Learning with Commercial Games: The Case of Nordahl Grieg High School, Norway

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Abstract: In this symposium paper, we will report our experience with using off-the-shelf video games at Nordahl Grieg High School over the last 3-4 years. We are two teachers, plus a researcher who has become involved since the fall 2014 as part of an upstart research project. A broad range of game-centred teaching units have been tried out, by ourselves and others, across 5 different subjects and totalling roughly 200 classroom hours. We will discuss what we have learned so far, discuss some key strategies and guiding principles, and present some preliminary findings from a recent classroom study.

Zombie-based Critical Learning with Games (Tobias Staaby)

A couple of years ago, I got the urge test the validity of an idea I had a few days earlier: can a commercial video game be a good catalyst for classroom discussion, and can games provide a learning space that is set apart from the space normally associated with learning. What could be the benefit of such a space, if any?

First of all: why would one want a learning space that stands apart from what students normally learn and the context they learn it in? Should not one want a game that gives a learning environment that is as realistic and closely connected to the curriculum as possible? Rather than using video games that have a close correlation with learning goals, in many ways replacing a textbook or other source of content, I argue that the educational use of video games does not require a one-to-one relationship between learning content and game content.

The method is different from the more common use of educational games, where the game provides the learning content or where game mechanics simulate the skills intended for the student to learn. Rather, it is up to the individual educator using this approach to identify the points where either the content or activities of the game overlap with the contents or curriculum of the school subject, or to find spaces in the game or gameplay activities that can facilitate learning. It is learning with games rather than learning from games. The teacher can very well use the game in tandem with more traditional learning sources, like textbooks, web pages and educational films. This approach also gives the teacher a lot of versatility and flexibility when designing a unit using games, instead of being restricted to the framework the game developer has provided.

Gee (2007) writes about the importance of “active” and “critical” learning. This is learning that goes beyond just mastering the content, by incorporating the knowledge in the way one acts within it. Active learning, then, is about seeing the world in new ways and using this as preparation for future learning (Gee, 2007, p. 24). What is needed for “active learning” to become “critical learning”, is for the learner to “learn not only how to understand and produce meanings in a particular semiotic domain but, in addition, needs to learn how to think about the domain at a “meta” level as a complex system of interrelated parts” (Gee 2007, p. 25). Gee further explains that the learner “also needs to learn how to innovate in the domain – how to produce meanings that, while recognizable to experts on the domain, are seen as somehow novel or unpredictable”.

As Gee (2007) notes, critical learning requires learners to innovate and think about a subject at a “meta” level. In my experience, it is more difficult for my students to innovate and, equally important, formulate individual, original and independent solutions and answers to the tasks given to them when they have a strong conception that there is a “correct answer”, or if they are working with material that simply doesn’t allow or have room for individual interpretations. Therefore, I would argue that it sometimes is to the students’ advantage that they are introduced to new concepts in a “baggage free” environment, so to speak; one that isn’t already laden with pre-existing conceptions and where all new ground is already broken. There has to be some space left in which the student can innovate. The mismatch between the video game and the subject matter is therefore a productive mismatch, since this creates more space for the student to formulate creative and innovative solutions to a task.

Learning does not come from the students achieving success and mastery in the game. In fact, winning the game is completely detached from learning goals. This may seem like an obvious statement, but it is important, especially when dealing with games not designed for educational purposes. There has to be some real-world “output”, a test, student essay, presentation or the like, that puts the learning goals in a context completely detached from the video game. In other words: the student has to “translate” the learning that takes place in the context of or in

tandem with the game into other contexts, independently of the game. The need for this translation is what gives room for active, critical learning. I will demonstrate what I mean by using my experiences from teaching ethics with Telltale Games's *The Walking Dead* (2012).

An Example of Learning with Games: *The Walking Dead* and Moral Philosophy

The Walking Dead by Telltale Games is a post-apocalyptic dystopian point-and-click/action-adventure game with a big emphasis on narrative and branching story. The world as we know it is in ruins, along with most of its people, who have become flesh-eating walking corpses, save for a few desperate survivors. The player takes the role of one of these survivors, Lee Everett, and guides him through a harrowing story of how humanity copes when civilization crumbles around them. The main way of interacting with the game is through dialogue choices, where the player can select from up to four options depending on the situation. Truly dangerous situations resulting in player death and failure are relatively few, and most of the game's challenge comes in the form of a wide variety of difficult moral dilemmas. These can be anything from deciding whether to steal food from an abandoned car, deciding whether to lie or to tell the truth, or whose life to save then you can only save one. The game is divided into episodes, with ten episodes across two seasons.

When teaching ethics with *The Walking Dead*, learning does not necessarily take place during gameplay, but rather alongside gameplay. In this unit, I structure the class as follows: I start by giving a short presentation of the four ethical theories I want my students to learn: consequential ethics, ethics of virtue, relational ethics, and ethics of duty. We then start playing the game, which I have set up on the classroom projector. I let my students take care of the actual gameplay. When we come to a dilemma within the game, we pause the game, and for the first four dilemmas, I give a short lecture on the ethical theories one at a time, each theory linked to a suitable dilemma demonstrating the nuances of the theory at hand. I then ask my students to discuss how to solve the dilemma, talking to the individual groups and summarizing the various arguments. I then put the dilemma to the vote, where I have made a poll using an online survey tool called "Kahoot" to let each student vote anonymously. Whatever answer gets the most votes is the one we act upon in the game. Now, of course we could have just started with the real-life dilemmas and worked our way from there, and my students would still have been able to grasp the core concepts (people have been studying moral philosophy long before the advent for video games, after all). However, this would not be a baggage free environment. Discussing contemporary issues like abortion or capital punishment would not necessarily be ideal for the students, since these issues have already been more or less hollowed out by politicians, journalists, pundits, and so on. The game introduces the students to activities and/or concepts that the students can use as a basis for learning. In other words: the game serves up the expressions, and the teacher and the students work together to fill these with content. *The Walking Dead* introduces the students to difficult ethical dilemmas, and together we put them in the context of moral philosophy. Put simply, the games gives us something to talk about, rather than having to discuss the ethical theories in a vacuum, or in a context too heavily laden with baggage.

These repeated passes using ethical theories as a way of discussing ethical dilemmas in *The Walking Dead* gradually deepens and improves the students' literacy in the domain of moral philosophy. In order to reach what Gee (2007) refers to as critical learning, learning how to "think about the domain at a "meta" level as a complex system of interrelated parts", they have to be able to abstract the core concepts of moral philosophy and apply them to other situations and contexts. In other words, they must learn how to connect the meanings of utilitarianism, relational ethics etc. from instances in the game to different dilemmas in other environments. In the final part of the unit, I divided the students into groups, where they discussed real-world dilemmas using the ethical theories they learned earlier in the unit, while I sat across the table and observed. In these debates, they were to evaluate the implications of each ethical theory according to the dilemma at hand. I evaluated them based on how well they were able to formulate individual answers and solutions to the dilemmas - that is: not parroting an argument from a media pundit, news article or the like, and whether or not they are able to make meaningful responses to statements from other group members. An important part of the evaluation was to what degree they were able to use their knowledge of ethical theories as foundation for their arguments, and how sensitive these arguments were to the nuances of a given dilemma and the traits of each given ethical theory. Failure to do so, like making generalized statements not particular to any given dilemma or ethical theory, would indicate that the student still had a way to go before truly understanding the subject matter. Over the course of these debates, most of the students were able to demonstrate knowledge of and ability to use the ethical theories in their own individual way, which indicated to me that *The Walking Dead* helped them learn, if not better, than at least just as well as if we were using more traditional learning tools.

My students sometimes expressed frustration over the fact that some of the dilemmas in *The Walking Dead* results in the same outcomes no matter what you do. To this, I answer that the actual consequence is not as important as the reflection the dilemma itself provokes. In other words, when using *The Walking Dead* as a context

for ethical discussion, what the mechanical implications of our actions are in the game is of little interest to us; the really interesting part – the learning itself – comes in between the gameplay, before and after an action is taken in the game. Instead of serving connections between the game and real-world dilemmas up-front, this approach encourages students to find an answer themselves. “Okay, now I’ve understood what answers utilitarianism looks like in the world of *The Walking Dead*. Now, what happens when we have an utilitarian perspective on real world issues?” Giving a meaningful answer to this problem requires recognizing patterns and abstract concepts, and being able to apply them to real-world phenomena.

Using *Civilization IV* as a Tool for Deepening Understanding and Promoting Learning Retention In Social Science and English (Aleksander Husøy)

Some time ago, I came across Kurt Squire’s dissertation *Replaying History* (2004), on the use of Sid Meier’s *Civilization III* to teach history. Inspired by his work, I went about creating lesson plans for a four-week cross-curricular project using Sid Meier’s *Civilization IV* (Firaxis Games, 2005) in my English and Social Studies classes. Having used this game with Grade 11 General Studies students of 28-30 students over 3 years, I believe I have gained some insights into the factors that determine the success of a massive game-centred unit.

Civilization IV is a complex turn-based strategy game in which the player is tasked with leading a state from early history and into modern times. In order to succeed, the player needs to be able to balance the time and resources required for the various needs of a fledgling state. How much effort should be devoted to technological development vs. national defence vs. developing infrastructure? In addition the player needs to make difficult decisions with regards to diplomacy, maintaining friendly relations with his closest allies while avoiding alienating other actors in the international community. The game can thereby function as a simulation modelling many of those processes in social science that we want our students to gain an understanding of.

In earlier attempts at using games from the *Civilization* series in education, the units have been based on modifications of the game particularly designed to illustrate specific events, particularly in History courses. Examples of this include Ed Webb and Todd Bryant’s work using the game “to grapple with the historical puzzle of the conquest of Mesoamerica by relatively small numbers of Europeans in the late 15th Century and 16th Century“ (Webb, 2013) and Shawn Graham’s use of the game to illustrate the Roman civil war of 69 AD (Graham, 2010). My approach differs significantly from this. Students were let loose to explore the game much in the same way as a recreational player would. This means that the scenarios that they encountered would be very different than actual historic events. A student playing as Victoria I of England, might find herself invaded by a technologically superior Zulu nation. In another instance Mao will make attempts, to no avail, at convincing the Americans to give up State Property. The who’s who of history is however irrelevant to the aims of this unit. The types of situation that the students encounter are key.

Playing this game, students will enter into a variety of diplomatic agreements, they will need to take a stand on how they want to run their nation, they will see their civilization’s finances crumble as they neglect their infrastructure. These experiences found a basis for discussing the how, when and why such events happen in the world today. By letting students experience and examine the consequences of choices taken by nations within the framework of a game, the idea is that they become competent to apply the social science concepts they encounter in the game when studying events in the real world.

A central principle to my approach is that what takes place within the framework of the game should be just one component of the learning unit. Textbooks or other source materials, and not least, activities and interactions between students are crucial to the effectiveness of any game centred learning unit I have run this far. *Civilization IV* in and of itself has plenty of learning potential, but it is through the exercise of discussion, and identifying parallels to real world situations this game becomes truly potent. This encourages deep learning (Fullan & Langworthy, 2014), and allows for better learning retention.

Ideally, much of the learning process in a *Civilization IV* unit will be learner driven. Students should be introduced to some of the theories and concepts that they will be likely to encounter in the game before they start playing, and the must be given the opportunity to reflect upon these without too much interference from the teacher. The role of the educator in such a unit is to a large extent to facilitate student discussions and provide “just-in-time” learning, assisting students in connecting the dots between what they experience within the game, and learning aims from the social science curriculum. This can often be achieved by asking the right questions, leaving it to the students to draw the parallels.

Some examples of learning situations that occurred while working with *Civilization IV*:

- One concept that many Norwegian students struggle with in understanding the causes of poverty in developing country, is the importance of infrastructure. Having identified that the reason their state's economy's dire straits in the game were due to them neglecting developing infrastructure, students reflected on how limited access to roads, sanitation and electricity affects the prospects of developing countries.

- In *Civilization IV* the quality of your relationship with other civilizations is determined by factors like religion, political preferences, international agreements and past events. These are made explicit to the player through the user interface. Having identified the factors that determine how well they get along with other nations in the game, lead to a series of discussions of how political cleavages between nations or groups complicate conflict resolution in international politics.

- Towards the middle of a game of *Civilization IV* , players will face a first encounter with a civilization from another continent that is often vastly technologically superior or inferior to their own. This meeting will often result in the downfall of the inferior civilization by being conquered or being made a vassal of the dominant state. Observing the processes that take place following such a meeting, allows the student to reflect upon the meetings between European colonists and any indigenous peoples, as well as their long term consequences.

In order for students to use this game to attain deeper learning, some of the relevant concepts need already to be introduced, for instance through lectures, reading materials etc. Students will need to become thoroughly acquainted with the gameplay of *Civilization IV*. They do by no means need to become expert gamers, but they need to become sufficiently competent to understand central features of the game mechanics. Finally, they will need to be able to apply both the concepts in international relations and the models of interaction to relevant real-world examples. Since the game illustrates how interactions between nations play out generally, rather than attempting to replicate historic events, concepts from the game can be applied to a range of contemporary situations. Making use of each of these aspects to attain a greater understanding of the others can, in part be achieved through student reflection and instruction. However to enable deeper learning, i.e ensuring that the learning process "becomes the focal point for the mutual discovery, creation and use of knowledge" (Fullan & Langworthy, 2014, p. 3), one has to facilitate a dialogical process where students can collaborate to reach these insights.

By experiencing and discussing these processes, and comparing and contrasting them to their real world equivalents, many of my students exhibit a deeper understanding of their subject materials than students in classes where I did not run this unit. Furthermore, learning retention seems to be stronger for those of my students with whom I ran this unit, than with students where the same materials were covered using textbooks, lectures and group work. Two years after my first run of this project, I conducted short informal survey with a random sampling of my former students. Half of which were were in a class where I covered the topic of International Relations without the use of a game. The students who took part in the *Civilization* project expressed a better recollection of the concepts we covered, and were able to a greater extent able to apply these to current events in international relations. The size and scope of this survey is by no means sufficient to yield definitive results, but the relationship between the use of games and learning retention is certainly deserving of further study.

Though *Civilization IV* can serve to give students a better understanding of a whole range of Social Science concepts, the game is by no means a perfect model. This is a game designed as an entertainment product, and as such accuracy in its rendition of reality is often sacrificed for playability. For instance though the player can select between several different forms of Government, the penalties and bonuses associated with these function more to balance the game mechanics than to accurately portray them. The game gives the player dictatorial, if not to say godlike powers to administer his civilization. Regardless of whether the player runs a theocratic police state or has embraced both universal suffrage and free speech, there are no internal checks on the player's authority.

These discrepancies might be viewed as a limitation to the relevance of this game as a teaching tool, but in my opinion, these inaccuracies serve an important purpose. Any model is by definition limited. However, models and simplifications are often taken at face value by high school students, and form lasting misconceptions. Representations of reality in all media sacrifice nuance for clarity, entertainment or force of argument. Though teachers may point this out, students' takeaway from textbooks, film etc. is that these are accurate and precise depictions of reality. Students are far more accustomed to viewing the representations of reality found in games with a critical view. By discussing and examining to which extent the worldview presented in *Civilization IV* is accurate, this also opens the students' minds to also approach information presented in other media with a healthy sense of scepticism.

A further caveat to using this approach is that for those students who never got on board with this game had substantially worse learning outcomes than students in classes where the material is approached without using *Civilization IV*. Regardless of the teaching method, some units work better or worse for different students. Seeing as this was an extensive unit, running over 4 weeks, it left students who were unable or unwilling to learn the game mechanics in the early phases, without the necessary framework to make effective use of the game in their learning. This framework is absolutely crucial for students to benefit from this approach to learning. Though most of my students had an improved learning outcome, it needs to be balanced against those few students who had a significantly worse outcome from using this game. In the first two years I ran this unit between 2-4 out of 30 students fell into the group that gained only a limited understanding of the game. This had a tremendous negative effect on their learning outcome. Therefore, in order to run a unit of this scope, one must carefully assess the likelihood of each student's willingness to invest time learning game mechanics that they might not immediately see the purpose of. Preferably, one should also have a fallback option for those students identified to have limited learning outputs.

Civilization IV is not, and will never be the ideal teaching tool for most classrooms. The game requires a substantial time investment by both teachers and students to acquire a sufficient understanding of a fairly complex set of game mechanics. Yet, highly motivated teachers who are competent in their subject and have a solid understanding of the strengths and limitations of using games for learning may encourage deeper learning and better learning retention with a unit like this. The principles that this unit is based on should also be applicable to many other game centred learning situations.

Situated Learning with Off-The-Shelf Games: Key Approaches and Challenges (Rune Klevjer)

Nordahl Grieg High School is emerging as a privileged site for practice-based research and innovation in the field of games and education. No other schools in Norway, or elsewhere as I am aware of, are investing in similarly comprehensive efforts to develop the use of commercial computer games an established classroom practice. The primary driver has been the teaching staff themselves, without whom little but promises and strategies would remain; at best maybe we would have a couple of isolated experiments, driven by external agendas and expertise. From a researcher's point of view, this is a chance to participate in the development of a field driven by the practitioners themselves, taking the double role as teachers and action-researchers. I believe that the prospects for building something of real impact, in classrooms as well in the field of education more broadly, is much stronger in such a case than in situations where schools are being persuaded to accommodate academic initiatives.

The research project that we are planning for the period 2016-2020 will address classroom strategies and pedagogies as well as challenges at the institutional and organisational level. In the latter area of study, key aims will be to develop and share pedagogical models, teacher competencies and resources, organisational frameworks, and research-based methodologies. At the classroom level, a pedagogic profile is already emerging, although aims and methodologies are still diverse and the trajectories ahead far from settled. First, the off-the-shelf approach implies a particular way of conceptualising the role of games in the classroom. In school, a commercial game is a found object, not designed for the occasion. As Staaby points out, students are asked to learn *with* the games, in a way that is more similar to working with a literary novella or a documentary film (or visiting a gallery) than to working with a textbook or a specially designed task-set. Game play is embedded within a larger package of activities, which are governed by fairly traditional didactic considerations, although generally committed to an activity-oriented approach to learning.

The Nordahl Grieg off-the-shelf approach also involves a strong media education aspect; learning with games is an opportunity to also learn *about* games. The teachers are cultural and educational curators, who want to bring original media into the classroom, not some pedagogical derivative of them. Finding games that they can themselves appreciate and enjoy is of crucial importance; they need to able to tell their students that this is a good game, worthy of their time and effort. Not all students will be motivated by games, but they will at least have a chance to engage with good stuff. Media education topics are part of the curriculum in Norwegian language classes, and also in English, where students have for example played *Gone Home* (Fulbright Company, 2013) as a way of studying English language and literature. Looking across the curriculum, we want students to learn about about how they are learning (or not learning), and how working with games compares to working with other types of material.

Second, in *The Walking Dead* classroom as well as in the *Civilization IV* classroom, there is a common emphasis on situated, first-hand learning, resonating with a long tradition of simulation and gaming in education. Tansey and Unwin (1969) reports how participants in the 1957 Jefferson Township school-administration simulation «… experienced fears, doubts, satisfaction; they became tired and frustrated, but most of all they became the person with the job to do and the problem to solve. This was obviously learning by doing» (1969, p. 11). Whereas students playing *Civilization IV* get to immerse themselves in a web of interconnected parameters, attempting to get a grip

on «how social or cultural systems work in the world" (Bogost, 2008, p. 136), playing *The Walking Dead* is not similarly simulation-based, at least not in the strict sense. Instead, the role-playing element is stronger and more focused. The task is to situate yourself, fictionally and perceptually, as "the person with the problem to solve". In both cases, however, games are utilised as situating gateways to learning. Through play and classroom dialogue, students are placed in situations that encourage reflection on a few core concepts, with the aim of putting them on the track of active and engaged learning. We should note that both types of games support situated engagement in a *fictional* domain. The gap between, on one hand, the game's extra-curricular (or "zombified") world-models and, on the other hand, the conceptual models sanctioned by the curriculum, is, as Staaby explains above, seen as an advantage rather than as an unwanted barrier to overcome. As in Kurt Squire's seminal study on *Civilization III* in the classroom (2003), the goal is to have students engaged in such a way that they start asking relevant questions to the teacher and to each other. For this to happen, they need to *care* enough to invest work in the gameplay situation, and to be prepared to push themselves beyond looking for ready-made formulations, canned reflections, and the safety of cut-and-paste outputs.

The experience documented from the *The Walking Dead* case so far also supports the idea that "zombie-based" learning can take place through whole-class play via the projector. This appears to confirm Lee and Probert's finding that whole-class playing of *Civilization III* can work as a gateway to engaged learning in high-school social studies, even if the possible connections between game and curriculum content were «…much less direct than some teachers may be used to» (Lee and Probert, 2010, p. 24). Perhaps the whole-class strategy can be seen as a minimum or entry-level model of situated learning with games, sacrificing the benefits of first-hand individual gaming for higher inclusion, stronger control, lower time investment, and easier logistics. The main pedagogic strength seems to lie in its potential to engage the whole class in structured discussions.

Based on the teacher's observations, as well as my own preliminary findings from a two-week classroom study on Husøy's social studies unit during October 2014 – which was broken off earlier than planned – inclusion and gaming competency are central issues when teaching regular classes with a game like *Civilization IV*. This type of game is more strongly associated with particular preference groups and cultural identities than, say, a documentary film, and we must expect this to influence the social dynamic in the classroom. The data so far, especially from group interviews, indicate a polarising tendency among the students, opposing those who were highly engaged and enthusiastic to those who claimed to be completely lost. The former group were almost exclusively boys, experienced with video games. The latter group were inexperienced with games, and mostly girls (although with a couple of exceptions). In the group interviews, a majority of the girls stated, repeatedly, that they did not understand anything of the game. Although slightly exaggerated, classroom observations confirm that most of the girls did indeed fail to get a sufficient grip of basic gameplay. In contrast, experienced gamers displayed a level of engagement that is rarely seen in students' work on theoretical subjects. The way in which they reflected on their own learning experience closely echoed ideals of experience-based and situated learning. For example, one of the students elaborated on how his own experience in the game made him understand very well the "strong temptation" there may be for a state to expand thorough colonisation.

As could be expected, struggling students felt that the game was too complex and difficult. All students, however, complained that the teacher should have spent more time teaching the basics of the game in front of the class. They were clearly not at all worried that such traditional teaching would "ruin the fun" or undermine the autonomy of the gaming experience, quite the contrary. In the words of one of the experienced gamers: "In maths, the teacher shows us how to do a task. It is the same with solving something in the game. The teacher must show us how to play". Many also pointed more generally to the high level of open-ended and self-directed learning as a major obstacle to learning.

The preliminary findings from the *Civilization IV* class highlight a few methodological challenges that will be addressed during the main project period. Through the observations and group interviews, the need for log data or other ways of documenting the students' game playing in detail has become more apparent. The gameplay experience is at the core of this variant of game-centred learning, and the student's self-reporting on their own competence and playing style needs to be compared with objective data. Solid log data would also allow us to compare students' game playing patterns and competencies with the material they produce for our evaluation and assessment, essentially looking for links between types of engagement and types of learning outcomes. In terms of the games themselves, less demanding yet meaty enough simulation games will be worth trying out, as well as closer-to-reality simulation games – to which role-playing could possibly add some of the immersion and sense of urgency that characterises engaged situated learning. Finally, the preliminary findings illustrate the need for qualitative research on the social dynamics of game preferences and competencies among Norwegian teenagers, which appears, perhaps unsurprisingly, to play very significantly into classroom situations.

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