

Game-based Learning for History: Student Perceptions and Preferences

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Abstract: With the rapid development of games in the 21st century, the panoply of games on history shows a wide variety. Backstories from most historical eras have been implemented in different game genres and modalities. Furthermore, a growing number of studies have pointed to the didactic potential of historical games as learning tools. This study aims at investigating university students' perceptions of gaming and their game preferences, with a particular focus on history. The research question to answer was: "What types of games do history students play, and how can games, in their view, contribute to learning in their subject?" Educational action research was used as the overall strategy in a study where data was collected from five different university course groups in general history at the basic level. Students answered questionnaires with open ended questions about gaming preferences and their perceptions of games. The answers were then analysed in an inductive thematic analysis. Findings show that the students play a mix of analogue board games, digital games and hybrid forms. In the transmedial array of games available, important genres include role playing games, strategy games, quizzes and first-person action games. The students frequently provide arguments for the use of games in history education, and they give reasons why they find a particular game useful for this purpose. They describe how these games have a potential to add value to history education. To some extent, they also discuss how this can be implemented. In conclusion, the authors argue that so-called technology tree games are particularly relevant to learning history from a structural perspective, while RPG:s can strengthen interpretive approaches through a subjective historical experience.

Keywords: Game-based Learning, History, Strategy Games, Technology Tree, Role-playing Games

1. Introduction

While different types of gaming have been around for thousands of years, digital games are a major part of modern culture to the point that games are now surpassing traditional entertainment media such as television and cinema. The majority of the population are in fact gamers, and games have become a frequently used learning tool in many subjects (Juil, 2009; Hellerstedt & Mozelius, 2020). Within the field of history education alone, a wide range of historical eras have been used as the setting for many different game genres and modalities. The idea of using games in history education has been discussed in academic research since at least the 1990ies and early 2000s (McCarty, 2001; Squire, 2003). Game-based learning for history education can be designed around tailored serious games, or with commercial-off-the-shelf (COTS) games. Examples of COTS games which have been used in history education are the series Age of Empires (Weir and Baranowski, 2011), Europa Universalis (Koabel, 2017) and Assassin's Creed (Looije, 2018).

In an earlier study, history teachers' gaming preferences were explored and also which games that could be integrated into curricula and lesson plans (Mozelius et al., 2017). This study aims at investigating university students' perceptions of gaming and their game preferences, with a particular focus on history. The research question to answer was: "What types of games do history students play, and how can games, in their view, contribute to learning in their subject?"

This article will present an action research study of the gaming preferences of history students at a Swedish university as expressed in questionnaire responses. After a short background and presentation of methodology, an analysis will follow, highlighting the game genres mentioned by the students and their reasoning around the educational benefits and uses of games, as well as potential challenges. In the final section, we will provide our conclusions from the study and some prospects for future work.

2. Games for History Education

The game most frequently discussed in research on games for history education is the Civilization series, originally developed by Sid Meier (with Bruce Shelley) in 1991 (Squire 2003; Fogu, 2009; Guys, 2012; Ford 2016). The basic concept and many central game mechanics from Civilization have been copied many times, while the Civilization series is still currently popular. The game can be said to have spawned a genre of its own, called "4X" (eXplore, eXpand, eXploit, eXterminate), describing the games' overall focus. One often discussed and copied element of the game design of this genre is the technology tree. A technology tree is a form of flow chart,

illustrating a civilization's progress in terms of technological, scientific, economic or cultural innovations. As we have shown in a previous literature study (Hellerstedt & Mozelius, 2023), researchers have pointed to the potential of strategy games in general and the 4X genre in particular in explaining causal mechanisms and structures in historical societies and their development. The interplay between factors such as economy, trade, science, diplomacy and conflict have been regarded as valuable features for history education, as has the technology tree concept. (Fogu, 2009; Guys, 2012; Wainwright, 2014; McCall, 2016; Hellerstedt & Mozelius, 2023). Learning and playing this type of game can, however, require many hours and has been recommended as an extra-curricular activity (Wainwright, 2014; McCall, 2016; Mozelius et al., 2017), while "the classroom instead serves as a venue for presentation, discussion, and analysis" of games (Wainwright, 2014, p. 581).

Previous research also describes the successful integration of game-based learning in history courses where game playing was combined with themed and detailed instruction (Squire, 2003; McCall, 2016). Wainwright (2014) describes how this can be done in a history class at university level. In this model, various aspects of history and how it is represented in the game mechanics were discussed critically and compared to the theories of prominent historians and social scientists.

From a critical perspective, many strategy games with historical themes have been considered to reinforce a Eurocentric narrative of world history while also suffering from gender bias. 4X games in particular often have an emphasis on war, competitive scientific development, international trade and aggressive expansionism. They sometimes also leave out highly controversial historical facts and developments (Fogu, 2009; Ford, 2016, Slocombe, 2019).

The aim of this study is to investigate university students' perceptions of gaming and their game preferences in general, with a special focus on games that involve history. As part of the HistoTree project, the study will also inform the implementation of games in future history courses at Miun in Sundsvall/Östersund, a largely distance based university in Northern Sweden. The research question that guided the study was: "What types of games do history students play, and how can games, in their view, contribute to learning in their subject?"

3. Method

This study was carried out with an action research approach. Action research has been presented as a practical but systematic approach "that enables teachers to investigate their own teaching and their student's learning" (Nolen & Putten, 2007, p. 401). Action research can be divided into various types, where this study was conducted in the British tradition of action research that has been described by Norton (2009, p. 71), as being something "that links research to improvement of practice and is education orientated". The research question to answer was: "What types of games do history students play, and how can games, in their view, contribute to learning in their subject?" The authors' overall objective is that the research results should have a positive impact on the future design of the involved courses.

One of the authors has also been a teacher in some of the course groups that data were collected from, while collaborating with other teachers at the department to include additional groups. Data were collected by questionnaires distributed in five different university course groups during the 2024 spring semester. Three courses can be classified as introductory, while the two other courses require prerequisites. With respect for personal integrity, respondents have been kept as anonymous as possible during the research process. We obtained 35 responses in total. The number of active students was 48, giving a response rate no less than 72,9%.

The questionnaires included six questions: 1. Do you play games of any kind regularly? 2. Which type of game do you play? 3. Do you believe that games can teach us anything about history? 4. If so, which games can, in your opinion, do so? 5. Do you play any games with a historical basis, in content, theme or aim? 6. Is there anything in the game/games that you believe can be particularly valuable for learning, and if so, what? The questionnaires were distributed through the course platforms and the students had several weeks (during the course of the spring term) to answer them.

3.1 Data Analysis

Data were analysed in an inductive thematic analysis according to the seven-stage approach recommended by Norton (2009). In a first stage of immersion, data were read and reread with the idea of getting familiar with topics and themes in the questionnaire answers. During this iterative reading, analytic ideas and suggestions for themes were written down as memos. In the following stage of a more detailed close reading the suggested themes and topics were revised to create preliminary categories. A third stage comprised deleting some of the

preliminary categories "to get rid of any categories that have only one or two examples in them, or any that overlap considerably with other categories" (Norton, 2009, p. 119).

This was followed-up by a fourth stage where remaining, relatively small and overlapping categories were merged to more substantial categories. This work continued in the fifth stage with a general rereading of the answers to check and revise themes and how they had been grouped into categories. Stage six looked at interrelations between the categories remaining from the previous, where authors also discussed potential super- and sub-categories for a taxonomy structure. Finally in the last stage, the remaining categories that contribute to answering the research question were presented, including quotes from respondents' answers, in an effort to achieve what (Norton, 2009, p. 120) calls an "analytical narrative".

4. Results and Discussion

The analysis shows that two broad game genres are particularly relevant to the teaching and learning of history in the eyes of the students: strategy games and role-playing games. The students specified several different learning affordances: games can motivate and facilitate the learning of basic facts, such as geography, dates, events and biographies of famous personalities. On a more advanced level, games are well suited for teaching structural explanation. However, they can also, according to the students, provide historical empathy and a subjective experience of the past. Table 1 summarizes the number of mentions of particular game titles, sorted by broad genres or types. Often, the same respondent has mentioned several titles.

Table 1: Games and game genres mentioned by respondents as *recommended* for history education

Genre/Title	Number
Strategy	25
<i>Age of Empires</i>	4
<i>Civilization</i>	5
<i>Europa Universalis/Svea Rike</i>	6
<i>Crusader Kings</i>	3
<i>Victoria</i>	1
<i>Hearts of Iron</i>	2
<i>Total War</i>	1
<i>Civil War (Grand Tactician)</i>	1
<i>Last Train Home</i>	1
<i>Romance of the Three Kingdoms</i>	1
RPG	10
<i>Assassin's Creed</i>	5
<i>Pentiment</i>	1
<i>A Plague Tale</i>	1
<i>Kingdom Come</i>	1
<i>Disco Elysium</i>	1
<i>Ghost of Tsushima</i>	1
Board games	4
Pen & paper RPG	3
Quiz	3
<i>Trivial Pursuit</i>	2

Genre/Title	Number
Smart 10	1
FPS	2
Battlefield	2
Chess	2
Educational games	2

4.1 Game Genres

The majority of respondents say they play on a regular basis, and they discuss a great number of games in their answers. Seven say they do not play regularly, although two of those still mention favourite games, indicating that they are at least occasional gamers or used to be in the past. Among games *played*, six mention first-person shooters (FPS), such as Counter-Strike (CS), and six mention strategy games among the games they actually play. However, no one mentions CS in the column for games that can *teach history*. Overall, a plethora of genres and a few specific games are mentioned in the games played category. 23 out of 35 mention computer/console games, either a specific title or, more often, generically.

The major genres mentioned as games that may teach history (*games recommended*) are computer strategy games (25), computer RPG:s (10) and board (4) and quiz games (3). Historical FPS:s (2) are also mentioned. In the *recommended* category answers are more specific than in the games played category. Strategy games mentioned include Civilization (5), Europa Universalis (5), Crusader Kings (4) and Age of Empires (4). 1990-ies Swedish language game Svea Rike, the pre-cursor of Europa Universalis and Crusader Kings, is mentioned once. Among computer RPG:s the Assassin's Creed series (5) is the most common, but a number of lesser-known titles are mentioned as well, such as medieval adventures A Plague Tale and Pentiment. Four mention board games (only one mentions specific titles, omitted here). Also mentioned are Chess (2), Trivial Pursuit (2) and quiz game Smart10 (1). Chess is mentioned by one respondent for training generic competencies like memory rather than any particular historical skills or knowledge. Three mention pen-and-paper role-playing games. Two respondents specifically mention computer games with a non-European setting as games recommended. It should be noted that the category "educational games" (2) refers to purpose designed games for education, as opposed to the other categories, which all refer to various types of commercial (off the shelves) games. The responses do not specify any particular educational games, hence the somewhat generic category.

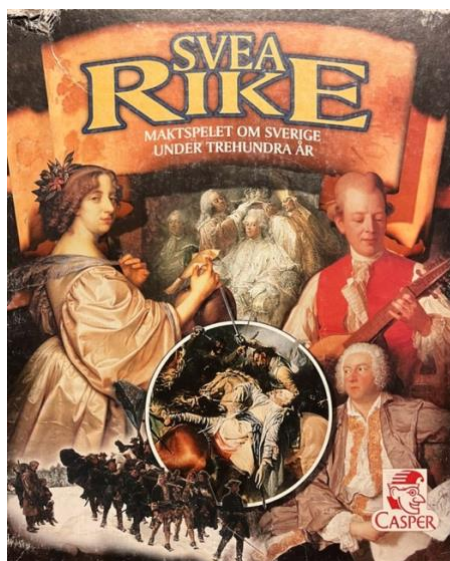


Figure 1: Original board game version of Svea Rike (1996). This game was subsequently developed into a digital game series. The computer game Svea Rike III was then retitled as Europa Universalis, itself the first in a successful series of games. Photo courtesy of Oskar Sjöström.

4.2 Learning Affordances

33 out of 35 respondents say that they believe games can teach history. The question therefore is rather what and how students may learn from games. Fortunately, many of the respondents were quite enthusiastic about this portion of the questionnaire and provided extensive discussions of this topic.

That games can draw students into history as an academic subject is perhaps the most obvious benefit of games for learning history. The fact that games with a historical setting can inspire and motivate was mentioned explicitly by six respondents, one even calling them a “gateway drug” to historical study. Another obvious positive outcome of gaming, although perhaps less often discussed, is the fact that games can teach basic facts (9). Historical geography is a particularly interesting aspect, which was stressed already in Kurt Squire’s seminal study on Civilization (Squire, 2003). Many of the games discussed above are set in the Middle Ages or the early modern period. The map of the world looked very different in those periods, and territories changed hands following conflicts and complex dynastic entanglements, some of which had massive consequences reaching down to the present day. Games such as Europa Universalis can provide students with an introduction to these aspects, and board and computer games alike have unique features which facilitate learning them. The medium is, at its best, well suited to visualizing geo-political relations and trade, but also timelines and various layers of dynamic historical development. It is important to point out that the respondents in this study often play both board games and computer games, not exclusively one or the other. Furthermore, the most common strategy games, the Civilization series and Europa Universalis and Crusader Kings, were either wholly or partly developed from board games. The basic mechanics are often similar, and while computer games can be said to benefit from impressive graphics, computing power, music and other advanced technical features, board games tend to be conducive to social interaction and a sense of community.

As already mentioned, nine respondents stress basic factual knowledge, which can be gathered from games in a variety of ways. This includes things such as famous or less famous events, biographies of historical figures, dynastic history and historical geography. Respondents often connect this type of learning to quiz games. Others point to games which include a “database” of factual historical information (in the AC series, like the “Civilopedia” included in the Civilization series since the early 1990-ies). This mechanism, which integrates factual knowledge into the game for a more directly didactical purpose, has been analysed and discussed as ‘Tangential Learning’ (Portnow & Floyd, 2008; Rath, 2015; Mozelius, Fagerström & Söderquist, 2017). While many respondents thus regard games as a valuable source for basic factual knowledge, many also mention the risks of game developers taking liberties with these facts. At least four discuss the problem that games often adapt historical facts to facilitate game play and commercial success. Others explicitly reject this however, stating that this is fine so long as the non-historicity is made clear. Interestingly, a similar point has been made by researchers. The important thing is not necessarily historical correctness, but the ability of the games’ mechanics to illustrate historical causality, social structure and explanation. This is especially true for higher level education and the teaching of historical theories (e. g. Fogu, 2009, Wainwright, 2014, Hellerstedt & Mozelius, 2023).

This leads on to the next important learning potential, which regards insights into “integrated relations of cause and effect”, as one respondent terms it, or “processes and connections” as another calls it. This is mentioned explicitly by four respondents. It seems logical to connect this type of deeper learning to strategy games of the 4X type, many of which implement the technology tree-mechanic in one way or another. Games such as Civilization are based on the interplay between variables such as production, trade, taxes, intellectual innovation etc, which in combination will produce different outcomes. Games of a more diplomatic/conflict orientation, such as Europa Universalis, provide an overview of complex causal interactions in a slightly different area.

Yet another and quite different aspect, which is mentioned by nine respondents, is the value of a subjective experience of history. This is described as games providing an understanding of “how life was lived in the Middle Ages”, for example. It ties in with an actor’s perspective and immersion into the historical game world, including “the communication with real or fictitious people”. The game *Pentiment* (released in 2022) is lauded by one respondent for its game-world inspired by medieval manuscripts, early prints and woodcut illustrations. The game is set in early 16th century Germany and involves an apprentice illuminator investigating a murder mystery. Respondents describe this aspect with terms such as insight or empathy (Sw. *inlevelse*, similar to Ger. *Einführung*) or immersion in the “atmosphere” of a period. This aspect is clearly connected to the RPG genre. In this way, the respondents describe games as a gateway not only to factual knowledge, theory or causal explanation, but to *experiencing* history as well. In this aspect, respondents describe how the potential of digital games can be utilized in a different and complementary area compared to strategy games. Through immersion, interactivity,

communication and interpretation, it can provide the feel for everyday objects, practices and ways of living. Such aspects are often lost in grand strategy games with a God's eye view perspective.

5. Conclusion

It is evident that the responses point to two major potentials in using games in learning history at the college/university level: 1. training the use of structural concepts and explanatory analysis and 2. providing an immersive, subjective experience. Basic factual knowledge should not be underestimated, but these are the two areas in which games seem to facilitate the teaching of history on an emotionally deeper or theoretically more advanced level. The two are connected to the two major game genres: strategy games and RPG:s. The two areas are distinct, if not entirely incompatible – a good strategy game can presumably provide an immersive atmosphere and a compelling narrative too, although this feature is more strongly related to RPG:s. The strategy games *Europa Universalis/Crusader Kings*, for instance, include a dynastic perspective, incorporating marriage alliances and the education of children as part of the strategic game. From an analytical perspective, the skills involved are different, with one corresponding to a structural view of society, and the other focused on individual actors and subjective experience. They therefore seem to train two different sets of skills: historical empathy and structural explanation. They seem to be the 'sense and sensibility' of the historical gaming world. But the two also correspond well to the two main strands in modern historical research: the first directed towards history as social science (social and economic history), the second resembling history as an interpretive humanities discipline (cultural and intellectual history, the history of religion, etc.).

Of course, factual errors or biased misrepresentations of historical figures, events or social conditions are a problem for all the aspects mentioned. The respondents to the questionnaire did not specifically mention problematic biases regarding gender or race and themes such as colonial, Eurocentric perspectives, although these are some aspects commonly discussed in studies of GBL and history (Ford 2016). The reason for this may partly be that respondents were not asked to discuss the strengths and weaknesses of one particular game. As has already been mentioned, they do also discuss games with a non-European setting (such as *Ghost of Tsushima*) and games that have been developed outside North America and Europe (such as the Japanese game series based on the medieval Chinese novel *Romance of the Three Kingdoms*). With such games becoming more popular in the West, perhaps a Eurocentric bias may be somewhat less of a problem than it has previously been.

6. Future Work

We plan to build on the results from this study and the results from the previous literature study by Hellerstedt and Mozelius (2023). In combination, these will provide a knowledge base regarding best practices and the specific preferences of Swedish students. During the 2024 autumn semester students on various courses in history will be assigned game playing with content aligned to the actual course syllabi. The students will evaluate the games and summarize their analyses in short essays. This will be the next step in the HISTOTREE project that is described in the section below.

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References

- Fogu, C. (2009) "Digitalizing Historical Consciousness", *History and Theory*, Vol 48, No. 2, pp 103–121.
- Ford, D. (2016) "'eXplore, eXpand, eXploit, eXterminate': Affective Writing of Postcolonial History and Education in Civilization V", *Game Studies*, Vol 16, No. 2.
- Guys, T. (2012) "Technology Trees: Freedom and Determinism in Historical Strategy Games", *Game Studies*, Vol 12, No. 2.
- Hellerstedt, A. and Mozelius, P. (2020) "Game-based learning: Three Historical Approaches for the Modern Classroom", *iGBL2019: Proceedings of the 9th Irish Conference on Game-based Learning*, ed. by Patrick Felicia, iGBL conference, Cork, pp 55–63.

- Hellerstedt, A. and Mozelius, P. (2023) "Teaching with Technology Trees: Game-based Learning for History Education", *Proceedings of the 16th Annual International Conference of Education, Research and Innovation, ICERI 2023*, pp 53–60.
- Juul, J. (2010) *A Casual Revolution: Reinventing Video Games and their Players*, MIT press, Boston.
- Koabel, G., (2017) Simulating the ages of man: periodization in Civilization V and Europa Universalis IV. *Loading...*, 10(17).
- Looije, N. (2018) Exploring History through Depictions of Historical Characters in Assassin's Creed Odyssey. *Journal of Teaching and Case Studies*, 9, 3.
- McCall, J. (2016) "Teaching History with Digital Historical Games: An Introduction to the Field and best Practices", *Simulation & Gaming*, Vol 47, No. 4, pp 517–542.
- McCarty, C. T. (2001) *Playing with Computer Games: An Exploration of Computer Game Simulations and Learning*, University of London Institute of Education, London.
- Mozelius, P., Fagerström, A. and Söderquist, M. (2017) "Motivating Factors and Tangential Learning for Knowledge Acquisition in Educational Games", *Electronic Journal of e-Learning*, Vol 15, No. 4, pp 343–354.
- Mozelius, P., Hernandez, W., Sällström, J. and Hellerstedt, A. (2017) "Teacher Attitudes Toward Game-Based Learning in History Education", *International Journal of Information and Communication Technologies in Education*, Vol 5, No. 2, pp 29–50.
- Mozelius, P., Bader, S., Jaldemark, J., Urbansson, P. and Engström, A., (2022) Educational Development-Challenges, Opportunities, Tools and Techniques. In *European Conference on e-Learning* (Vol. 21, No. 1, pp. 264-271).
- Nolen, A.L. and Putten, J.V. (2007) "Action Research in Education: Addressing Gaps in Ethical Principles and Practices", *Educational researcher*, Vol 36, No. 7, pp 401–407.
- Norton, L. (2009) *Action Research in Teaching and Learning: A Practical Guide to Conducting Pedagogical Research in Universities*, Routledge, Abingdon.
- Portnow, J. and Floyd, D. (2008) "The Power of Tangential Learning", *Edge Online*, Vol 10.
- Rath, R. (2015) "Game Criticism as Tangential Learning Facilitator: The Case of Critical Intel", *Journal of Games Criticism*, Vol 2, No. 1, pp 1–9.
- Slocombe, W. (2019) "Playing Games with Technology: Fictions of Science in the Civilization Series", *Osiris*, Vol 34, No. 1, pp 158–174.
- Squire, K. (2003) *Replaying History: Learning World History Through Playing Civilization III*, Ph. D. thesis, Indiana University.
- Wainwright, A.M. (2014) "Teaching Historical Theory Through Video Games", *The History Teacher*, Vol 47, No. 4, pp 579–612.
- Weir, K. and Baranowski, M., (2011) Simulating history to understand international politics. *Simulation & Gaming*, 42(4), pp.441-461.