

# Abstract - "Learning in play"

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Master's thesis by Mathias Poulsen (2008) (see <http://www.mathiaspoulsen.com>)

This thesis is founded on the belief, that the domains of computer games and learning are intertwined and inseparable; hence playing computer games is necessarily an act of learning. This seems trivial, but is nevertheless closely connected to one of the major misconceptions of the much criticized branch of learning games, edutainment. Developers of most edutainment-titles do not seem to have acknowledged the simple fact mentioned above, as edutainment often succeeds in separating game from learning in a futile attempt to conceal learning as an activity of mindless fun. As a consequence, neither game nor learning is of much interest, and edutainment is far from realizing the learning potential of all those great computer games, which were the source of inspiration in the first place.

Most people being serious about computer games as a tool for learning have by now left behind the faulty perception of learning represented in edutainment. One of the major steps forward has been made by the recognition, that if we are to succeed using computer games in education, those games must draw on the experiences of popular commercial games. When games are so often assumed to possess an immense, yet unleashed potential for changing the face of learning, the reference is implicitly to the potential of the magnificently grand and complex games of the commercial market. Many assumptions have been made about possibilities of games, yet the breakthrough of games in the educational institutions remains marginal and fragmented. However, by now it seems probable that this stagnation is slowly dissolving. Fighting the legacy of edutainment, a growing number of researchers have maintained the ever more qualified beliefs that computer games are actually to be seen as legitimate instruments of learning. Much important research on the subject is being done in these years, revealing both multitudes of possibilities and problems. One of the ever recurring themes is related to the simulative power of computers. The underlying logic is roughly as follows: pupils of today's schools are effectively

isolated from the world outside school, hence learning is primarily what is necessary for being in school, not for being in society. Computer games, on the other hand, can possibly bridge this gap and challenge the conservative approach to learning integrated in most schools. Computer games will allow pupils to learn according to the relevant learning principles of today's society and simultaneously pupils are allowed to participate in aspects of reality otherwise inaccessible. Through the virtual world of gaming, almost nothing is impossible or unthinkable. In theory, that is. If these great promises are to be realized, research must be accompanied by actual development of specific games for educational purposes.

This was exactly what sparked my initial interest. Within recent years, more and more developers have rejected the obvious inadequacy of edutainment and are now trying to make games which are actually good, interesting games in the sense that they're worth playing. If games are good, learning is an integral part of playing and players *want* to learn in order to play. It seems clear that edutainment haven't got much to offer on the part of *good* games and it is common wisdom to stay clear of failures. One way of dissociating from edutainment has been to re-label games for learning and the genre named *serious games* is to a great extent one such dissociating, critical reaction. The Danish company, Serious Games Interactive, has actively taken part in the critique of edutainment and is in the pursuit of creating interesting games, which are comparable to the popular commercial games. At the same time, Serious Games Interactive is firmly rooted in the Danish computer games research community, which potentially enables the extremely valuable integration of development and research. Their first game, Global Conflicts: Palestine is not perfect, of course, yet it clearly stands out as one of the best games intended for learning purposes. The game allows the player to participate in the complex and almost incomprehensible conflict between the Israeli and Palestinian people. In the game, the player assumes the role of a journalist with the assignment of covering the conflict from different angles and subsequently writing articles for different newspapers. Jerusalem and nearby locations are simulated in a virtual 3D environment, potentially affording the player a much better impression of what "it is like to be there" and hence a better understanding of the conflict and the role of the media.

As *Global Conflicts: Palestine* seems to mark a new departure in the aspirations of games in education, it was the obvious choice for a case-study, allowing for empirically uncovering the contemporary potentials of computer games. A field study in a ninth grade thus supplied me with a number of new perspectives and insights, which has been re-contextualized in a greater, theoretical framework. From the above, the overarching problem statement of this thesis can be deduced:

*Which problems and potentials are connected with the application of computer games as a resource for learning in schools?*

In general, *Global Conflicts: Palestine* proved to be a very successful and powerful alternative to the traditional primary use of books in Danish schools. Edutainment is often accused of focusing too narrowly or solely on motivation as the *raison d'être* of the entire connection between computer games and learning. This is just one of the misconceptions of edutainment, but that is not to say that the motivation of the learner is of no consequence. It must be clear, that motivation is but *one* aspect of learning with computer games. *Global Conflicts: Palestine* managed to mobilize and maintain a strong motivation among the pupils throughout most of the process. The one factor which by far superseded all the others in maintaining the motivation of the pupils was the sensation of agency. Where many regular school situations don't offer pupils the possibility of acting autonomously, *Global Conflict: Palestine*, being an interactive computer game, allowed the pupils to make choices, act upon these choices and thereby influence the world of the game. Agency and choice as the main appeal on a motivational level is closely related to the concept of challenge, as neither agency nor choice is of much interest, if they're not applied to challenging situations. The major challenge of the game is obtaining a "front page", which is the best possible evaluation in the feedback-system of the game. No-one, including myself, attained this, yet the act of trying was an important element, fuelling the motivation of the pupils.

During the recent decades, learning theory has been increasingly preoccupied with the social dimension of learning and the fact that learning is always situated in a specific context. As I in my field study had all the pupils divided into groups and playing in the same classroom, the experience was inherently social and the pupils participated in social interactions on a number of levels. Each group was playing together on a single computer and to a great extent collaborating in the process of achieving better results. Obviously, the degree of collaboration varied from group to group. In many groups the pupils were continuously, actively involved in joint negotiation concerning meaning and choices in the game. Obviously this is the preferred and most constructive way of working together, yet the constant involvement, negotiation and sharing of knowledge is also rather demanding. As a consequence, expectedly, at times, some groups were hardly communicating, leaving the actual playing to the one who was “in front of the computer”. Simultaneously with the single groups working with the game, a greater learning community emerged. In contrast to the rather demanding collaboration in the groups, the participation in this community seemed to unfold rather effortlessly. Along with the playing in the groups, the pupils were constantly communicating across group-boundaries, chattering, exchanging experiences and helping each other. This component of learning is often overlooked or even prohibited in school, yet much valued in society and repeatedly promoted in studies of computer games and learning. When communities like these are allowed to flourish, they underscore the value of distributed cognition and partial insights are considered a resource, not a shortcoming. No-one knows everything, yet amongst the participants in collaboration a great amount of knowledge and understanding is accumulated and thus available for application once required.

While striving to obtain the front page of the fictional newspapers of the game, the pupils had to change their perception about the conflict. Initially, their knowledge of the conflict was rather limited in most cases and therefore a necessary prerequisite of success was to add to the understanding of the two factions, Israelis and Palestinians. Talking to the two parties, trying to acknowledge the perspective of both, the pupils often had to submit themselves to expansive learning processes. On many occasions, this meant rejecting existing knowledge, when it proved inadequate. It meant, for instance, acquiring a personal perspective on the suicide bombings of

religious fanatics and the surviving relatives. It meant understanding, that neither Israeli nor Palestinians are evil by any universal standards and above all, it meant understanding that the conflict is a lot more complex, historically rooted and richly faceted than any superficial news-story might testify. Even though learning processes vary from person to person, most pupils achieved a somewhat more differentiated comprehension with multiple perspectives on the conflict. To master the game, it was required to understand and appropriate the epistemology of journalism. To obtain success, the pupils had to understand the principles of journalism, or at least the interpretation of these principles incorporated in *Global Conflicts: Palestine*. Even though none of these ninth grade pupils can be said to be full-blown journalists, they did to some degree succeed in thinking and acting like ones. They demonstrated a rather impressively developed understanding of the bias of different media, the role of the media and how both parties try to use and misuse media for their specific causes. They even managed to raise some rather sensitive, ethical questions regarding the legitimacy of lies in trying to achieve certain journalistic goals.

While the empirical study in general showed promising results, there is, quite expectedly, room for improvement. The game itself can be more challenging, technically more sophisticated and diverse for different playing styles. Along with the game came additional exercises printed on paper, which manifested itself as the one major malfunction. These were too difficult for the target group and in most cases led to a distinct breakdown in the otherwise constructive learning process. Even though the purpose of the exercises is legitimate and important, they ought to be integrated into the game in a much more elegant and suitable manner.

Finally, using a computer game like this greatly challenges the traditional teacher's position, which requires the teachers to re-evaluate their purpose and reconstruct their existing self-images. As pupils are working much more autonomously and in addition often possess a technical understanding far greater than that of the teacher, it is necessary for the teacher to shift from one-way teaching style to one that facilitates the reflections made by the pupils while playing the game.