform during the game sessions. Prior to roles during the classroom sessions, teachers need to take on the roles as technical administrator and game administrator, which involved tasks such as designing the game-based curriculum, establishing the infrastructure to enable gaming sessions and administrating tasks during and around gaming sessions (Berg Marklund and Alklind Taylor 2015).

Berg Marklund and Alklind Taylor argued that one dominant obstacle, for the integration of digital games in an educational environment, is the fact that digital games are just extremely "... laborious and resource intensive to use, and that there are few standards established to guide educators through the complex process of integrating games into their working environments" (Berg Marklund and Alklind Taylor 2015, p. 359). This becomes even more evident when we look at Table 28.1, which illustrates the necessary steps to integrate the game in an educational environment.

Moreover, the teachers involved and the researcher had to, prior to the actual implementation, plan, design, and adjust the curriculum to the game. Additionally, the process of the game integration heavily relied on the researchers, as the teachers admittedly lacked of sufficient game literacy, as illustrated below:

> When it came to integrating the game into the classrooms, the primary concerns for both cases were: the uncertainty of hardware reliability; the teachers' self-admitted low gaming- and technology literacy; and the limited amount of working hours they could feasibly spend on preparing for classroom gaming sessions. In the cases studied, the low game- and technology literacy of the teachers would make it highly unfeasible to start any type of game-based learning if it were not for a couple of ameliorating circumstances: the presence of the researcher, and the teachers' students themselves as both classes had several students who were very proficient with both computers and the used game. The process of game

Table 28.1 Overview of the necessary steps to integrate a digital game into an educational context

	Activities	7th grade classroom	5th grade classroom
Inventory	Take inventory of available hardware/resources		X
	Evaluate student profiles		X
	Examine curriculum goals	X	X
	Examine game software	X	X
	Establish educational goals to be served by the GBL project	X	X
	Pull in organizational support structures	X	X
Implementation	Prepare hardware		X
	Purchase game licenses	X	X
	Installation of software	X	X
	Prepare the classroom environment		X
	Prepare the game environments		X
Maintenance	Maintenance	X	X
	Setting up servers		X
	Preparing in-game examples	X	
	Saving games and handling backups		X
	Tech support during game sessions	X	X
	Closing down lessons		X
	Hardware maintenance		X
	Patching and software maintenance	X	X

Note: Retrieved from Berg Marklund and Alklind Taylor (2015). Teachers' Many Roles in Game-Based Learning Projects, p. 363

> integration thus relied primarily on the researcher, and when the researcher was not present the teachers could get some assistance from the more technology proficient students in the classes. – (Berg Marklund and Alklind Taylor 2015, p. 362)

This statement underlines once more the great obstacles teachers face when trying to integrate digital games into their teaching and also supports the evidence found in the listed studies earlier in this book chapter. It can be argued that this is a very strong indicator that currently used games for learning are simply not sufficiently designed for an educational environment, which means that factors such as the classroom, teachers' game literacy, available infrastructure, available time, and so forth are marginalized in the design of digital games for learning. However, this is also the case as many popular digital games for learning, such as Minecraft Edu, are based on the game design of commercial games, which ultimately do not take such elements into consideration.

Once the sessions had started, the authors observed several roles the teachers had to perform during the gameplay:

The teacher as gaming tutor, who guides and supports students' gaming experience, similar to a game master.

The teacher as authority and enforcer of educational modes of play, who guide students with an advanced level of game literacy and gaming experience, toward "... productive collaborations with their classmates" (Berg Marklund and Alklind Taylor 2015, p. 364). This is of importance as previous studies (Frank 2011) have shown that students, who are more proficient players, tend to shift their focus toward mastery of the game goals and game mechanics, instead of engaging with the subject matter objectives.

The teacher as subject matter anchor, who tries to connect the game world to the subject matter objectives, or creating a knowledge loop between the digital game word and the real-world learning environment.

The role as subject matter anchor will be now particularly reviewed, as the authors of this study observed one of a commonly occurring challenge when digital games are situated in an educational environment. Precisely, for this reason, teachers often have difficulties to bridge the game content with the actual subject matter objectives in the curriculum (Berg Marklund and Alklind Taylor 2015), or creating a knowledge loop between real-world and digital game world learning environments. Ergo, if the game is not specifically designed to teach objectives that match the curriculum with "... high level of authenticity and fidelity, the task falls on the teacher to draw connections between the game content and the subject matter" (Berg Marklund and Alklind Taylor 2015, p. 365).

This becomes even more challenging when the game content does not entirely fit with the subject matter as the transcript illustrated in Fig. 28.2.

[Julie and Louise, two inexperienced players, are building part of a monastery, they want a bookshelf in their building (it's a building where they would be thematically appropriate), so they place one down, a brief silence follows, and the following exchange takes place]
Louise: A little bit too colourful, right?
[...]
Julie: Let's remove them.
Louise: Yeah.
They go quiet, mouse clicks are heard, the teacher comes up to the group
Teacher: Why did you remove them?
Louise: It looked a bit weird.
Julie: Yes.
Teacher: A little bit too modern?
Julie and Louise: Yeah.
Teacher: Well, there are modern-looking book spines in there, but you can try to imagine that they're the type of books they would have back then.

Fig. 28.2 Excerpt from fifth-grade classroom transcript, which illustrates clashes between game content and subject matter (Retrieved from Berg Marklund and Alklind Taylor (2015). Teachers' Many Roles in Game-Based Learning Projects, p. 365)

In the above example, the visual game content clashed with the subject matter (medieval history). Compared to the role of teacher in study 1, the teacher here was not instructed to maintain the illusion of the game world throughout the entire session. Moreover, if we look at this example using Goffman's frame analysis, we can derive a better understanding of the problematic in this situation. This time it was the game content that triggered a disconnect or a break in the frame membrane of the students. Minecraft Edu was used for medieval history, ergo, the subject matter objectives and the frame the students took over was aligned toward medieval times. What happened here was that the game world of Minecraft Edu was embedded in a medieval frame, yet the subject matter objectives and the game content were not completely coherent. In this situation the students experienced a disconnection between the real-world and the digital game world learning environment. Moreover, such seemingly small details can cause students having troubles "... seeing past small disconnects between game content and the subject matter" (Berg Marklund and Alklind Taylor 2015, p. 365). As earlier mentioned, the teacher was neither instructed nor informed to maintain the illusion or how to best connect the game content with its real-world counterpart. In this situation the teacher advised the students that they should try to pretend that this modern-looking counterpart represents a medieval bookshelf. This example illustrates once again the fine balance between real-world and a digital game world learning environment, the complexity of situating digital games in an educational environment, and how easily a playful frame can be broken and lead to disconnect or confusion.

For these abovementioned reasons, it can be argued that besides integrating teachers as participatory designer in game-based learning applications, it is also essential to provide training and constructions on how to connect and combine the real-world and digital game world learning environment. Consequently, it can be suggested that it is pivotal to equip and provide training for educators in game literacy and game design for educational purposes in order to enable teacher to integrate games into their teaching more effectively.

Before we look at the third study, teacher agency and the sense of professional development will be introduced in order to illuminate how new school reforms and tools affect teacher's identity and sense of professional identity.

28.3.2 Teacher Agency and the Sense of Professional Development

Sue Lasky (2005) argued that little is known about how new school reforms and policies, which also introduce new tools, affect teacher's identity and experience. Moreover, it was stated that teacher's professional identity was often challenged by and was in conflict with new introduced policies that were accompanied with a new curriculum or assessment techniques (Lasky 2005; Vähäsantanen 2013). The introduction of new policies and tools was often followed by new identities that were

in conflict with teacher's existing identity. Additionally, new tools, curriculum, and new classroom assessments often challenged and got in conflict with teacher's belief about how to teach (Lasky 2005).

A post-structural approach to agency will help us to underline the importance of teacher agency, identity, and relationship to their students, which sees the teacher as "... active and self-creating within processes of becoming, acting in work practices and interacting with other actors, despite being bound up with especially power relations and discursive practices" (Vähäsantanen et al. 2009, p. 4). Therefore, it is vital to involve and address teachers in school reforms and the implementation of new policies, to foster teacher's identity and to not constrain teacher agency as active subjects within new reform contexts. Teachers who experienced a conflict between their existing and suggested identity in a reform context felt that their professional identity was threatened (Vähäsantanen 2013). Thus, they were not able to influence the situation, because they were not able to actively negotiate the context of their work. Another important aspect is the nature of interaction between teachers and students, which can be constrained and hindered by new reforms and tools (Lasky 2005). According to Lasky (2005), the teachers' sense of purpose and identity, besides teaching the curriculum and academic skills, was greatly informed by their ability to connect with their students and by being an integral part of their student's safety net of support. Moreover, teachers reported that their job satisfaction greatly derives from "... their interaction with students and the feeling that they had some kind of positive influence on student's academic, social and emotional development" (Lasky 2005, p. 906). Furthermore, students showed more interest in the subject being taught when the teacher was able to connect with their students. Also, being able to establish a trusting and respectful relationship with their students was suggested as a crucial factor for learning to occur (Lasky 2005). Yet, teachers often struggled to maintain such a relationship, as new policies and tools constrained teacher's identity and sense of purpose (Lasky 2005).

Arguably, digital games for learning and teaching can be an opportunity to empower a teacher's existing professional identity, so they become comfortable with and gain ownership over game-based learning. Moreover, it is pivotal to foster teacher's existing sense of purpose, agency, and professional identity in a digital age, by facilitating spaces and tools that allow teachers to be an active and self-creating subject within novel contexts. Lastly, it can be suggested that game-based learning should not only empower teacher's existing professional identity but also foster the relationship with their students in a digital age, entailing joint meaning making and knowledge construction between educators and learners.

28.3.2.1 Study III: "Facilitating Dialog in the Game-Based Learning Classroom: Teacher Challenges Reconstructing Professional Identity" (Chee et al. 2014)

In this section emphasis is laid on the challenges teachers face when trying to facilitate student dialogue and how teacher's professional identity was challenged

when implementing game-based learning into their teaching and how they dealt with (re)constructing their teacher identity (Chee et al. 2014).

Hence, Chee et al. (2014) investigated teacher's capacity to establish game-based learning dialogic facilitation with their students, using the mobile game *Statecraft X* in conjunction with the Statecraft X curriculum. The curriculum, which addresses the topic "principle of governance," is based on the game Statecraft X and targeted for social studies taken by 15-year-olds.

Chee et al. argued that in previous studies teachers had reported that they had difficulties learning how to facilitate student dialogue when applying game-based learning, without any support from their school leadership, professional training, or preparations (Chee et al. 2014). In this study, teachers had the support from their school's leadership in addition to several professional development workshops, which introduced them to the concept of dialogic facilitation with game-based learning. Yet, Chee et al. clearly argued that:

> Like learning to swim, enacting an unfamiliar pedagogical role in the classroom constitutes a performance of teaching. The challenge is not about knowing what to do but being actually able to do it . . . Thus, learning some subject domain, Y, is not equivalent to learning about Y (just as learning swimming is not equivalent to learning about swimming). Consequently, no amount of lecturing, questioning, discussion, or self-study can adequately prepare a teacher for enacting game-based dialogic facilitation in front of, and with, students. A teacher's capacity develops with practice over time. Representational modes of learning, based predominantly on language, lead to passive and inert outcomes. They cannot deliver what teachers need: the capacity for enactive performance. (Chee et al. 2014, p. 304)

This illustrates well that time is one of the biggest issues when teachers try to integrate digital games into their teaching, which underlines the reality of the practicality of game-based learning. Thus, even if teachers are prepared, prior to the actual implementation of games into their teaching, with workshops and professional developments, so they develop game literacy and an understanding of the concept behind game-based learning, it is no guarantee that they will ultimately be able to actually use game-based learning effectively without sufficient practice. Additionally, similar to previous studies, teachers often do not have such support, such as researchers who introduce teachers to the digital game and how to best introduce the game into the classroom and teaching.

Another big issue, which teachers face in the game-based learning context, is the fear of not knowing and the feeling of "letting their students down," because "... they are unable to rise quickly to the standard of professional performance needed" (Chee et al. 2014, p. 307). This is because digital games for learning come along with a variety of new teaching practices and demand from teachers to "think on their feet" at all the time (Chee et al. 2014). In this study some teachers expressed that they felt overwhelmed when they suddenly need to prepare, besides the projector screen and the whiteboard in a linear fashion, also several additional materials related to the digital game (Chee et al. 2014). Hence, the digital game Statecraft X in conjunction with the Statecraft X curriculum challenged teacher's existing identity and their way of preparing the lesson and how to teach. This becomes even more evident when we look at particular teacher statement, who had to overcome old/existing teaching habits.

The above excerpt underlines how new tools in addition with a new curriculum can or often challenge and get in conflict with teacher's beliefs on how to teach or teaching habits.

> When asked about the challenges she faced enacting the Statecraft X curriculum, Adele spoke of the difficulty "of really being a facilitator rather than the traditional 'imparting of knowledge'" that she was accustomed to. She added, "I think I am still used to the habit of talking and talking and talking and talking. Yeah." In a more reflective moment, Pauline also shared:
>
> **And in fact sometimes because you are so used to doing things a certain way, and then you are very comfortable yet you are confident in that … it is what you are good at but because of that, it hinders you and then you have certain blind spots.**
>
> Later, Pauline added:
>
> **Yeah we are always prepared with PowerPoint slides and we are … And even if there is a discussion we know where to always go back to. And I think being used to that. That is a hindrance that I need to get rid of.** (Chee et al. 2014, p. 308)

As earlier mentioned, teachers are often confronted with the fear of now knowing when integrating digital games in their teaching. Teachers fear that students would know more about the digital game used or game literacy in general, which would challenge their position as teacher who possesses subject knowledge and undermines their position in the classroom as knowledge authority. The example of a teacher below shows a positive response to this, when the power relation between the teacher and student was challenged, as she was willing to bring herself down to the same level of the students and become a facilitator.

> …. initially as I you know, started as a fresh beginning teacher, it's really like okay, a teacher um doing the teaching. And um … it's more of top down because I'm the one having all the subject knowledge content. I have all the information and I know that … I clearly know that my students do not have access to all these. So I feel that I have an advantage over my students …. So I feel I have the upper hand. But you know as I do this um Statecraft X project, I find that it is … Okay, I [laughingly with emphasis:] descend to be of the same level as the student whereby I find myself learning a lot from the students and they are definitely in the capacity to teach me. And in fact, some of them they might even know more than me. And from a teacher, I become a facilitator. And at the same time, I am also a learner. So I'm of the same level as the students … (Chee et al. 2014, p. 310)

The same teacher also stated that it was very important for her to build a rapport and good relationship with their students, which supports Lasky's (2005) findings, which suggested that teachers found it crucial to build a healthy relationship with their students for learning to occur. However, it is of importance to note that many teachers have struggles to "let go" of having the upper hand due to their content knowledge, as Chee stated that teachers who "feel that their professional identity demands the maintenance of high power distance, especially in Asian cultures, wrestle with the dilemma of striking a practical balance between school norms and pedagogical requirements" (Chee et al. 2014, p. 311).

Introducing digital games in conjunction with a new curriculum into teaching often challenges teacher's professional identity and existing relationships and roles in the classroom. This is very important to understand in order to develop a holistic view on game-based learning and the complexity of the many contexts and variables

involved and affected. Though, as Chee also suggested, digital games like Statecraft X are an opportunity to redefine teacher's relationship with their students. It is also an opportunity to reduce the teacher-student power gap in order to open up dialogue and to give students an active voice within the classroom, so that "*...productive learning can take place*" (Chee et al. 2014, p. 311).

28.4 Discussion

28.4.1 A Culture of Participation – The Teacher as Designer of Playful Frames

Instead of focusing on how to develop educational games for the classroom, I suggest we should focus on how we can facilitate a teacher culture of participation (Fischer 2014), in which "... not every participant must contribute, but all participants must have opportunities to contribute when they want to" (Fischer 2014, p. 201). In this sense, a culture of participation moves toward actors who actively contribute as designer in personal meaningful activities, instead of just passively consuming (Fischer 2002). Consequently, we should strive toward equipping teachers with (game) design thinking and models, knowledge, and skills that enable teachers to become active agents within novel contexts, such as game-based learning and engineers of playful frames. Therefore, the anticipated development of a participatory design model, similar to the approach of "Edukata" by Toikkanen et al. (2015) who developed a participatory design model with teachers for creating learning activities in ICT school, envisages to create *templates*, which extend the game world of existing game-based learning applications to the classroom, and *playful tools*. Such a template envisages creating a playful knowledge loop between the real-world and the digital game world learning environment, which means expanding the game world to and blend it with the classroom. This will give teachers the opportunity to be a self-creating and an active agent in the context of game-based learning and would allow teachers to develop personal comfort with and ownership over game-based learning applications. The playful tools aim to be teacher-created tools, in digital or non-digital form, such as a set of cards, board games, playful design challenges that turn the classroom into a game, etc., to foster design thinking, creativity, playfulness, and twenty-first-century skills in the classroom.

That is to say that instead of designing another digital game for learning/teaching, we should see digital technology and games as an opportunity to empower teachers and to create new meanings of the role of the teacher in a digital age. Thus, the teacher is someone who is able to design learning environments that respond to students' holistic learning lives (Kumpulainen and Sefton-Green 2014) and creates situations where creativity, playful learning, and knowledge co-creation can flourish. Therefore, this participatory design model envisages empowering educators through resources that facilitate playful and game design thinking. Firstly, so they develop

personal comfort with and ownership over game-based learning. Secondly, so they are able to create (playful and gameful) design challenges and solutions, which they can integrate into their teaching.

28.4.2 Game Design Thinking and Game Literacy as Part of Teacher Education

It will be pivotal to make courses on game design, game literacy, and the usage of digital games in an educational context, part of teacher education and professional development. However, it is important to underline that these courses should be only optional for teachers who are interested in the usage of digital games for learning. This is important as it should be argued that digital games are just one of many tools that can enhance teaching and should not be seen as the one and only tool to enhance teaching and learning. Digital games for learning are, as so many other tools, an opportunity to enhance teaching, though educators, without sufficient knowledge and training, will and have difficulties (Chee et al. 2014; Magnussen 2007; Björn Marklund 2014; Shah and Foster 2015) integrating digital games in their teaching and the classroom. As Chee (2014) argued, it won't be enough to just know about digital games and prepare teachers through short lectures, workshops, or discussions for the usage of digital games in their classroom. Similar to any sport, where it is a big difference if you learn a sport or if you learn *about* a particular sport, it will require a lot of practice and training to enable game-based learning effectively.

Thus, all three empirical studies underlined that without previous instructions and the presence of the researchers, teachers would have had difficulties to integrate the game into their teaching. Moreover, every student plays differently and has a different approach to playing, and even some students have never played a digital game at all. Consequently, teachers need to be adequately trained and prepared to manage the various ad hoc situations that emerge during game-based learning and need to be able to create a connection between the digital game world and the subject matter.

Ultimately, it should be argued that in order to harness the full potential of digital games for teaching and learning, it will be crucial to give teachers the opportunity to receive sufficient support by their school, through professional long-term training and by offering courses on game design and the usage of digital games for teaching in teacher education.

28.5 Conclusion

This chapter provides an overview of the role of the teacher in game-based learning and a summary of the most dominant obstacles teachers face when trying to integrate digital games for learning into their teaching, by examining the importance of the

teacher for learning to occur, by looking at various studies to derive the main barriers teachers face when integrating digital games into their teaching, and by using three empirical studies to address and to emphasize the most dominant challenges and current roles teachers perform during game-based learning. For the empirical studies, the chapter drew on Goffman's frame analysis and how new policies and tools can affect teacher agency and the sense of professional identity, to illustrate various implications and the complexity when digital games are situated in an educational context.

This research argues that the crucial role of the teachers has been widely neglected or marginalized in the game-based learning discussion. Research on the role of the teacher in game-based learning is still in its infancy, and it lacks of empirical studies that address the role of the teacher and the practicalities when situating digital games in an educational environment. Moreover, the role of the teacher has been also widely neglected in the game design for digital games for learning, be it as co-developer/designer in the design process of game-based learning applications or as active role in a digital game for the classroom. The chapter contends that instead of seeing the role of game-based learning to motivate and engage students, games should also be viewed as an opportunity to teacher learning and empowerment, giving teachers a sense of ownership of teaching and learning. This chapter proposed a participatory design model for teachers in order to move toward a culture of participation and, therefore, empower teacher to become active agents within novel context and engineers of playful frames. This chapter proposed one possible meaning of the role of the teacher in a digital age as meta/game designer of their own classroom.

Lastly, it will be necessary to offer sufficient support for teachers who are interested in the usage of digital games for learning, by providing long-term professional training and by providing courses on game design (thinking) and game literacy in teacher education.

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