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## **'But this isn't school': Exploring tensions in the intersection between school and leisure activities in classroom game design**

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**Abstract:** While there are several positive outcomes from implementing game design in a formal learning context, there are also challenges that have to be considered in order to improve game-based learning. This is explored in the article, using the concepts of *activity frames* and *stancetaking*, focusing on the social organization of the game design activity. Building on video data from one 6th grade class and one 7th grade class designing computer games based on their social studies curriculum, this article shows that tensions arise when students fail to agree on what the activity they are doing is really about: The academic content and what students commonly perceive as school activities, or a game design activity informed by their leisure time. The main argument is that the students position themselves as *students*, *game designers* or *characters*, and that this may cause tensions in the students' social interactions.

**Keywords:** classroom game design; game-based learning; activity frames; stancetaking

### **1. Introduction**

In a 6th grade classroom in Norway students are sitting in groups designing computer games about the Middle Ages. Alvin and Mathias are writing the dialogue between the player character and one of the non-player characters when their teacher, Katherine, sits down at their work table and comments on the activity on the screen.

- |   |           |   |
|---|-----------|---|
| 1 | Katherine | Capital D (.) capital D                             |
| 2 | Alvin     | But it isn't school now                             |
| 3 | Katherine | Yes this is school this is <u>absolutely</u> school |
| 4 | Alvin     | Yes (.) I <u>know</u> that                          |

This episode shows the ambiguity of classroom game design – is it perceived as a school activity or not, and are school and leisure activities in opposition to each other? While several positive outcomes from including computer games in the educational system have been demonstrated (see for example Ke 2009), there are also challenges, as taking an activity from elementary school students' leisure time and into a formal learning environment might challenge the established norms and implicit rules of what learning in a classroom should be like. According to Squire (2005), bringing computer games with commercial qualities into the classroom can create problems as many students fail to understand the purpose of the activity, even though other students may find it highly motivating. This complements Jenkins' (2006) argument that the successes of young people's interest-driven leisure activities do not necessarily occur when brought into the classroom.

The differences between formal learning activities and leisure activities might contribute to these challenges, as game-based learning takes place in the intersection of this dichotomy. On a similar note, a study by Lantz-Andersson, Vigmo, and Bowen (2016) showed that students who used social media as a learning activity in the classroom found it challenging to understand how the task should be framed, as the activity draws on students' leisure activities but is conducted in a school context. Digital technologies challenge the traditional views of learning on which formal schooling has been based (Säljö 2010), as schools have often favoured print-based literacies over the visual and often computer-mediated worlds that young people are used to from their out-of-school spaces (Jewitt 2006; Squire 2006). Often, digital technologies are taken into the classroom without considering how educational practices are shaped by the traditional learning resources that are already established in the classroom, such as pencils, notebooks and blackboards (Sørensen 2009, 190).

Game-based learning is a field that has rapidly increased the last few years (Boyle et al. 2016), and in the present article, the term is used to refer to learning from both *playing* and *making* games for learning (Kafai 2006). When it comes to game-based learning, the students' own perceptions of computer games for learning are often not considered to a sufficient extent when deciding how computer games should be implemented into the classroom (Beavis, Muspratt, and Thompson 2015). This is a challenge, as understanding the students' experiences is necessary to use games for classroom learning in an effective way (Beavis, Muspratt, and Thompson 2015, 22). There may also be challenges for the teachers, as the dynamics between students and teachers are different from ordinary classroom teaching: While the leadership roles between students and teachers are usually fixed in a formal learning context (Jenkins 2006), this relationship differs in interest-driven communities – here, young people might become the experts, including those who are not necessarily seen as good students in a school setting (Jenkins, Ito, and boyd 2016).

The use of educational technology has often been praised (Selwyn 2016), but the perceived benefits and challenges of introducing games in a school context are not understood well enough (Bate, MacNish, and Males 2014). As noted by Selwyn (2016, 442), there is a need to focus on the experiences of the users of educational technology, such as students and teachers, to understand the often less talked about, challenging aspects of using educational technology in the classroom. The aim of the present article is to understand these challenges from the perspective of the students themselves. The focus is on the tensions that arise between the students participating in the game design activities in the classroom and explore the following: What characterizes these tensions, and how do these tensions unfold while the students are designing games based on their social studies curriculum?

## **2. Gaming activities: Leisure and learning**

Playing computer games is an important part of young people's leisure time, both in Norway and worldwide (A. I. Wang 2011; Entertainment Software Association 2016), and might be a possible way of bridging young people's interests and academic learning (e.g., Ito et al. 2013). In Norway, 96% of boys and 76% of girls play digital games (Barne-, ungdoms- og familiedirektoratet, 2016). Indeed, children and young people today are not only consumers of digital media, some are also active *producers* of game-related media content. They are members of game-oriented communities, producing new media content, such as modding computer games, collaborating in guilds to solve challenges in online games, writing blog posts, creating podcasts and discussing

gaming experiences (Jenkins et al. 2009). Young people's participation in fan-based online communities has not only provided positive educational outcomes, such as increased writing skills from writing fan-fiction (Ito et al., 2013; Jenkins, 2006), but also civic engagement (see for example The Harry Potter Alliance: Ito et al., 2013; The Harry Potter Alliance, 2015). While not all young people are producers of media content, these digital, participatory communities are examples of interest-driven learning occurring outside of institutional contexts (Greenhow and Lewin 2016; Hillman and Säljö 2016).

Links between *making* and *learning* have been suggested by researchers, many of whom draw on Papert's constructionist ideas (Papert 1980; Papert and Harel 1991). Constructionism states that learning is most effective when a learner is engaged in producing an external artefact, and when the activity is considered meaningful by the learner (Papert and Harel 1991). These ideas have been central in the *maker movement* (see e.g., Hatch 2014), which originates from out-of-school activities but also presents opportunities for learning through making in a formal learning environment. The maker movement is thus said to blur the divide between formal and informal learning, and has the potential to "democratize access to the discourses of power that accompany becoming producers of artifacts" (Halverson and Sheridan 2014, 500).

One way that the potential of learning through making can be reached is by *designing computer games*, which software such as *Scratch* (MIT Media Lab 2017) and *Kodu* (Microsoft Research 2017) have made accessible. While learning from *playing* games is more common, learning through *creating* games allows students construct "new relationships with knowledge" in the process (Kafai 2006, 38). This idea is consistent with Hillman and Säljö (2016), who noted that learning using digital resources may "challenge simple notions of learning as a reproduction of what exists, and they simultaneously pave the way for conceptions of learning that emphasize tool-mediated collaboration, innovation and a performative understanding of what it means to know" (p. 308). Furthermore, game design might be a key to learning what has been called 21<sup>st</sup>-century skills, such as systemic thinking, specialist language, and meta-level reflection on these literacy skills (Salen 2007), in addition to developing collaboration skills, being part of a community based on similar interests and developing lasting engagement (Peppler and Kafai 2007b, 375). Understanding how to create new media is necessary for young people to critically participate in the current media culture (Peppler and Kafai 2007a, 150). However, and as noted by Squire (2008), the educational outcomes of game-based learning are not inevitable. Denham and Guyotte (2017) noted the importance of cultivating critical game makers to promote learning from making games, which should be considered when game design is used for pedagogical purposes.

Classroom game design may also face challenges which often occur when new technology is brought into the classroom. Among these challenges are ensuring teacher agency, dealing with outside expectations about which type of learning activities should be in a classroom, and curriculum requirements (Kimber and Wyatt-Smith 2006). In Norway, digital media should be used in all subjects, and digital skills are considered a basic skill in the national curriculum (Norwegian Directorate for Education and Training 2012). The social studies curriculum even states that students should be able to search for information, explore websites, critically assess sources, and make their own multimedia products (Utdanningsdirektoratet 2013). While Norway is highly ranked in Europe regarding the extent of ICT use and infrastructure (Søby 2013; EU 2013), utilizing the full potential of digital technologies in the classroom has been challenging (Guðmundsdóttir et al. 2014; Søby 2013). Despite these challenges, reports have demonstrated an

interest in learning from making digital media products in schools, such as from designing computer games (e.g., The Royal Society 2012; Kjällander, Åkerfeldt, and Petersen 2016).

This integration requires a deep understanding of the *challenges* of classroom game design, and additional research on how curriculum-based game design can be integrated in the classroom has been called for (Robertson and Good 2005, 65). Therefore, this article aims to explore how tensions in classroom game design unfold through the detailed study of interaction.

### **3. Activity frames and stancetaking in collaborative game design**

This article will employ the following core concepts to explore the tensions arising in the students' game-design activity: *Activity frames*, to understand how participants perceive the activity that is currently taking place, and *stancetaking*, to understand how the students orient towards each other and the activity within these frames. Combining these concepts is seen as a useful way to not only understand how the students make sense of the activity they are participating in, which might account for the tensions occurring in the game design process, but also to obtain a more detailed understanding of *how* these tensions are made relevant in the students' interactions in the game design process.

#### **3.1 Activity frames**

When analyzing social interaction, a core point is often to understand what the participants themselves perceive as important in the interactions (e.g., Melander and Sahlström 2010). *Frames*, defined by Goffman as 'principles of organization which govern events – at least social ones – and our subjective involvement in them' (Goffman 1974, 10–11), is a way of understanding how people make sense of what is going on within social interactions, and therefore which rules and norms govern the current activity. A key part of activity frames is *participation*, which here is seen as 'actions demonstrating forms of involvement performed by parties within evolving structures of talk' (C. Goodwin and Goodwin 2004, 222). Embodied interactions such as gaze, gesture and how participants orient their bodies are also considered, as well as the social, cultural and material structures in the environment in which the actions occur (C. Goodwin and Goodwin 2004, 241). How participants together are constructing, changing or sustaining arrangements of action and the context in which this takes place should be examined (C. Goodwin and Goodwin 2004, 239–40).

According to Fine (1982), frame analysis might be well suited for research on games due to the social conventions established by a game. The concepts utilized by Fine for researching gameplay will in this article be used to analyse the students' *game design* activities. *Engrossment*, which can be seen as involvement or being 'carried away into something' (Goffman 1974, 347), is a key characteristic of the game experience as people might become engrossed in the game world, voluntarily shifting between different frames (Fine 1982). Fine focuses on three levels of meaning in his analysis (Fine 1982, 186): Usually, people will be positioned in what is called the *primary framework*, which is what most people will call their common, everyday life, with a common sense understanding of events. When participating in a game, however, they will become *players* where their activities are shaped by the socially established rules of the gameplay. While engrossed in the game, they can even shift to the level of meaning where they act as the *characters* they are playing as (Fine 1982). Analytically, this is especially interesting as frames are seen as *dynamic* and shifting: Through a process of keying, a transformation that 'may

alter only slightly the activity thus transformed, but it utterly changes what it is a participant would say was going on' (Goffman 1974, 45), people can switch from their primary framework to the frame of player or character. As Fine (1982) points out, this can lead to tensions and misunderstandings when people are not positioned within the same frame, as these frames suggest how an activity is interpreted. For example, if a person is asked about his or her age during the gameplay, she might respond with her age in real life, instead of the age of the game character she is playing as (example from Fine, 1982). Frequent frame switching is also common in classrooms, where the students dynamically change between different activity frames (Aarsand 2008; Silseth and Arnseth 2016), and might change their positions as learners triggered by the different learning resources available to them (Silseth and Arnseth 2016).

### 3.2 Stancetaking

How participants position themselves within activities can be described by means of the term *stancetaking*, that is, how they take stances on a statement, a participant's action or an object. While the term *stance* has been used broadly and in different ways by researchers, Englebretson (2007, 6) has suggested general themes with respect to how stancetaking is perceived in discourse analysis, stating that a stance: 1) Can be physical (embodied interaction), personal (attitude or beliefs) or moral; 2) Can be observed and interpreted by other people; 3) Is conducted within interaction; 4) Is indexical, 'evoking aspects of the broader sociocultural framework or physical context in which it occurs' (6); 5) Has consequences for the involved parties (6-7).

To understand *how* this stancetaking occurs, this article will utilize the definition provided by Du Bois (2007): 'Stance is a public act by a social actor, achieved dialogically through overt communicative means, of simultaneously evaluating objects, positioning subjects (self and others), and aligning with other subjects, with respect to any salient dimension of the sociocultural field' (163). This can be explained through an analytical framework called the *stance triangle* (Du Bois 2007, 164), which presents the different components of taking a stance, a *stance act*, and how these components are connected. First, the stance act consists of two participants, called *first subject* and *second subject*, as well as a *shared stance object*, or what the participants orient towards. Second, the stance triangle shows the different actions required in taking a stance: Evaluation, positioning and alignment. A person will *evaluate* the shared stance object, orienting towards it and making up one's mind about the characteristics of that object. Based on this evaluation, the person might *position* oneself or others in relation to the stance object. A person can, for example, position oneself through an *affective stance act* like saying 'I'm glad', or an *epistemic stance act* which can be either verbal, like saying 'I understand', or non-verbal like nodding or shaking one's head (Du Bois 2007, 143–44). This is followed by a process of *alignment* between participants – do the participants agree or disagree, and to what extent? (Du Bois 2007, 143–44). The context of the stance act is significant and the analyst should be able to answer *who* the participants are and *what* they are speaking about, in addition to what stance the speaker is responding to (Du Bois 2007).

While stancetaking is often associated with spoken words, C. Goodwin (2007) suggests that stances can also be displayed through embodied interaction seen in how participants align towards each other. When participants cooperate, or fail to cooperate according to what is expected of them within the established participation framework, they might take stances that are publicly visible (C. Goodwin 2007). In this article, seeing stancetaking as displayed both through

dialogue and embodied interaction is considered significant for understanding the tensions occurring in the students' game design activities.

#### 4. Methodology

This article is informed by data that was collected from a school in the eastern part of Norway, where the students designed computer games based on four key history topics in the Norwegian social studies curriculum: the Renaissance, the great explorers, the Middle Ages, and the Viking Age. The students had been working on these topics prior to the game design project, and the teachers emphasized that creating games about these subjects could help the students learn more about these topics.

Due to a lack of learning resources that fit the intended task and target audience of the project, a website with video tutorials, written step-by-step instructions, and challenges was developed by the author. These learning resources focused on teaching such game design concepts as character development, building the game world, storytelling, and playtesting, and provided practical instructions on how to design a game using the *RPG Maker VX Ace* tool (Enterbrain 2016). The teachers of the participating classes could review and comment on the learning resources before they were used in the classroom. While this research project followed a focused ethnography methodology (Knoblauch 2013), this stage of the research project was inspired by a design-based research approach, as learning resources were designed and implemented in the classroom for the sake of the project (e.g., Reimann 2011). These learning resources remained the same in all stages of the research project. However, experiences drawn from each stage of the data collection informed how the data was collected in the next stage (see e.g., F. Wang and Hannafin 2005). Changes were made to how the camera was placed, as well as changes in the role of the researcher from observer to participant observer, as the students would often ask for assistance with using the software.

Utilizing the developed learning resources, one 6th grade class and one 7th grade class with students aged 11 and 12 were observed during three stages of data collection. First, an observation session was conducted during an ordinary class lecture, where the topic of the students' computer game design was introduced. In this stage, data was collected through observation notes; important focal points for the observation included the students' group dynamics, the use of resources such as textbooks and craft equipment, and the layout of the classroom, as this informed the design of subsequent stages of the study. In the second stage of data collection, each class spent two days working in pairs or groups of three to design computer games that were related to the curricular topic which was introduced to them in the first stage. In the third stage, which occurred two months after the two-day game design period, the students designed a game on a curricular topic again, but this time during a one-day game design session, as the students already knew how to use the tool and basic game design concepts. Although the games made by the students were not formally assessed by the teachers, the teachers commented on the students' games during the game design process. The students were also instructed to comment on each other's games during the playtesting stage.

Video data was collected using three video cameras during the second and third stages of this research project. Two of the cameras were stationary, recording the interaction and computer screen of a three-member target group, and one camera was hand-held and used to capture classroom interactions from other student groups. The total recorded video data from the three cameras was around 75 hours, with approximately 30 hours of screen data which was viewed and

analysed alongside the interactional data from the target group. The video data was then processed in different stages. First, a content log was created, which included narrative summaries of sequences that occurred (e.g., Derry et al., 2010), as well as rough transcriptions and keywords from interactions that seemed significant in the data material. When organizing the data, *sensitizing concepts* (Bowen 2006) were utilized. Sensitizing concepts guide the researcher while drawing attention to specific features of social interaction, and were based on the observation notes and the theoretical and analytical framework of the research project. The analysis of the excerpts focused on the social organization of the game design activity and how it was produced and sustained by the participants (e.g., Francis and Hester 2004; Melander and Sahlström 2010).

The excerpts in the present article reveal different aspects of a recurring pattern in the data material: situations where tensions and ambiguities between school and leisure activities arose when students designed games. These tensions were apparent from the beginning of data collection and were seen in all stages of the game design process, from the initial creation of the game story to the playtest. These tensions were not always present, as the students could create a joint focus of attention on the task through discussions and negotiation. When organizing the data, however, it was clear that episodes characterized by tensions were common and recurring among both the 6th grade and 7th grade students.

The episode referenced at the beginning of this article was observed on the second day of the game design process, while the episodes presented in the analyses occurred on the final day of designing games. The episodes were selected based on recurring patterns of the students taking on different positions in the activity, and they show different but common aspects of these tensions. The excerpts were transcribed using a modified version of Jeffersonian transcript notations (Appendix 1) and then translated into English. The drawings are based on screenshots from the video data, and are included to indicate how non-verbal interactions such as pointing, gazing, and using resources occurred.

## **5. Tensions in classroom game design**

The students who participated in this research project used digital media both at home and in school, and sometimes these activities would influence each other. At home, they played games like *Minecraft*, *FIFA* or *Grand Theft Auto*, usually every day or a couple of times a week. They talked about the games at school, sometimes using this talk to form social bonds based on common game preferences. They used computers at home to do their homework, or sometimes the computers at school to do activities not related to their schoolwork. Sometimes the students created stories using the computer in their spare time, and would often use the internet to get information about new things or talk to their peers. One of the students had tried to make his own computer game prior to the research project.

During the six days of the game design that informed this article, tensions arose between students who oriented towards the activity mainly from one of two positions: As informed by their leisure activities, often participating in the activity with a playful attitude and drawing inspiration from popular culture and gaming practices, or seeing the activity as mainly being informed by what they considered to be the norms and values of the classroom, often focusing on what they had learned about the topic previously in class, using the textbook as a starting point, or emphasizing that the game they were making should be historically correct.

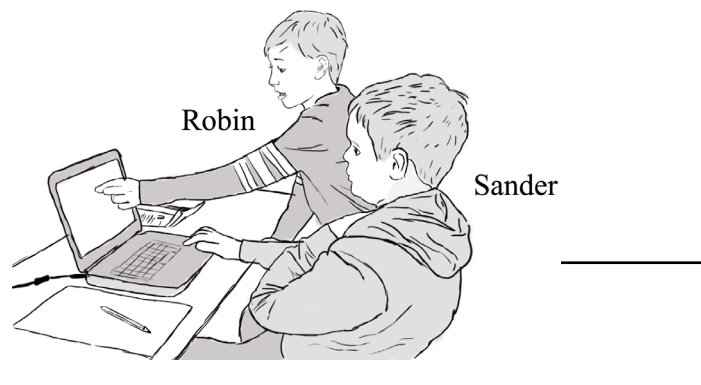
### 5.1 Guarding the boundaries of school activities

A recurring event in the data material was disagreement over what was considered acceptable to include in the computer games, indicating what the students considered as valid or invalid knowledge in a school context. When one group of students discovered how to add zombies to the game, the class was quickly divided into those who applauded the students' discovery, and those who did not think zombies belonged in the game at all. Sometimes, it was more ambiguous when it came to what could be included in the game or not – while the students did not think that sea monsters actually *existed* during the Middle Ages, perhaps they could be included as people *believed in* sea monsters during this time period? Attempting to add pubs to the game world was a recurring topic with different outcomes for the students in this class: While Scott argued in favour of making pubs using textbook knowledge, stating that 'we have to make beer, because beer was really important in the Middle Ages [...] If they didn't make beer, they could be put in jail', Marcus was quickly stopped by Samantha when attempting to do the same thing: 'We don't have time to be fooling around!'. Simon added a pub to their group's game, but it did not last very long: 'It's not a pub anymore (.) Marion wouldn't let me. Now, it's a house'. The following excerpt reveals how the students position themselves within different activity frames based on what they consider to be valid knowledge and actions within a school context.

The 7th grade class has been working for one day designing computer games related to a curricular topic: The Renaissance. Now, they are getting close to the end of the school day. Sander has been practising his game design skills at home after he was first introduced to the game design software in class two months earlier, and now he is showing his classmate Robin the game that he has created together with Sally and Mia. Sally is standing in the background, watching the boys.

#### Excerpt 1. Participants: Robin, Sander and Sally

1 Robin



- Hey (.) see how tiny it is ((*leaning forward and pointing at the screen*)) really tiny (.) and inside (.) just walk inside (.) and just PHOW ((*throwing his arms to the side and upwards*))
- 2 Sander ((*pressing the keyboard arrows and moving the game character into a house on the screen*)) (h)yes but
- 3 Robin the enormous there on the outside=
- 4 Sander =I'll show you something else (.) watch ((*moving the character on the screen*)) (.) here (.) and then I'll go (.) here↑
- 5 Robin Wow=
- 6 Sander =And then you see that there↑ and then you see inside here↑ ((*moving the character through the house on the screen*)) (.) and then you see the



bedroom is there (.) oh  
 7 Robin What are you doing?  
 8 Sander ((*continuing to move the character around in the house*)) (xxx) The  
 kitchen (.)  
 9 Robin Crazy  
 10 Sander Everything is inside that [bui-  
 11 Robin [That house is enormous  
 12 Sander Oh  
 13 Robin You know it's the old days they didn't have such big houses in the old  
 days  
 14 Sander Ye::es  
 15 Robin No(h)o:o  
 16 Sally ((*leaning towards the boys*)) Hear that? ((*smiling*)) (.) they didn't have big  
 houses in the [old days  
 17 Sander [Nah-nah-nah-nah-nah  
 18 Robin (Hear that↑) nah-nah-nah-nah-nah

Sander now continues to show the game to Robin, showing him the inside of a church that he has made, which includes an organ that Robin asks him to play. He also shows a large, empty room which Robin refers to as 'space', before he moves the character back to the main game world. He starts singing in a dark voice when navigating the game character.

25 Robin You're only fooling around  
 26 Sander But that's fun (1.0) e::eh (3.0) wow↑  
 27 Robin Eh Sander if you think that looks nice  
 28 Sander Yes  
 29 Robin Go to bed  
 30 Sander ((*laughing*)) (.) It didn't look that bad?

This excerpt shows how the students take different stances in relation to what they consider to be important aspects of the activity. It is clear that the students have different perceptions of exactly what kind of activity they are participating in, and therefore how Sander's designed game world should be evaluated.

Robin states that the inside of the room that Sander has made is way too big compared to what it looks like on the outside (lines 1 and 3), accompanying his utterance by throwing his arms to his side and upwards when saying 'just walk inside (.) and just PHOW' (line 1), where adding a gesture might emphasize the point he is trying to make (C. Goodwin 2000). Sander then shows Robin what he has created in the game world, showing him the inside of the house, including the bedroom and the kitchen (lines 4 to 8). Thereby, he orients towards the activity as *game design*, where producing the game world is in the foreground. But Robin keeps talking about how enormous the house is (line 11), and comments about the house that Sander has designed in light of the fact that they did not have large houses in 'the old days', the Renaissance. He evaluates the game world Sander has created using school knowledge and historical facts as a point of reference, and positions himself as someone who orients more towards the activity as informed by what is more commonly perceived as classroom activities.

Sally then responds to Robin's utterance by stepping into the conversation, physically placing herself closer to the other participants. She aligns with Robin when she says 'Hear that? They

didn't have big houses in the old days' (line 16). Robin and Sally are taking *epistemic stances*, seen clearly in Robin's utterance 'You know it's the old days, they didn't have such big houses in the old days' and Sally's 'Hear that? (.) they didn't have big houses in the old days'. Here, they are not only expressing their attitude to knowledge (Kärkkäinen 2006), displaying their own knowledge about buildings in the Renaissance, but also implying that this is something that Robin should know ('You know it's the old days') and now should take into account ('Hear that?'). While the exact function of 'you know' might differ in various contexts (Fox Tree and Schrock 2002), it is commonly used when the speaker wants the addressee to come to the same conclusion as the speaker – it 'invites the addressee to recognize both the relevance and the implications of the utterance marked with *you know*' (Jucker and Smith 1998, 194). In this case, it is clear that Sally and Robin expect Sander to know that they did not have large houses in the Renaissance, and he should take this into account when designing the games.

A stance can indicate the attitudes and values of the stancetaker, which is often described as a *moral stance* (Englebretson 2007, 10), and here this is used to describe what the students value and see as the correct way to behave in the activity they are participating in. Moreover, it could be argued that Sally and Robin emphasize that what they are doing is a *school activity*, and not an activity where they can design whatever they want without considering the subject's learning objectives. They expect Sander to see it in the same way (lines 13-16). This is further seen towards the end of the excerpt, where Robin confronts Sander with the fact that he is 'only fooling around' (line 25). Here, Sander's game world is evaluated not only in terms of how correctly it has been made according to what they have learned about the Renaissance, but also in relation to the value of the activity itself.

When Sander responds to Robin's 'only fooling around' comment with 'But that's fun', the ambiguous nature of game design, being in the intersection between school and leisure activities, is even clearer. The differences are emphasized in the next part of the excerpt with Robin saying: 'Eh Sander if you think that looks nice [...] Go to bed' (line 27 and 29), with 'go to bed' being a term with a meaning similar to 'give it a rest'. Sander laughs, then disaligns with Robin and states that he himself does not think it looks that bad (line 30).

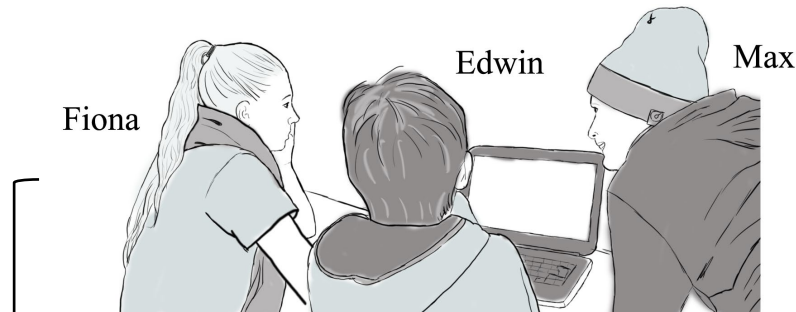
The core argument of this analysis is the following: When taking game design into the classroom, tensions might arise between what can be seen as the main goal of the activity from a school perspective, which is to *learn something* about the topic they are working on, and the *way that this is conducted*, through designing games, an activity using a medium that many young people know from their leisure activities. In this example, this tension changes the dynamics of the participation, creating two main positions, each with a different focus on what the activity is about: *Students* like Robin and Sally, emphasizing that the games should be correct representations of the curricular topics they are portraying, and *game designers* like Sander, where the main focus is on creating and designing. It is no longer a given what is to be considered valid knowledge in the game design activity the students are participating in – knowledge typically associated with young people's out-of-school practices, or what is considered to be commonly valued knowledge in a school context. By disaligning with Sander, Robin and Sally are guarding the borders of what learning activities in the classroom should be like.

## 5.2 Frame switching

The previous excerpt showed how tensions arise in the game design activity because the participants position themselves as either students or game designers, where tensions arise as students guard the boundaries of what a school activity should be like. It emphasized the dichotomy of the informal learning practices of the students' leisure activities and the established learning traditions in a school context. But the students would also position both themselves and each other as *characters* in the game they were making. When one of the student groups added a Renaissance quiz to their game, the name of one of the students in the group, Simon, was added as an alternative to the question 'Who shaped the dome of the St. Peter Basilica?' together with Michelangelo and da Vinci. When Fiona, Max and Edwin had been working for a while on their game, Max stated that 'everything was about Fiona', referring to Fiona as one of the main characters in the game they had made. The following excerpt shows one example of *positioning as characters* as the students become engrossed in the game design experience. The 7th graders Edwin, Fiona and Max are developing the story and dialogue for their game about the Renaissance. Fiona has the textbook in front of her, while Edwin is in front of the keyboard. Max is looking at the screen with Edwin.

### Excerpt 2. Participants: Fiona, Max and Edwin

- 1 Fiona ((*looking up from the textbook*)) well (.) for example that (.) he is talking to people↑(.) (xxx) I agree with you (.) and goes to the Pope (.) and then we make a castle or something like that (.) then he goes down and then talks to the Pope or something like that (.) and if you don't agree you'll be put in jail (.) and then (.) if you touch some guy or another you'll die ((*shifting her gaze towards Max*))
- 2 Max Yes (.) and then we'll have to do this now rather than just talking
- 3 Fiona ((*looking away from Max*)) Yes↑
- 4 Max Yes I want mine to talk to mine
- 5 Edwin ((*moving around on the chair*)) This will be very very difficult
- 6 Max ↓Difficult (.) it will just be to do it
- 7 Edwin (xxx)
- 8 Max Yes I know what mine will be saying (.) mine will not (.) I know what mine will be saying
- 9 Edwin (.) Hm?
- 10 Max If I can write
- 11 Edwin What [will he
- 12 Fiona [Yeah what?
- 13 Max Well for example (1.0) sort of it will not be him who helps maybe (.) it is Fiona who will (2.0) give items ((*looking at Edwin*))
- 14 Fiona ((*looking at the screen*)) (I want to go and) say like (.) just I agree with you



((sitting up on the chair, leaning towards the screen)) Not me (.) I'll say don't touch me I'll give you a scar↑ ((looking at Fiona, who shifts her gaze to Max)) it is my character I have to be allowed to write what I want↑

16 Fiona °Yes° (xxx) ((shifts her gaze back to the screen))

17 Max Should we start writing rather than just sitting here↑

The first point to note is how Fiona is initiating an attempt to make a game story which is informed by the school context, how people who defy the Pope are put in jail (line 1). Similar to Robin and Sally in the previous excerpt, she is orienting towards the activity by emphasizing the norms and values of the school context. This can be seen in how the dialogue sequence is established: Her attention before suggesting a game story has been on the school textbook, a common resource within a traditional school setting. Fiona is positioning herself as a *student*, inviting the other participants to align themselves with her and establish a common goal. However, Max and Edwin evaluate her suggestion and challenge her attempt: While Max responds by saying 'yes', a stance marker indicating alignment (Du Bois 2007, 144), he is clearly eager to start designing instead of 'just talking' (line 2). He is also determined that *his own* game characters should talk to each other: 'I want mine to talk to mine' (line 4). Edwin states that what they might be planning to do is 'very very difficult' (line 5).

Participation is actively constructed and cannot be controlled by just one person – the other participants have to visibly show that they have a common orientation (C. Goodwin 2000, 1500). In this case, Fiona's attempt at establishing a content-oriented goal for the activity that they are doing is clearly challenged, and is seen in both the verbal and embodied responses of Max and Edwin. Edwin's utterance 'this will be very very difficult' is accompanied by him shifting from side to side in his chair. Max disagrees on this, stating they will just have to *do* it and that he would like to do it himself instead of watching (lines 8 and 10). In line 8 when he says 'I know what mine will be saying,' he takes an *epistemic stance* as he clearly states that he knows what to do and is committed to doing it (Kärkkäinen 2006), with 'I know' as a common epistemic stance marker (Kärkkäinen 2003, 36–37). Max is later physically sitting up on the chair and leaning towards the screen when he says 'I'll say don't touch me I'll give you a scar↑', and looking at Fiona while saying 'It's my character I have to be allowed to write what I want↑' (line 15).

A joint construction of action is not only created through talk and gesture, but also through postural orientation (C. Goodwin 2000). Fiona, who initiated the sequence, often only briefly

looks at Max before shifting her gaze away from him, even when responding to him (lines 3 and 16) – the students are mainly looking at the computer screen (lines 14, 16). Fiona’s response in line 12, when addressing Max’s utterance ‘If I can write’ (line 10) with ‘Yeah what’ with an increase in volume and change in pitch, might indicate opposition (e.g., M. H. Goodwin, Cekaite, and Goodwin 2012). She is taking an *affective stance*, which can be defined as a ‘a mood, attitude, feeling, and disposition, as well as degrees of emotional intensity vis-à-vis some focus of concern’ (Ochs 1996, 410). Affective stances like Fiona’s anger towards Max can be seen when a participant in an interaction fails to properly cooperate in the activity (C. Goodwin 2007, 71). Here, Fiona’s affective stance shows another aspect of the tensions occurring when failing to agree not only on what the activity is about, but on how to participate.

In this excerpt, the students are again positioned within different activity frames, with Fiona emphasizing the curricular aspects of the activity, and Max focusing on the characters in the computer game and writing the game dialogue. But another aspect of how the tensions between school and leisure are made visible is also seen: How identifying with the game characters leads some students to forget, or choose to treat as irrelevant, that one of the main points of the task from a school perspective is to learn something about the Renaissance. Thus, tension is created between the students who balance learning about the Renaissance with the design process, and those who do not.

When Max states that *mine will talk to mine* in line 4, he is talking as a *game designer*, and emphasizes a sense of ownership to the character that he has designed. However, in line 15, this changes as he states: ‘I’ll say don’t touch me I’ll give you a scar’. Max has switched activity frames, talking on behalf of the game character he has created, referring to it as ‘I’. Shortly after, he switches back after looking at Fiona, again positioning himself as a game designer when saying ‘it is my character I have to be allowed to write what I want’ – again referencing that he has *made* the character instead of referring to *himself* as the character. The action of changing his gaze from the screen and towards Fiona seems to be an indicator of the sudden shift of frame.

This excerpt shows how characteristics of computer games, namely *engrossment* and identifying with game characters, might explain some of the tensions occurring in the game design activity in the classroom. Fine (1982) showed that misunderstandings might occur when people playing role-playing games are positioned within different activity frames, and therefore perceive what is going on in the current situation in a different way – for example, failing to understand if a question is targeted at a person in her primary framework or at the character she is playing as. Moreover, players can become attached to the characters they create, identifying with the game characters to the extent that they ‘become so engrossed in the game that they may shelve their natural identity and temporarily adopt the one of their character’ (Fine 1982, 11). While this refers to creating one’s own characters within fantasy tabletop role-playing games, it also seems to take place while designing computer game characters. What Max perceives as important in the activity is influenced by his identification with the game character, making learning about the Renaissance a less important activity than making the game characters and dialogue. This contributes to creating tensions when other participants see the activity as mainly a school activity.

## 6. Summary and discussion

The excerpts presented have shown different aspects of tensions that arise when game design is taken into a formal learning environment, and how these tensions unfold.

The first point that should be noted is that these tensions might be due to disalignment between the students as they position themselves within different activity frames, emphasizing different aspects of the activity they are participating in. The examples reveal a common pattern in the data material, where the students identify as either students or game designers, which in turn shapes what they interpret as important in the activity. The *game designer* would often emphasize the story, game characters and creating the game world, sometimes to the extent where the school content was forgotten or made irrelevant. When the participants were positioned within an activity frame where they identified as *students*, they would balance the game design process with a focus on school knowledge, often using such artefacts as textbooks, Google or Wikipedia to support their claims. The tensions occurring were not only seen when the students had different perceptions of what was valid knowledge in the school context, but also in their moral stances based on how one was *supposed to behave*, and the emotions and uncertainty they showed when other participants failed to cooperate in the way that was expected.

However, these activity frames were *dynamic* and shifting. It seems that being *students* can be seen as the primary framework of the participants, as this governed how they commonly would perceive the activities taking place in a school context. However, the activity could quickly shift so that the participants were positioned as *game designers*. They could even become so engrossed in the game they had created that they shifted to a level of meaning where they positioned themselves as *game characters*, as Max did in the second analysed excerpt. Here, the student's strong identification with game characters contributed to him seeing content learning as a less important factor, which can cause tensions with the students who manage to balance content learning and game design.

Ito et al. (2013) argue that connecting academic learning to what the students themselves find interesting might be beneficial to them. As seen in the data material, however, connecting academic content to game design, linking a school task to a method resembling young people's leisure activities, sometimes creates tensions that should not be ignored. This does not mean that the method should not be used – the students were often able to balance academic learning and game design, and expressed a high level of interest in using game design in the classroom – but it is important to understand these challenges. Previously, reasons have been found that can explain why challenges arise when taking elements from young people's leisure practices into the classroom, including testing requirements and scepticism on the part of parents (Ito et al. 2013), differences in how learning is perceived from traditional teaching methods (Säljö 2010) and uncertainty from the students that the skills from their home practices will be approved by their teachers (Jenkins, Ito, and boyd 2016). A significant aspect shown in this article, however, is that the challenges explored here do not stem from structural demands, parents or teachers, but from *the students themselves* failing to align on what the task they are doing is really about.

According to a study by Chee, Mehrotra, and Ong (2015), a teacher reported that about a third of her students could be identified as 'traditional learners', who had 'become habituated to reading the textbook with the aim of memorizing content for subject tests' (524), and therefore resisted the game-based learning approach. Along the same lines, de Freitas (2006, 351) found that some tutors in her study noted that not all students were eager to use game-based learning approaches, and that some students found it challenging to return to more text-based learning methods after learning through games. This supports what have been shown in this article's analyses: There are challenges to combining activities associated with young people's leisure with what can be considered the norms and values of the classroom.

It is not uncommon that tensions arise when a practice from one domain is brought into another. When an activity that is not usually seen in school is brought into the classroom, the students need to combine and negotiate elements from different domains, which might be a challenge (see e.g., Engeström, Engeström, and Kärkkäinen 1995). The students in this study had different experiences with games from their leisure, as well as different expectations for what classroom learning should be like. Thus, this challenge became apparent, but this also presents opportunities for learning. For example, participants can reflect on and negotiate the meaning of the practices they engage with, and confrontations can be essential to creating new hybrid practices (Akkerman and Bakker 2011). However, for these practice to continue in a fruitful manner where unproductive tensions are overcome, good communication might be a key tool (Akkerman and Bakker 2011). In this study, the tensions were produced by the students, and could also be reduced by the students themselves.

While this article focuses on how tensions unfold, the data corpus also showed several instances where the students could draw on both their leisure and the frame of the classroom in a productive manner. Their interactions were then characterized by creating an activity frame where the academic content learning was in the foreground and their gaming knowledge was used as an inspiration and a resource. They facilitated a joint orientation of the task by clearly expressing their intentions, positioning their bodies such that all the participants could perceive the important aspects of the activity, and gazing and pointing to ensure that all participants were oriented towards the same resources. This finding is congruent with studies by Mercer, Wegerif, and colleagues (Mercer, Wegerif, and Dawes 1999; Mercer 2004), suggesting that classroom collaboration might work better if certain ground rules for collaboration are in place. Their findings suggest that promoting talk where participants engage critically and constructively with each other's ideas, making sure that all opinions are considered before jointly making decisions, and ensuring that "*knowledge is made publicly accountable and reasoning is visible in the talk*" (Mercer, Wegerif, and Dawes 1999, 97 italics in original) might strengthen the students' collaboration. Thus, incorporating a set of ground rules that are facilitated by a teacher might reduce unproductive tensions and promote an activity frame where the students can draw on their leisure within the frame of a formal learning environment.

### **6.1 Concluding remarks**

This article has explored, through the lens of activity frames and stancetaking, the tensions that might occur when bringing the design of computer games into a formal learning context. By taking a participant perspective, it has shown how tensions are created by students in the game design activity as they take on different positions. While it may not be apparent from the outside, the students are participating in complex processes where they constantly negotiate what should be considered the important aspects of the activity they are participating in, positioning themselves within and dynamically shifting between different activity frames. Understanding these processes based on students' interactions may be a step towards reducing the challenges of transferring an activity from young people's leisure into a formal learning environment. The students can then participate in an interest-driven activity where they draw on their out-of-school, game-related practices as a resource, while considering the curricular aims of the game design activity.

Three factors might have an impact on the results presented in this article. First, the role of the teacher is often important for keeping the students on track with an activity. This role is described in the introduction, where with the comment, ‘Yes this is school this is absolutely school’, the teacher makes Alvin switch from being positioned within an activity frame informed by a leisure context, to being oriented to the activity as a school activity. This finding is consistent with earlier research on game-based learning, which states that the teacher has a role in facilitating the students’ activities (Peppler and Kafai 2007a, 152), and is crucial to making game-based learning in the classroom effective (Chee, Mehrotra, and Ong 2015, 517).

Second, the affordances of the software could influence which factors the students considered important in the game design activity. The software, *RPG Maker VX Ace*, was designed with the goal of creating games within the role-playing games genre. This genre is characterized by a strong emphasis on storytelling, a high number of game characters, and a large game world to explore. While the choice of a platform that allows for easy creation of game worlds and characters was intentional, it might have had implications for how the students oriented towards the activity, such as emphasizing narrative and character design. Finally, the nature of design-based research should be noted. A challenge of design-based research methods is that the results of an intervention are highly context-dependent, and might change based on variables such as the participants’ interests, needs, abilities, and interactions (Collins, Joseph, and Bielaczyc 2004, 17). However, as discussed in the literature review, challenges associated with introducing new technologies into the classroom are not uncommon. This article contributes to understanding these challenges by showing how tensions between students unfold.

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## 9. Appendix 1: Transcription key

Adapted from Jefferson (2004)

(.) Full stop inside brackets: Micropause of no significant length

(0.2) Number inside brackets: Timed pause

[ Square bracket: Overlapping speech

((*interaction*)): Description of non-verbal activity

(xxx): Talk that was too unclear to transcribe

↑ Upward arrow: Rise in intonation

↓ Downward arrow: Drop in intonation

? Question mark: Inquiring intonation

:: Colons: Elongated speech

(h) Bracketed h: Laugh within the talk

Underlined: Emphasized talk

= Equal sign: Continuation of talk

°word°: Quiet speech