Student Feedback on Archaeogaming: Perspectives from a Classics Classroom

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ABSTRACT

This study assesses student feedback from the implementation of *Assassin's Creed: Odyssey* as a teaching tool in a lower level, general education Classics course (CLAS 160B1 - Meet the Ancients: Gateway to Greece and Rome). In this course, which ran in Fall 2021, students were given the option to choose either a video game-based assignment sequence or a traditional reading response assignment sequence. Both assignment sequences required similar acitivities and output: reading primary and secondary source literature, reflecting on a question prompt, and writing an essay in response to the prompt. The primary difference was that students who opted for the video game sequence also completed a series of tasks within the video *Assassin's Creed: Odyssey*. After the course, students were provided with short quantitative and qualitative survey in which they could reflect upon their learning experience, and these results were then compared between the students who opted for the video game-based assignment sequence and the more traditional assignment sequence. Preliminary results show that students who opted for the video game assignment sequence gave, on average, high ratings with regard to their enjoyment of the course assignments and with regard to the amount of learning they felt they achieved. This suggests that the implementation of video game-based pedagogy may be a useful strategy for history, archaeology, and classics courses in the future. Caution is urged, however, due to the small sample size, the non-random sampling strategy, and the lack of objective learning outcome measurement.

Keywords: video games; archaeogaming; pedagogy; online education; digital humanities; case study

Introduction

The past decade has seen substantial declines in the number of humanities majors at universities throughtout the United States. A recent study by the American Historical Association demonstrated, for example, a decline of more than 20% in Humanities majors and a decline of more than 30% in History majors (Schmidt 2018). These declines, perhaps unsurprisingly, have also been accompanied by a substantial decrease in the number of students enrolled in these courses (Brookins 2018). While the causes behind this decline are mutlifaceted, it seems clear that Humanities disciplines need to innovate and evolve if they are to play a central role in higher education in the decades to come.

This project seeks to address these declines by testing whether innovative digital teaching methods may lead to greater student satisfaction and an increase in the achievement of learning outcomes. In particular, this project aims to better understand the problems and potential associated with integrating video games as a teaching tool in the Classics classroom. To accomplish this, this paper provides a systematic case study focused on a single Classics course (Classics 160B1: Meet the Ancients: Gateway to Greece and Rome) in which students had the option to choose either a video game-based assignment sequence or a traditional reading response assignment sequence. After the course, students were provided with short quantitative and qualitative survey in which they could reflect upon their learning experience, and these results were then compared between the students who opted for the video game-based assignment sequence and the more traditional assignment sequence.

Developing a better sense for the way in which students perceive the use of video games as a teaching tool, both its strengths and weaknesses, provides the potential to improve archaeology and history courses which may lead to icnreased enrollments, major declarations, and achievement of learning outcomes.

Literature Review

Video Games as Pedagogical Tools

The idea behind using video games as a pedagogical instrument is to meet students where they currently are. The prevalence of video games and gaming has increased dramatically in recent years, and the industry as a whole has recently surpassed a valuation of $100 billion, catering to more than 2.5 billion gamers globally (Gough 2018). College campuses in particular are hubs for gaming activity, with over half of students engaging in video games occasionally or regularly, as shown by a comprehensive study involving 1,000 student responses from 27 colleges (Jones, 2003). These habits are cultivated at younger ages, with Cole (2012) highlighting that high schoolers, on average, play approximately 12 hours of video games per week. Moreover, the frequency with which games have been used as teaching tools has been increasing as well, with Takeuchi and Vaala (2014) suggesting that nearly three-quarters of teachers have used video games in their pedagogy at least once during a five year span in the 2010s. Most college students, then, have experience playing video games, and many play video games for fun in their free time.

Educational research spanning two decades has demonstrated the advantages of integrating video games into classrooms (Brown 2008; Barr 2018; Gibson et al. 2007; Khine 2011; Pitarch 2018, Squire 2011; Young and Slota 2017), particularly in history and archaeology (Mol et al., eds. 2017; Mol et al. 2016; Politopoulos et al. 2019b; Reinhard 2012; Reinhard 2018). These studies have suggested several benefits with regard to learning. Empirical evidence suggests that video games help foster students' emotional connection toward the subject material, provide them a platform for iterative feedback and skill honing, promote dynamic engagement, nuture innovative cognitive processes, and enable the broadening of perspectives (Griffiths, 2002; Mitchell & Savill-Smith, 2004). This assertion finds reinforcement in a meta-analysis conducted in 2016, encompassing 57 studies centered on video game pedagogy, which substantiated a noteworthy and statistically meaningful enhancement in the attainment of educational objectives among students who participated in digital gaming interventions, as compared to their non-participatory counterparts (Clark, Tanner-Smith, & Killingsworth 2016).

These findings have been supported within the fields of archaeology and history. In 2008, a study conducted by Squire et al. exhibited that students engaging with the historically-embedded game series *Civilization* expressed heightened enthusiasm for historical subject matter in contrast to their peers who were exposed to conventional text-based and lecture-based instructional approaches. Over the course of

Commented [A1]: I am struggling to follow the argumentation here a bit.
I can see how student satisfaction could be related to student numbers, but it is not a given, and it's not stated as one of the possible reasons for decreasing numbers in the humanities. Students may be happy with their studies, but still the studies can be unpopular with the wider student population. I can see the connection, but I think it needs to be made more explicit. For the increase in the achievement of learning outcomes, I don't really see the relationship with the decreasing student number. I agree that this is an important educational aspect. Overall, I think the argument about student numbers may be weakening your position here. You are using innovative educational methods and that is important in and of itself.

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87   the last decade, McCall and other scholars have consistently advocated for the utility of video games in
88   inciting interest within the field, replicating historical scenarios, and facilitating dynamic involvement in
89   historical decision-making (McCall, 2013, 2014, 2016, 2019). Mol et al.'s work, "The Interactive Past"
90   (2017), presents a compelling argument regarding games' efficacy in conveying cultural knowledge and
91   engaging users actively with archaeological sites. *Minecraft*, for instance, has been employed to give users
92   the ability to construct and explore cultural heritage (Mol et al., 2016: 14; Boom et al., 2020: 39-41), and
93   Politopoulos' (et al. 2019b) *RoMeincraft* lets students reconstruct infrrastructure and explore a digital
94   version of the Roman frontier.
95   There are, however, significant obstacles to implementing games in the classroom. Financial
96   constraints arise due to costly software (around $60 per student) and premium hardware requirements for
97   graphics-intensive games, which can exceed $300. Steep learning curves and mature content ratings pose
98   challenges, with games like *Red Dead Redemption 2* demanding considerable time and often containing
99   violent elements. Moreover, balancing fiction with factual content presents pedagogical difficulties, as
100 seen in everything from *Civilization* to *Assassin's Creed*.

101 **Assassin's Creed : Odyssey**
102
103   This case study uses Ubisoft's 2018 epic adventure *Assassin's Creed: Odyssey* as the focal point for its
104 video game assignment sequence. The game itself is an action-adventure role playing game, and the user
105 plays as a protagonist caught in the middle of the Peloponnesian War between Athens and Sparta (431-
106 404 BCE) within the larger setting of the Classical Greek world.
107   *Assassin's Creed: Odyssey* has garnered both critical acclaim and commercial success. Within its debut
108 week, it sold more than one million copies, contributing to the series' cumulative worldwide sales of over
109 140 million copies to date. The game has garnered nominations for numerous industry awards and has
110 consistently received laudatory reviews, with particular emphasis on its meticulously crafted setting
111 (Metacritic, 2018). The game's intricate depiction of the ancient Greek terrain, encompassing cities,
112 temples, and everyday life is particularly noteworthy. This accomplishment is not merely a driver of the
113 game's excellence or popularity; it also highlights the potential utility of this immersive digital environment
114 as a novel means to engross students in the landscape of ancient Greece.
115   However, the game was designed for commercial success, resulting in the inclusion of several elements
116 that raise issues concerning its suitability for educational settings. The levels of historical accuracy within
117 the game exhibit a notable variance. While the portrayal of the Temple of Zeus at Olympia largely adheres
118 to the archaeological and historical evidence, other architectural details lack comparable accuracy. The
119 Parthenon, for instance, is presented as a Doric temple replete with triglyphs, metopes, and pedimental
120 sculptures; however, this sculptural arrangement deviates from established archaeological and historical
121 evidence. Furthermore, the characterization of historical figures prioritizes alignment with the game's
122 narrative progression over strict historical precision, and the game's focus on an individual protagonist
123 results in a style of warfare that markedly contrasts with the phalanx-based combat of Archaic and Classical
124 Greece. While certain locales such as Athens offer an immersive urban environment, others, such as the
125 plethora of wooden forts, are criticized for their repetitive and generic nature (Politopoulos et al., 2019a:
126 319-22). Moreover, the inherent violence embedded within the game poses a substantial impediment to
127 its applicability in pedagogical contexts, and the central questline can require over 50 hours to complete,
128 making it difficult to use , and the engagement in optional quests necessitates an additional gameplay
129 duration exceeding 100 hours (HowLongToBeat, 2019). In fact, it demands more than five hours of
130 gameplay to reach the introductory credits alone.
131   Ubisoft has aimed to solve these concerns through the introduction of the Discovery Tour mode in its
132 development efforts. This mode offers game players unrestricted access to the entire virtual world,
133 eliminating the warfare component while enabling exploration of the digital landscape (Dingman, 2019).
134 Moreover, it presents curated guided tours led by archaeologists and historians, encompassing diverse
135 locales, urban areas, and landmarks, with the explicit aim of educating interested gamers and students.
136 Poiron, a consultant on the Assassin's Creed: Origins Discovery Tour mode, underscores the meticulous
137 research and curation underpinning the creation of these educational segments (Poiron, 2021). While
138 some scholars perceive this as a valuable educational instrument (Hotton, 2018), others critique the
139 Discovery Tour mode for its diminished interactive quality compared to the core gameplay (Mol, 2018).

140   Preliminary scholarship on the use of *Assassin's Creed: Odyssey* as a teaching tool has produced mixed
141 results. Essentially, scholars are grappling with Politipoulos' (2019a) question, "do we engage in meaningful
142 play with the past, or are we simply assassinating our way through history? (317)." Gilbert's 2019 study
143 that assessed student feedback regarding video game based learning suggested that students were indeed
144 more engaged in the material but often missed opportunities for deeper investigation. And Politopoulos
145 (et al. (2019a: 322) suggests that the action of *Assassin's Creed* is more akin to a blockbuster movie than
146 to a simulation of historical social, economic, political, or military dynamics. These students suggest, then,
147 that the game holds potential as a useful pedagogical tool, but it is necessary to thoughtfully design
148 learning activities for students rather than rely on solely on the game's main storyline or Discovery Tour
149 mode.

Methods

151   This IRB-approved case study took place during the Fall 2021 semester within my asynchronous online
152 course, Classics 160B1: Meet the Ancients: Gateway to Greece and Rome. The goal was twofold. First, it
153 aimed at gathering qualitative and quantitative student feedback regarding the use of video games as a
154 teaching tool in the college classroom. Second, the study aimed to evaluate the relative strength of this
155 new teaching method by comparing it to more traditional pedagogical methods.
156   To accomplish this, the 266 students enrolled in the course were given the option to complete one of
157 two assignment sequences. The video-game based sequence asked students to complete a series of 6
158 assignments In which they would explore some component of the game, read an excerpt from an ancient
159 text, and write a 300+ word essay. The traditional sequence asked students to complete a series of 6
160 assignments in which they focused solely on reading an ancient text and writing a 300+ word response.
161 Thus, in both sequences students were asked to engage with ancient texts and produce 300+ word written
162 responses. By running parallel assignment sequences within a single course, and constructing similar
163 assignment deliverables, the aim was to better isolate the impact of video games on student perceptions
164 of the teaching and learning process.
165   After completing the course, students were sent an IRB-approved survey that consisted of 14 questions,
166 including yes/no, Likert scale, and free response questions. These questions were meant to get a sense for
167 prior video game experience, assignment sequence enjoyment, and specific characteristics of each
168 assignment that increased student learning. The survey included the following questions:
169   1. Do you play video games outside of this class? (yes/no)
170   2. About how many hours a week, if any, do you spend playing video games for fun? (numerical)
171   3. Have you played any games in the Assassin's Creed series before this class? (yes/no)
172   4. Have you played Assassin's Creed: Odyssey before this class? (yes/no)
173   5. Which assignment sequence did you complete? (binary)
174   6. How much did you enjoy the assignment sequence you chose? (1=a little, 10=a lot)
175   7. How much do you feel you learned through your assignment sequence? (1=a little, 10=a lot)
176   8. What do you think worked particularly particularly well about your assignment sequence? (free
177   response)
178   9. Which module's assignment did you enjoy the most? (1 through 6)
179   10. Why was that assignment your favorite, and how did it help you learn? (free response)
180   11. What do you think did not work very well with your assignment sequence? (free response)
181   12. How would you modify your assignment sequence for future classes? (free response
182   13. What are your overall thoughts on your assignment sequence?
183   14. Are there any other games you think would work well to help teach about the past?
184   Student responses from the two assignment sequences were then compared to assess their relative
185 enjoyment, self-perceived learning, and qualitative thoughts on the assignment sequence of choice. The
186 goal of this comparison is to isolate the marginal benefit or cost of employing video games as a teaching
187 tool in a more controlled and systematic manner.

Results

Quantitative Student Feedback

Out of the 266 students in the course, only 26 students (9.8%) completed the survey. These responses were relatively evenly split between students who completed the video game assignment sequence (n=14) and the traditional assignment sequence (n=12). The first clear takeaway from these responses is that students appear to have selected their assignment sequence based on their previous gaming experience. Nearly all students who chose the video game sequence (93%) played video games recreationally outside of class, while only about half (58%) of students who chose the traditional sequence played games for fun. Likewise, more than 1/3 of students (36%) who chose the video game sequence had played *Assassin's Creed: Odyssey*, while none of the students who chose the traditional sequence had played the game. In short, previous gaming experience appears to have a major impact on the appeal of the video game learning modality.
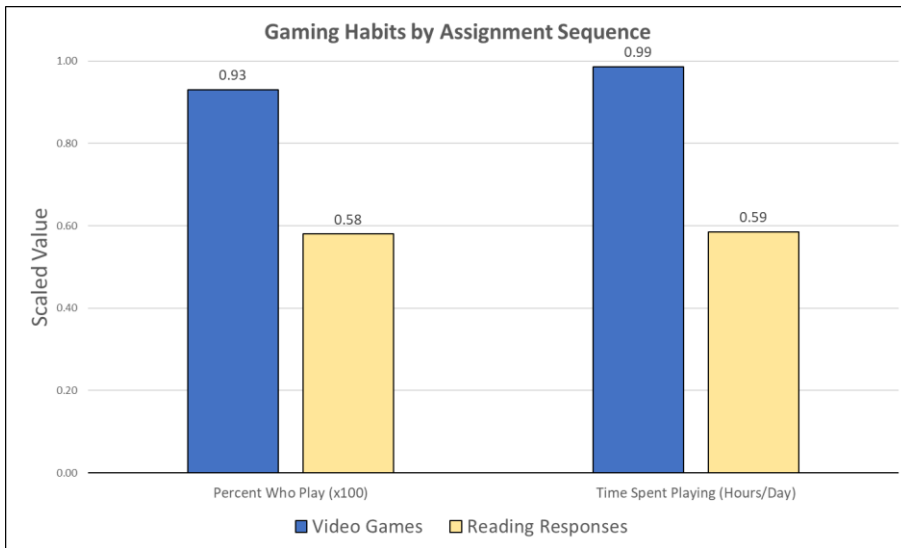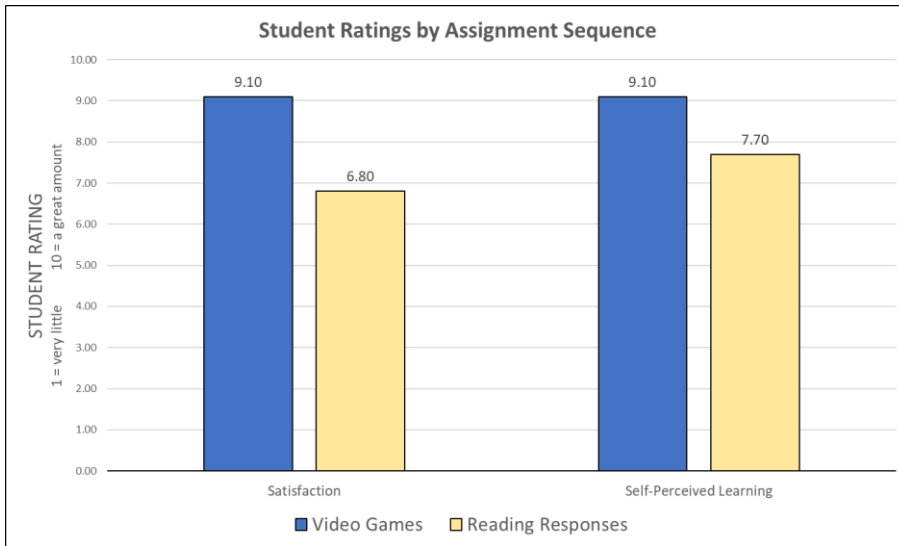

Figure 1 – Gaming Habits by Assignment Sequence

Quantitative student responses suggest strong levels of student satisfaction and self-perceived learning from those who opted for the video game assignment sequence. The question regarding the degree to which students enjoyed their respective assignment sequences led to an average score of 9.1 from the video game students and an average of 6.8 from the traditional assignment sequence students. Average scores regarding students' self-perceptions of learning led to similar results, with video game students producing a score of rated the amount they learned from the assignments as a 9.1 out of 10, while the traditional assignment students felt like they learned a 7.7 out of 10. It is important to reiterate that these are self-perceptions of student learning rather than differences in the actual achievement of learning outcomes, but nonetheless the differences seem significant in scale.

Figure 2 – Student Ratings by Assignment Sequence

Student Ratings by Assignment Sequence

STUDENT RATING 1 = very little   10 = a great amount

	Satisfaction	Self-Perceived Learning
Video Games	9.10	9.10
Reading Responses	6.80	7.70

■ Video Games □ Reading Responses

213

214   **Figure 2** – Student Ratings by Assignment Sequence

215 **Qualitative Student Feedback**
216   The free responses questions help illuminate the specific aspects of the video game assignments that
217 students found both beneficial and frustrating. The most common aspect of the video game assignments
218 that was noted by students as a positive contributor to their learning experience was the visualization of
219 the ancient Greek natural and built environment (5 of 9 students). One student noted, "I think that the
220 ability for us as students to explore the ancient world worked really well for the assignments. Actually,
221 seeing the different ruins and temples in the game really helped with learning about the ancient world."
222 Another commented, "The way the game was set up allowed me to be fully engaged and for once. Learning
223 history was not boring [and] seeing actual [the] representation of Greece allowed me to retain the
224 information more. The Discovery Tour was very useful which allowed me to just learn and explore."
225   The second most common positive quality for the video game sequence centered on the interactivity
226 of the assignments (3 of 9 students). One student said, "I felt as if I retained the information learned
227 throughout the assignments more than what I traditionally would with just a textbook reading. The video
228 game assignment allowed me to get more interactive and I've always found that to help me more than
229 anything when learning something new. It was a breath of fresh air for the semester!" While another
230 stated, "I enjoyed the fact that it was different and more interactive than any other class I've done."
231   In terms of drawbacks, students highlighted difficulties in finding correct locations within the virtual
232 gaming environment (2 of 9 students). One student, for example, commented, "If I had to choose
233 something I'd say it could improve by giving us a general idea of where exactly to go within the explorative
234 setting just in case some people find it hard to know where to look." Another noted, "The one thing I
235 thought worked the least would have been at one point I couldn't find a certain location but with the help
236 of my husband I was able to find it within the game. Truthfully that wasn't even that much of a hassle
237 though, it's just all I could think of to be a bump in the road."
238   Students also found the alignment between some of the video game assignments and the lecture
239 material to be misaligned at times (2 of 9 students). One mentioned, "I thought the early AC:O assignments
240 lined up very well with the course content every week. I thought it was an extension of our lectures and
241 helped further our learning. I personally enjoyed the final three assignments the most, but it felt more
242 disjointed from the lecture content that was more focused on the Romans." A second student observed,
243 "This course is split in two halves. Essentially an emphasis on Greece and another emphasis on Rome. Is it

244 possible to incorporate gameplay that could accommodate Rome? Maybe the total war series have a
245 historical battle of Cannae."

Discussion

247   The results from this student suggest video games hold potential to increase student satisfaction and
248 learning within the realm of history and archaeology courses. Student scores regarding their enjoyment of
249 the assignments were substantially higher for the video game assignment sequence than the reading
250 response sequence, and students also self-reported higher levels of learning from the video game
251 assignments. These preliminary results align well with previous studies on the use of video games as
252 teaching tools, especially the conclusion that students appear to find video games as useful for building
253 interest in and satisfaction with the course (Mol et al. eds. 2017). Clark et al's 2016 meta-analysis, for
254 example, noted similar trends with student feedback with regard to these characteristics.
255   Despite this potential, the limited scale of this study raises several new questions and directions for
256 future investigation. Simply increasing the scale and scope of the study would, of course, be beneficial. It
257 would be useful, for example, to see whether these trends hold if the entire class of 260+ students were
258 to respond to the survey. Since this was tested in a lower level, asynchronous online course, it would be
259 helpful to know whether these trends hold at different levels and in different modalities. Do we see similar
260 results in upper level courses or in in-person or hybrid courses? One of the most logical next steps would
261 be to test the impact of video game integration on the actual achievement of student learning outcomes,
262 rather than student perceptions of learning. Adžić (et al.'s 2021)'s study suggests that this may, indeed,
263 produce similar results, but running a similar study using these assignments would be a useful next step.
264 Finally, given the substantial difference in gaming experience within the two groups of this study, it would
265 be useful assess the way in which students who do not regularly play video games respond to video game-
266 based assignments.
267 There is certainly room for far more robust research on the topic. The preliminary results of this study,
268 however, suggest that integrating gaming into the history classroom has the potential to dramatically
269 impact students' perceptions of both enjoyment and learning of the course material.

> **Commented [A3]:** I think this is an important clarification to make earlier in the text, as it is an important question to ask whether students who don't play video games would benefit from video game assignments. I think it's worthwhile earlier in the text to explain why you chose to not address this issue.

> **Commented [A4]:** No need to undermine your own research, these are important results

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Data, scripts, code, and supplementary information availability

278 Data are available online: https://doi.org/10.5281/zenodo.8221583.
279

Conflict of interest disclosure

281   The author declares that he complies with the PCI rule of having no financial conflicts of interest in
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