

The learning effect of “Global Conflicts: Palestine”

Tasha Buch
Research Assistant

Simon Egenfeldt-Nielsen
Assistant Professor

Center for Computer Games Research
IT University of Copenhagen
Rued Langgaards Vej 7
DK-2300 Copenhagen S
Denmark

Abstract

Few field studies have examined students' using of educational computer game titles in high school. This paper presents results from a research project in two Danish high schools with 51 students aged 16-20 using a playable prototype. The research project evolves around the development of the prototype “Global Conflicts: Palestine” an educational computer game about the Israeli-Palestinian conflict. Drawing on an evaluation survey that was administered at the end of an experimental game course, we examined how the students used a computer game developed for teaching a subject in history.

Keywords

Educational computer games, field study, high school students, games for teaching history

1. Introduction

In recent years, the research interest for computer games with an agenda beyond entertainment (so called serious games) is growing. The largest sub area is educational use of computer games. Back in the early 1970s research projects founded the area with titles like “Oregon Trail” and “Lemonade Stand”. However, researchers lost interest in the area especially as edutainment up through the late 1980s and the 1990s increasingly became caricatures of mainstream games. The gameplay, technology, graphics, and pedagogy behind educational use of games were stagnated for many years (Bergeron, 2006; Egenfeldt-Nielsen, 2005).

Still, there have been more than 30 quantitative studies over the years suggesting that games are useful in classrooms. However, most of these studies have focused on younger age groups than the one in high schools (Egenfeldt-Nielsen, 2005). Penetration is beginning to pick up with 59% of 1,000 K-12 teachers wanting to use computer games in UK, and 53 % out of 109 K-12 teachers that have used, or are using, games in Canadian schools (Becker, 2005; MORI, 2006).

These days, moving away from the edutainment approach, researchers flock to the research area to take up what is probably among the hardest challenges in game development. In designing computer games for educational use, game developers run into a dangerous cocktail of problems on many levels that

the game industry has only just begun to engage with on their own turf. When developing computer games for educational use, you are faced with the challenge of designing a computer game that should be as engaging and challenging as a commercial computer game, but at the same time meets the requirements of lesson plans and curriculum while catering to very diverse target groups. The consequence is that the game developer will have to consider the heterogeneous group of students in the classroom setting: some students are computer game novices, while others are exclusive strategy gamers, and others again are hardcore FPS-players. This consideration of variation among students applies in particular to general gender differences (Egenfeldt-Nielsen, 2005; Squire, 2004; Falstein, 2005; Jenkins & Cassel, 1998).

This research project posed the challenge to solve some of these problems in collaboration with game developers, publishers, content experts and teachers. We aimed to produce a prototype about the Israeli-Palestinian conflict that was on par with commercial titles, but that explicitly catered to an educational agenda with specific contents while offering meaningful experiences to a variety of student groups. Our main focus on personal stories from both sides involved in the conflict provided a broad perspective and enabled experiences and content to cut across the diverse target group in the classroom setting.

Our approach is consistent with previous studies stating that *engagement*, *challenge*, *audiovisual*, and *involvement* are key elements of educational games (Egenfeldt-Nielsen, 2005; Prensky, 2001). Some studies hold that computer games are not well suited for teaching cold factual knowledge (Gee, 2003; Squire, 2004). However, others find this to be an important part of educational use of computer games (Becta, 2001). We decided to include factual knowledge as an important element to accommodate teachers' requirements according to curriculum. We also relied on other studies that propose that learning methods such as systemic thinking, analysis, and critical thinking are special qualities of educational games. (Gee, 2003; Squire, 2004).

In this paper we present results from the evaluation of two high school courses involving 51 students. The results indicate that the prototype was fairly successful in solving some of the problems above.

2.0 "Global Conflicts: Palestine"

In "Global Conflicts: Palestine" you play a journalist that has just arrived to the Middle East, and you can choose between different missions like following an Israeli military patrol. As you progress through the mission you gather the necessary information for writing an article. You gain information by talking to e.g. a Palestinian imam, an Israeli soldier, a Palestinian mother of a martyr, and an Israeli teenager.



Picture 1: Palestinians passing an Israeli checkpoint. Source: "Global Conflicts: Palestine" by Serious Games Interactive.

You can challenge the approach of people you meet by choosing critical answers in the process gaining important information in order to score points.

You can also choose pragmatic answers and build up trust, so people on both sides will share more information with you. By talking to both sides of the conflict you will get different views on the conflict. During missions you will be challenged on your neutrality as a journalist and it will be hard to maintain strong ties with both sides.

2.1 Empirical set-up in game course

The empirical set-up included 51 Danish high school students from a mixed background and location split on two classes. Participants were part of a four-day experimental game course using the prototype "Global Conflicts: Palestine". Even with most of the four days set aside for the course, time was in short supply, which several students commented on.

The prototype and course was designed in collaboration with high school teachers of history, citizenship, religion and geography. The initial goal was a cross-disciplinary course where these four subjects were included. However, the internal coordination at the different high schools proved that working cross-disciplinary still hasn't matured enough in the Danish education system. This can be explained by the fact that the discipline was just recently introduced in a new high school reform in 2005. In the end, it was therefore primarily the subject history which became the main force in the course.

Students had received history lessons about the Israeli-Palestinian conflict 4 weeks prior to the experimental game course, which provided them with knowledge of the conflict according to the requirements of the curriculum of history in Danish high schools. Both classes were given a short lecture about the highlights of the conflict before playing the game to revisit the prior weeks of teaching.

In the experimental four-day game course the students played two missions per day the first two days. Each mission was followed by group work. At the end of the second day there was a wrap up of game and group work. On the third day the students either worked in groups with their synopsis or individually with their newspaper article. The fourth day was

kept for evaluation and interviews. This paper will primarily draw on the evaluations from the fourth day utilizing both the quantitative and qualitative data.

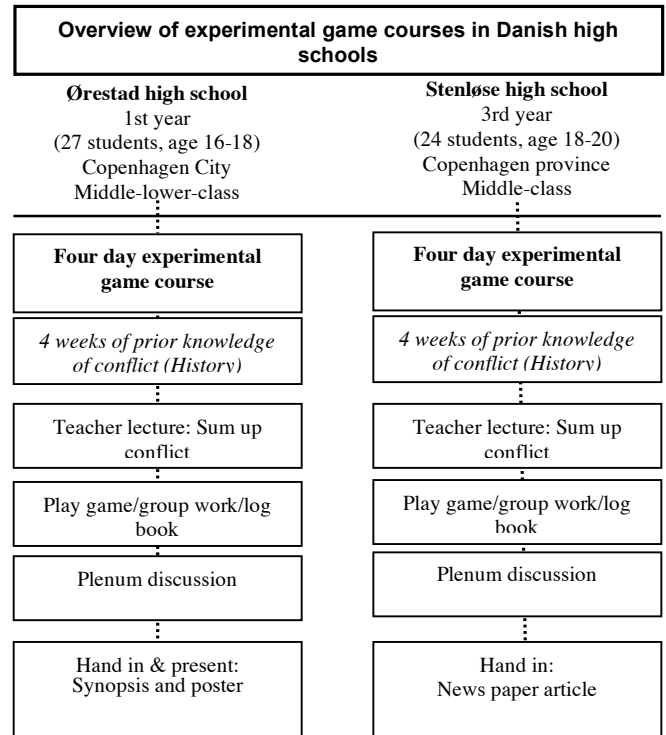


Figure 1: Shows the experimental game courses on two Danish high schools

3.0 Learning experience from classroom set-up

Overall, the learning experience with "GC: Palestine" can be described as promising. Evaluation results showed that personal stories from the conflict providing different perspectives on the conflict were the primary strength of the game. This strength combined with a set-up that differs from a normal course seems to have provided 89.1% of the students saying they wanted to repeat a similar course.

Also, 72,3 % found that the prototype was quite or very interesting as an educational material.

Figure 2 illustrates that a majority of students (57,8 %)

felt they learned more from the game course than from normal history courses, and 33,3 % of the students felt they learned as much as they usually do from a normal course.

These overall positive results point to the success of our set-up that mixed different modes. The qualities of the game were more precisely described as enabling different and realistic, personal perspectives on the conflict:

How much did you learn during the game course with GC: Palestine compared to normal courses?	
I learned more than I usually do	57,8 %
I learned as much as I usually do	33,3 %
I learned less than I usually do	6,7 %
I learned nothing	2,2 %
Total	100 %

Figure 2: Students' learning outcome from the game course

"You learn a lot about how Israelis and Palestinians respectively look at the conflict, because you talk to different persons. In addition to this, I think it is good that the stories derive from reality, providing the stories with a realistic tone."

Female student, 18 years

When rating the game, the realism behind the personal stories was an important factor for students, enabling respect for the game as learning material.

Looking at the qualities of group work, students described the collaboration as a possibility for discussing and reflecting on the topics with classmates:

"I learned about my classmates' point of view on what they had learned from the computer game"

Female student, 18 years

Group work enabled an important link between game and lectures, providing a space for discussion and facilitating a readjustment on knowledge and point of views.

The qualities of the lectures were phrased as facilitating a general overview on the conflict:

"[The lectures] formed a good general overview on the situation in Israel/Palestine"

Male student, 16 years

It is clear that these multiple ways of working with a subject such as the Israeli-Palestinian conflict each have their legitimacy, and that they all have unique importance for a many-sided way of teaching a subject. This hermeneutical movement back and forth between abstract knowledge and concrete experiences has strong ties to the constructivist learning approach, which claims that learning is an active process initiated by the student when reconstructing knowledge (Bruner, Piaget, Dewey).

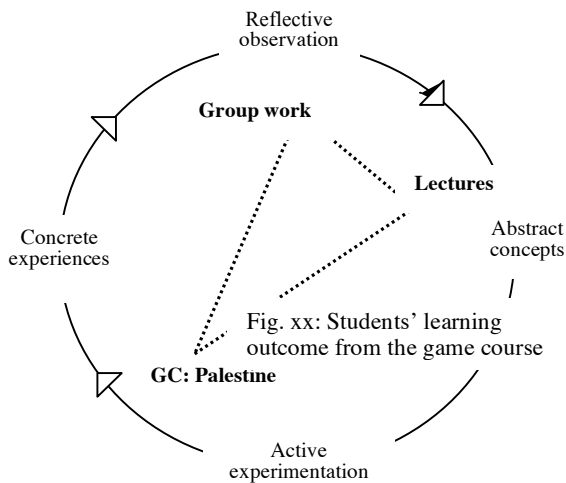


Figure 3: The intended learning process in the set-up

Figure 3 above illustrates the learning process in the set-up, based on Kolb's experiential learning theory understanding learning as a circular process (Kolb, 1984). Looking at this

model, the set-up was designed with the intention of circulating between abstract concepts, concrete experience, and reflective observations. Our intention in this set-up was to create an intense shift between the teaching modes that could both build on and rebuild students' experiences about the conflict as different perspectives and personal stories provided knowledge that many history books leave unfolded.

Nevertheless, when observing this model in action, it was clear to us that it needed tightening up as some students, especially freshman students, had a hard time administrating their working time between the game and the group work. According to some student responses, there was a need for more direct teacher response to the knowledge they obtained from the game. This could be achieved if placing lectures right after game time.

Considering the set-up in a general perspective, the learning quality of playing the prototype was less consistent than we had hoped for. But nevertheless, the evaluation of the learning effect on the students was quite promising, taking into account that the game was a prototype.

3.1 The learning qualities in GC: Palestine

Taking a step further into the qualities of the prototype, we want to discuss the qualities students found in the game. A complicated conflict as the Israeli-Palestinian conflict is hard to comprehend through factual knowledge only, because it is based on human feelings in a very complex mixture of religion, geography, history, and politics.

Personal stories from the different parts of the conflict provide opposing discourses and shatter the idea of an objective understanding of the conflict. The students must take a stand on their own when they are talking to Israelis and Palestinians relating to the different views on e.g., the side effects from the construction of the wall on the West Bank, Palestinian suicide bombs and Jewish settlements. This active learning construction pushes the limits of the abstract factual teaching and provides new knowledge interacting with the students' rationale.

When the students were asked to express the advantages of the game, they overall agreed that they felt they understood the perspectives of the conflict better as the game were visualizing the topics and linking the general overview they learned from the lectures with a concrete level. The personal stories were based on true personal experiences, which they could interact with and felt they could relate to.

Even the more mature 3rd year students, who prior to the game had supplemented history lectures with viewing documentaries with personal stories, expressed that the game gave them a chance to get really attached to the personal stories by talking to the characters in the different missions. This attachment helped them understand the conflict better. This also translated into stronger engagement, which is often seen in games. However, it seems that this engagement was not based on challenge that is often an important element in game's strong engagement (Egenfeldt, 2005).

In this course the challenge was actually not very high partly due to the fact that we were testing a prototype. Despite this, the overall course was described as successful and engagement did not seem to suffer. Observing engagement in the course there were interesting differences between game, group work and lectures as demonstrated in figure 4 below.

How engaged did you feel during the experimental game course?			
	Game	Group work	Lectures
Very good	31,3 %	20 %	13,3 %
Fairly good	51,1 %	60 %	46,7 %
Neither good nor bad	13,3 %	13,3 %	31,1 %
Fairly bad	2,2 %	6,7 %	8,9 %
Very bad	0 %	0 %	0 %
Total	100 %	100 %	100 %

Figure 4: Students' engagement in the game course

Moreover, the different personal perspectives had a special importance for arousing girls' interest in history:

"I learned more history from the game in one day, than I have learned from the teacher the last 6 months" (Female, 16)

Interviews with teachers have shown that girls want history classes to be less abstract and generalized, which is characteristic of lectures and textbooks (Egenfeldt-Nielsen, 2005). This didn't differ from our findings, showing that especially girls applauded the personal angle of history teaching, pointing to a better comprehension of the complexity in the Israeli-Palestinian conflict. However, we also found that gender differences were a part of the barriers towards the use of educational computer games.

3.2 Barriers to consider for future development

To get a complete view of students' evaluation we also sketch the barriers found in the evaluation survey. When looking at previous games studies, the competition element in games must be balanced very carefully when developing games for educational use. In our game course, students expressed that the disadvantages of the game was the risk of competition taking over the seriousness in the topic of the game, i.e., gaming rather than really learning (Magnussen, Misfeldt & Buch, 2003). There is a difference in the way students compete that relates to gender differences: Our observations showed that boys are generally competing more on a game level, where girls are competing more on a content level. The boys' way of competing potentially leads to flaws in their learning experience, whereas the girls' way of competing provides them with an advantageous learning outcome.

Another barrier is the reputation that some students have due to cultural prejudices claiming that games are only useful for entertaining purposes, not for serious education. (Squire, 2004; Egenfeldt-Nielsen, 2005). In our study we found that this reputation led students to worry about the reliability of the game content, and insecurity about whether the game had a clear learning goal, which can partly be explained by the limits of the prototype.

The last barrier we found was a reluctance to accept the IT medium as a serious tool for learning. It was not all students that preferred IT.

These concerns should be considered along with the fact that we tested a prototype that had barely any game play, and that

needed more thorough character development and elaborate story line.

4. Conclusion

In this paper, we have discussed the learning qualities of a history course using the prototype "Global Conflicts: Palestine". As an attempt to keeping the requirements of the curriculum, the prototype was loaded with far too much factual information on the subject. Looking at the future development of the game, factual knowledge will be toned down in order to lower the complexity on the abstract level and emphasize the focus on a concrete level, namely diverse personal perspectives on the conflict.

The goal of the prototype was to present a topic through different personal perspectives that would make the students engage and involve them selves, and thereby getting a deeper understanding of the topic. The purpose was intended to make the students understand and relate to examples of human motives, dreams and hopes from real life, which play a leading part in the making of history. When embracing a multi-faceted understanding of this conflict, diversity is fundamental in order to move Western history curricula away from a Eurocentric paradigm (Calkins, 2005). When offering the students diversity of knowledge and backgrounds in a conflict like the one between Israelis and Palestinians, the students are learning cognitive tools for considering problems from a wide perspective. This is a crucial tool for the personal growth of a youngster, helping the student to become an autonomous, responsible and ethical adult.

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