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# History Games for Boys? Gender, Genre and the Self-Perceived Impact of Historical Games on Undergraduate Historians

Robert Houghton

## Abstract

Historical games have a demonstrable impact on the development of their players' formative understanding of history and it is increasingly clear that these media influence perceptions of history in the undergraduate classroom. This article considers the interactions of game genre and player gender identity as determining factors for the impact of historical games on undergraduate perceptions of history through a survey (n=172) conducted at the University of Winchester. The article highlights correlations between maleness, strategy and action games, and high levels of reported influence of games on historical understanding. On this basis, it argues that genre of game is the main driver for influence over historical perceptions and that gender identity correlates indirectly with this influence.

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This article addresses the relationships between gender, genre and the impact of historical games on undergraduate perceptions of the past. The influence of historical games on their players' interaction with the past is increasingly apparent through anecdotal accounts, (Elliott and Kapell 2013, 3-4, Jeremiah McCall 2019, 38-39) and through a growing number of observational, reflective and interrogative studies – many of which are summarised by Beavers in her doctoral thesis (Beavers 2020, 15-18). This research has highlighted the extensive and growing influence that computer

games can have on public perceptions of the past and history (Conrad, Létourneau and Northrup 2009, Houghton 2016, Beavers 2020). In short, games can exert a substantial impact on their players' interest in and knowledge of history, but this can vary substantially between individuals.

Historical games are also increasingly important within the university classroom. Numerous approaches to the use and development of these games for educational purposes have been advocated and demonstrated in practice. Games have been used to introduce historical periods, regions and themes (Jiménez Alcázar 2011, Spring 2015, Chapman 2016, Vas 2017). They have been deployed to analyse historical arguments through play (Whelchel 2007, Lee and Probert 2010, Pagnotti and Russell 2012, Apperley 2013, Ortega 2015, Vas 2017, Boom et al. 2020). The student led creation and modification of games has been presented as a form of interactive historical debate (Graham 2014, Kee and Graham 2014, Koebel 2017, Houghton 2018, Boom et al. 2020). The potential of games as scholarly historical research tools has been posited and several games have been developed or are under development with this purpose in mind (Clyde, Hopkins and Wilkinson 2012, Antley 2012, Jeremiah McCall 2012, Spring 2015, Carvalho 2017, Houghton 2018, Houghton forthc.).

As a result, it is increasingly important for university level educators to understand not only the historical accounts which these games present and the methods by which they communicate these accounts (Elliott and Kapell 2013, Houghton 2021, Houghton forthc.), but also how the extent of their influence may differ between individuals and across different demographic groups. If lecturers are to adjust the content of their teaching to account for the formative impact of historical games on their classes, then it is necessary to ensure that these adjustments do not disadvantage any groups or individuals who have not been influenced by games to a

substantial extent. More significantly, if teaching is to incorporate game play and design it is fundamentally important to ensure that the foundational ludic and digital literacies which facilitate these approaches are available to the entire cohort and that no group is at risk of exclusion (Gee 2003, Leonard 2003, McCall 2016). As McCall underlines, it cannot be assumed that all students will be enthused by or engaged with the use of games in class (McCall 2016, 532-33).

There are, in particular, potential risks that using games for teaching may be exclusionary along the lines of gender, race and sexuality. Although the stereotype of gamers as exclusively male, white and straight is increasingly outdated (Rehbein et al. 2016, Vermeulen and Van Looy 2016, Kowert, Breuer and Quandt 2017, Paaßen, Morgenroth and Stratemeyer 2017, Kort-Butler 2020), it is nevertheless undeniable that the vast majority of games are still created primarily for this group (Nakamura 2012, Hammar 2020), and may contribute towards the alienation and exclusion of anyone outside this perceived core audience (Shaw 2012, Kowert, Breuer and Quandt 2017, Hammar 2020).

It is also important for educators to consider the manner in which different types of games influence their students. Adventure and Action-Adventure games such as *Assassin's Creed* (2007-2020) have been posited as useful tools for introducing students to particular regions and periods using their carefully constructed and often spectacular graphics to spark interest amongst their players (Jiménez Alcázar 2011, Peterson, Miller and Fedorko 2013). Strategy games such as *Civilization* have been suggested as useful exploratory tools for analysing complex historical systems and theories on the basis of their detailed mechanics and the gameplay this produces (Chapman 2013b, Wainwright 2014, Vas 2017). Chapman's (2016) dichotomy between *realist* games (which represent history through their audio-visuals) and *conceptual*

simulations (which do so through their mechanics) is a useful model here: different games represent history in different ways and understanding these nuances is vital when developing teaching through games.

This article addresses the discrepancies in the self-perceived impact of historical games between male and female undergraduate students and the role played by genre preferences in the emergence of these differences. In doing so, it argues that while male students typically feel that games have a more profound impact on their interactions with history than female students, the correlation is not immediately causal. Instead, the findings suggest that the genre of games played is a leading influence on their impact in undergraduate interest in and understanding of history. The findings also suggest that the genres which are most influential are those commonly dominated by male players and this appears to be a key causal link between gender and perceived impact. Ultimately, the article considers the importance of these findings for the structuring of teaching around students' prior experiences of games and their relevance when incorporating games into learning activities.

This study revisits and develops a preliminary research survey published in 2016 (Houghton 2016). This earlier survey (n=41) addressed the impact of computer games alongside several other media formats on undergraduate perspectives of various historical periods and was fundamentally and consciously limited: the sample size was small and participants were purely self-selecting. The current research engages with the findings of the initial study on the basis of recent publications and a substantially larger (n=172) and more robust sample of respondents. The quantitative approach adopted within this article allows the construction of a new perspective around the varied impact of games on different audiences while the data and analysis presented

here provides an important resource for the consideration of the well-established limitations and concerns which surround the use of games in the history classroom. This study is in no way intended as a conclusive or final word on this matter: it is restricted by sample size and locality; it cannot comment meaningfully on the impact of games on non-binary or genderqueer students; and it does not address the intersection of gender with other demographic characteristics (including but not limited to sexuality, racial identity, nationality, age or social class). Nevertheless, the study highlights some important trends and avenues for further research.

## Hypotheses

This article presents four inter-connected hypotheses:

- 1) Games can substantially influence their player's interest in and perceived understanding of history, but this influence is not universal.
- 2) Games of different genres influence their players in different ways and to different extents.
- 3) Male students are typically influenced more strongly by games than female students, but there is substantial variation within these groups.
- 4) Difference in genre preference along gender lines is a principal driver of the discrepancy in influence of historical games between male and female students.

## The Varied Influence of Games

The preliminary study suggested that while computer games were less potent on average than several other forms of media in terms of influencing both student's interest in and understanding of history, numerous individual students reported computer games to be particularly influential. This was balanced by a substantial



body of students who reported that games had little or no influence on their interest in history or their understanding of the past. In short, games seemed to have either a substantial or very limited impact on students (Houghton 2016, 24-25).

As demonstrated through the various studies highlighted above, the potential impact of games on their players understanding of history is immense. However, the relative impact of games on students' formative perceptions of the history may limited by a number of factors. At its most basic, the impact of games is restricted by audience size. While the number of players has steadily increased over recent decades, there remains a substantial proportion of the population which does not engage with computer games. Kort-Butler's (2020) recent survey (n=896) of undergraduate students at a large public university in the USA found that 62% of the sample reported that they did not play games. Although a substantial proportion of the population of several countries report playing games, this proportion remains significantly lower than those who engage with television, cinema, or literature (Hamilton and Ashton 2003, Conrad, Létourneau and Northrup 2009). No matter how great the influential potential of games, they cannot influence the perspective of those who do not engage with them.

Other factors may also be at play here. Even within the game playing population, only a proportion play games which they would consider historical. Although games with historical settings and themes such as the *Battlefield* (2002-2018), *Assassins' Creed* and *Civilization* series (1991-2016) are among the best-selling, substantial market share is also commanded by games which have little or no historical bearing ranging from *Pokémon* (1996-2019) and *Tetris* (1984) to *Grand Theft Auto* (1997-2013) and *Mass Effect* (2007-2021). Again, no matter how great their potential, historical games cannot influence those who do not engage with them. The extent of play may also a

factor here: those who play games regularly and for prolonged periods are more likely to be influenced than those who play intermittently for shorter periods and are more likely to view them in a positive light (Kort-Butler 2020).

The basis of impact of any media is in large part driven by audience interaction with this media. As such, this paper hypothesises that fewer students will report engaging with historical games than any other type of historical media and that these students will typically report either a profound or negligible impact of games on their formative interactions with history. The mean impact across the student body can likewise be expected to be amongst the lowest of all historical media as despite the proliferation of games and gaming devices, the medium remains less accessible than books, film, education or most other forms of media.

**Genre**

The initial study suggested that while action and adventure games such as *Assassin's Creed* or *Uncharted* (2007-2017) and real time strategy games such as the *Age of Empires* (1997-2020) and *Total War* series (2000-2020) tended to play a greater role in developing students' interest in history (Houghton 2016, 26), strategy games such as the Paradox Interactive historical games were more influential on students' understanding of the past (Houghton 2016, 26-27). Other genres of game did not appear to be influential in either regard.

The pronounced impact of these particular types of game can in large part be explained by the fact that historical games most frequently fall into these genres. As Rochat (2020, 11-12) has demonstrated, the significant majority of games with a historical setting fall into the strategy genre, with action and adventure genres

encompassing the majority of the remainder. It is therefore unsurprising that students tend to report greater impact from games of these genres.

However, this distribution of production does not fully explain the varied impact of historical games of different genres. Games are a phenomenally diverse medium not only in terms of content, but also, and more significantly, in the ways in which they present their stories and worlds. Broadly speaking, these variations in approach are represented through genre classification of games. First Person Shooters or Action Games tend towards impressive visuals and reflex based game play, often (but not always) at the expense of world building, characterisation, and plot. Strategy Games and Puzzle Games are typically slower moving and more abstract with an emphasis on mastering the logic of the game. Role Playing Games usually emphasise deep stories and complex worlds alongside meaningful set pieces. All of these approaches can produce effective and entertaining games, but they can produce fundamentally different experiences for the player.

In the case of historical games, Chapman has developed a useful categorisation. Chapman envisages games existing on a scale between *realist simulations* and *conceptual simulations* (Chapman 2016). Realist simulations focus on providing high levels of graphical and audio fidelity to create their history and tend to include games in the Action and Adventure genres. Conceptual simulations instead tend to be more graphically basic and provide history through their mechanics. Their rules create abstract and limited, but holistic and internally consistent models of an element of history. These games tend to be significantly more complex than realist simulations and fall within the strategy, city building, or management genres. Between these two extremes lie a plethora of games which tell history through a combination of graphics and rules – very often games in the Real Time Strategy and Roleplaying genres.

Games at opposite poles of Chapman’s dichotomy tend to influence their players in fundamentally different ways. Realist simulations tend to act as a means to grab a player’s attention and gain their engagement and interest in a period or event, but their relatively simple rules ensure that players do not learn very much directly from the game (Chapman 2016, 61-69). In contrast, conceptual simulations are less effective at gaining a player’s attention as they do not provide as welcoming or visually appealing an environment (Chapman 2016, 70-71). However, these conceptual simulations have substantially more potential to influence their player’s understanding of the past: they require their players to engage with and learn the game’s mechanics and corresponding historical arguments in order to progress (Chapman 2016, 72-79).

Beyond this, the historical impact of games of some genres may be limited by common tropes associated with that genre. Roleplaying games can be posited as a particular example of this: while their deep stories could easily form the basis of developing an interest in a historical period, the genre as a whole is dominated by fantasy and science fiction settings (Houghton 2016, 27-28). Likewise, other genres including racing and puzzle games rarely engage with historical settings to anything more than a superficial degree.

As a result, it can be posited that games within the genres associated with realist simulations (Action and Adventure games) will typically have a greater influence on students’ interest in history while those more closely aligned with conceptual simulations (such as Strategy Games) will usually impact students’ understanding of history to a greater degree. Other genres which rarely engage with history in a meaningful way can be expected to have a negligible or non-existent impact.

**Gender**

The previous study found that male respondents typically reported games to hold a significantly greater impact in developing their interest in all historical periods than female respondents and that this discrepancy was substantially larger than for any other media along gender lines (Houghton 2016, 28). This earlier study also found that male students tended to report greater influence of computer games on their understanding of history, although this difference was less pronounced and could not be verified on account of the small sample size (Houghton 2016, 23). Conducting a revised and specialised survey with a greater number of participants is necessary to verify this hypothesis (Houghton 2016, 28).

The stereotype of game players (whether digital or physical) as almost exclusively male is outdated. Repeated studies have demonstrated that games in general are played by almost as many (if not as many) women as men (Kowert, Breuer and Quandt 2017, 197-98). Other stereotypical features of assumed gamer demographics have also been challenged quite conclusively in recent years – such as gamers as predominantly white (Kort-Butler 2020, 9-10), or young (Salmon et al. 2017).

Nevertheless, the typical gendered content of games may have a profound impact on the extent to which games influence male and female players. As noted above, the majority of videogames are targeted at a male audience (Nakamura 2012, Hammar 2020). Player and non-player characters are predominantly male and what few female characters exist are often reduced to supporting, marginalised and sexualised roles (Miller and Summers 2007, Shaw 2012, Kowert, Breuer and Quandt 2017, Hammar 2020). The lack of visibility and agency of women in games may contribute to this media exerting a lesser degree of impact on female players.

There is some evidence that men play games more often and longer than women. A substantial number of studies based on self-reported behaviour have argued that male players devote (often considerably) more time to gaming than female players (Wright et al. 2001, Lucas 2004, Tilo Hartmann and Klimmt 2006, Kowert, Breuer and Quandt 2017, 98, Kort-Butler 2020, 9). However, some studies which make use of data mining to establish players actual gaming habits is less prolific and has been less conclusive. Williams et al.'s research into *Everquest II* players (n=7,129), which recruited participants through an in-game incentive (Williams, Yee and Caplan 2008, 1000), found that female participants actually played for more hours a week than their male counterparts and that female players had a tendency to substantially underestimate their play time. Conversely, while Shen et al.'s study (n=9,483) of *Everquest* players, which made use of data from all active players on a given server (Shen et al. 2016, 316), reiterated Williams et al.'s finding of under-reporting of play time by women, it also found that on average men had played for somewhat longer in total (712.55 hours) than women (681.74) (Shen et al. 2016, 318-19). While the issue is far from resolved, if it is the case that men play games more frequently and longer than women then it would follow that they are more likely to be influenced by the historical content of these games.

The increasingly apparent tendency for women underestimate and under-report their time spent playing games (Williams, Yee and Caplan 2008, Shen et al. 2016, Paaßen, Morgenroth and Stratemeyer 2017) is of fundamental importance for this study. The societal perception of gamers as men has strongly influenced the self-identification of both male and female players: indeed, Shaw has highlighted that among marginalised groups, gender is the only characteristic which corresponds with self-identification as a gamer (Shaw 2012, 33). Although women may play games as much as men, if societal expectations dictate that gamers are men this can be expected to

have an impact not only on the reported impact of games on historical understanding but on the practical impact as well.

It can therefore be hypothesised that women will typically report a lesser impact of games on their understanding of history. However, the expected distribution of impact will be roughly similar between male and female respondents. The main driver of impact remains interaction with games and while in general women may interact with games in a different manner and to a different extent than men, we should expect to see a similar division in both of these genders between those who engage extensively with games, those who engage casually, and those who do not engage at all.

**Genre and Gender**

The impact of genre and gender can be suggested to be strongly connected. Male and female genre preferences are significantly different (Hartmann and Klimmt 2006, Hartmann, Möller and Krause 2015, Rehbein et al. 2016). The audiences of action and strategy games are typically dominated by male players, while female players are more numerous within the playerbase of casual and puzzle games (Hayes 2005, Hartmann and Klimmt 2006, Vermeulen and Van Looy 2016, Kowert, Breuer and Quandt 2017, 198, Paaßen, Morgenroth and Stratemeyer 2017). Across genres, the level of violence within a game is strongly correlated with the gender balance amongst its players with men tending to favour more violent games than women (Hartmann, Möller and Krause 2015).

This connection between genre and balance of audience gender is significant for this study as it is the genres most typically favoured by men (action and strategy) are

those most commonly associated with historical content (Rochat 2020, 11-12) and those which seem most likely to influence their players' engagement with history (Houghton 2016, 30). Likewise, the tendency of historical games to focus on violence (Hammar 2020, 64) and the corresponding tendency of violent games to attract a primarily male audience suggests a greater potential for these games to influence male students. This hypothesis corresponds with Beavers' finding that historical games find a substantially larger audience amongst men than women (Beavers 2020, 69).

This article therefore suggests that difference genre preference between men and women is a central factor in explaining the corresponding differences in impact of games. If games of particular genres can be connected with more pronounced influence on formative historical understandings and genre preference correlates strongly with gender, then it follows that genre preference is a core link between gender and impact of games.

**Method**

A survey was designed and circulated through Jisc Online Surveys over two academic years (17/18 and 18/19) within the final year module History in the Public Sphere at the University of Winchester. This course formed a core element of all History pathways at the University and was designed to allow students to reflect on the connections between history as presented within popular media and their experience of academic history. The survey was used as an optional element of a formative exercise during the first two weeks of the module when students were asked to consider which factors influenced their interest in history and then to analyse to what extent their perception of history was influenced by popular media and other sources.



This approach allowed the collation of a substantial data set as while participants were self-selecting, they had additional motivation to engage with the survey. Furthermore, by connecting the survey to a reflective academic module this approach mitigated several issues of social preconception.

The survey results were anonymised and were not shared with students, the pedagogic purpose of the exercise was to help students to consider and articulate their awareness of any connections between their academic and personal experience of history. The exercise was formative and reflective and formed no direct part of the assessment of the module. Prior to engaging with the survey, participants were asked to consent to the use of the data they supplied for this research. If they did not consent to the use of the data, their responses were not recorded and they were not asked to supply any demographic information. Respondents were reminded that they could suspend their participation at any time and none of the questions were mandatory.

For informational and comparative purposes respondents were asked if they had ever studied outside the United Kingdom and to place themselves within broad age bands. These elements do not form a core part of this study but will be useful for future work. The student body of the Department of History at the University of Winchester is primarily domestic and consists of a somewhat larger than average proportion of mature students.

Respondents were then asked their gender. They were presented with several options including *prefer not to say* and a free text box. This data was important to ensure a balanced sample and was of fundamental importance in addressing the core hypotheses of the study.

The core of the survey consisted of four questions addressing the impact of history in the public sphere on participants' interest in and understanding of history. Respondents were first asked to score the perceived impact of a series of sources (Pre-University Education, Museums, Tourist Sites, Memorial Sites, Journalism, Political Media, Popular Memory, Popular Literature, Cinema/Television, Games) on their interest in history on a scale of 0 to 10 (*On a scale of 1 (not important) to 10 (very important) how important are the following forms of history in the public sphere to your interest in history?*). This broad numeric scale was employed to allow fine gradation between media formats hence facilitating the use of the survey as a reflective exercise by the participants and providing more nuanced results for the purposes of this research. Participants were also presented with the option to indicate that they had not experienced popular history in a particular format.

In order to assess the impact of individual items of media, participants were asked: *Has any one item of history in the public sphere particularly inspired your interest in history?* A free text response was implemented here to allow further reflection by the respondents and to provide a more nuanced data set for this research.

In order to analyse differences in impact dependent on media and genre, these questions were then repeated in relation to the perceived impact of popular media on participant's historical knowledge (*How important are the following forms of history in the public sphere to your knowledge of history?*; *Has any one item of history in the public sphere particularly expanded your knowledge of history?*). When the surveys were completed, they were filtered for empty or spoilt returns (surveys which returned identical responses across all fields). Partially complete surveys were retained within the sample as they were still of use for the data analysis.

## Results

After filtering, the survey returned 172 responses (95 from 17/18, 77 from 18/19). This represents a response rate of 63% across the two student cohorts. Of these respondents 13 reported some previous study outside the U.K. and twelve respondents were over 25. 94 respondents identified as female, 76 as male and two preferred not to specify their gender. 86% of respondents reported that their interest in history had been influenced to some extent by Games. This was the lowest proportion of respondents for any media: 91% of respondents reported similar influence from Political Media and at least 95% of respondents reported that their interest in history had been influenced to some extent by every other form of media addressed within the survey. 73% of respondents reported that Games had informed their historical knowledge to some extent. Again, this was a smaller proportion than for any other media which returned positive responses from between 84% and 91%.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Interest in History	97.1	98.8	98.3	98.3	96.5	91.3	95.9	95.9	98.8	86.0
Knowledge of History	89.0	91.3	90.7	87.8	87.8	83.7	86.6	85.5	89.5	72.7

Figure 1. Percentage of Respondents (n=172) Reporting Impact of Different Media on their Interest in and Knowledge of History.

Across these positive responses, Prior Education received the highest mean score in terms of influencing participants' interest in history (7.74) closely followed by Museums (7.56), Cinema and Television (7.55), and Tourist Sites (7.46). Popular Memory (6.84), Literature (6.71) and Memorial Sites (6.64) were reported to be moderately influential on average while Games (5.88), Journalism (5.46) and Political

Media (5.27) were deemed to have had least influence on average. The Median response value for each form of media was almost universally within 0.6 of the mean response. The only exceptions were the mean (5.88) and median (7) responses gauging the influence of Games. Variation of responses within a media type were similar across almost all media with standard deviations ranging from 1.97 (Cinema and Television) to 2.36 (Popular Memory, Fiction Literature). Again, the only outlier was Games with a standard deviation of 2.84.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Mean	7.74	7.56	7.46	6.64	5.46	5.27	6.84	6.71	7.55	5.88
Median	8.00	8.00	8.00	7.00	5.00	5.00	7.00	7.00	8.00	7.00
SD	1.85	1.96	1.91	2.29	2.17	2.25	2.36	2.36	1.97	2.84

Figure 2. Mean, Median and Standard Deviation of Responses to the Question: *How important are the following forms of history in the public sphere to your interest in history?* (1-10).

Responses for most media types followed primarily normal distributions centred around the median response. Responses for Pre-University Education (32 respondents) and Popular Memory (26) presented a secondary peak at the top of the scale. Responses for Political Media suggest a possible bimodal distribution centred around 2 (17 respondents) and 6.5 (26). The results for Games were the most significant exception to this pattern with a likely bimodal distribution containing peaks at 1 (16 respondents) and 7 (25 respondents).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
1	0.0	1.2	0.0	1.2	2.4	5.1	3.6	3.0	1.8	10.8
2	1.8	1.8	1.2	4.7	9.6	10.8	1.8	3.0	0.6	8.1
3	1.8	0.6	2.4	3.0	8.4	7.0	5.5	3.0	2.4	6.8
4	3.6	4.1	5.9	11.2	10.2	12.1	4.2	9.1	3.5	6.8
5	4.8	6.5	5.3	9.5	19.9	15.9	8.5	10.3	5.3	6.8
6	7.2	9.4	13.6	15.4	15.1	16.6	17.6	17.6	8.2	8.8
7	15.6	18.8	16.6	16.0	15.7	16.6	17.6	11.5	20.0	16.9
8	31.7	24.1	22.5	16.0	12.0	10.2	13.9	16.4	25.3	14.9
9	14.4	15.9	17.2	10.7	3.6	3.2	11.5	12.7	16.5	12.8
10	19.2	17.6	15.4	12.4	3.0	2.5	15.8	13.3	16.5	7.4
n	167	170	169	169	166	157	165	165	170	148

Figure 3. Distribution (%) of Responses to the Question: *How important are the following forms of history in the public sphere to your interest in history? (1-10).*

Amongst respondents who reported that a media type influenced their interest in history, Games were the most likely media (25.7% of respondents) to be perceived to have a low impact (score 1-3) but were also reported to be strongly influential (score 7-10) by 52% of participants. A similar proportion reported Memorials (55%), Popular Memory (58.8%) and Literature (53.9%) to be strongly influential in this manner.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low (1-3)	3.6	3.5	3.6	8.9	20.5	22.9	10.9	9.1	4.7	25.7
Mid (4-6)	15.6	20.0	24.9	36.1	45.2	44.6	30.3	37.0	17.1	22.3
High (7-10)	80.8	76.5	71.6	55.0	34.3	32.5	58.8	53.9	78.2	52.0

Figure 4. Distribution (%) of Responses to the Question: *How important are the following forms of history in the public sphere to your interest in history?* (Low, Mid, High).

Female respondents were marginally more likely than male respondents to report some degree of influence on their interest in history from almost every form of media. The only exception was in relation to games where 79.8% of female respondents reported some degree of influence compared to 94.7% of male respondents.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	97.1	98.8	98.3	98.3	96.5	91.3	95.9	95.9	98.8	86.0
Female	98.9	100.0	98.9	98.9	96.8	92.6	96.8	97.9	98.9	79.8
Male	94.7	97.4	97.4	97.4	96.1	90.8	96.1	93.4	98.7	94.7

Figure 5. Percentage of Respondents Reporting Impact of Different Media on their Interest in History by Gender.

Female respondents reported a stronger mean influence than their male counterparts for almost every form of media on their interest in history. The singular exception was Games where female respondents reported a mean of 4.83 compared to 6.92 from male participants.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	7.74	7.56	7.46	6.64	5.46	5.27	6.84	6.71	7.55	5.88
Female	7.98	7.90	7.80	7.04	5.53	5.40	7.32	6.98	7.71	4.83
Male	7.49	7.11	7.01	6.19	5.36	5.14	6.33	6.39	7.41	6.92

Figure 6. Mean Responses to the Question: *How important are the following forms of history in the public sphere to your interest in history?* (1-10) by Gender.

Among female respondents who reported that games had influenced their interest in history 37.3% reported that this influence was limited and 34.7% reported a strong influence.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low	2.2	2.1	3.2	4.3	17.6	20.7	7.7	6.5	3.2	37.3
Mid	14.0	14.9	18.3	30.1	48.4	46.0	22.0	37.0	17.2	28.0
High	83.9	83.0	78.5	65.6	34.1	33.3	70.3	56.5	79.6	34.7

Figure 7. Distribution of Responses from Female Respondents to the Question: *How important are the following forms of history in the public sphere to your interest in history?* (Low, Mid, High).

Among the corresponding group of male correspondents, 13.9% reported a low level of impact of games on their interest in history while 69.4% reported a high level of impact. Only Previous Education (77.8%) and Cinema and Television (77.3%) were reported as having a strong impact more frequently by male respondents.

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	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low	4.2	5.4	4.1	13.5	24.7	24.6	13.7	11.3	5.3	13.9
Mid	18.1	27.0	33.8	43.2	41.1	43.5	41.1	38.0	17.3	16.7
High	77.8	67.6	62.2	43.2	34.2	31.9	45.2	50.7	77.3	69.4

Figure 8. Distribution of Responses from Male Respondents to the Question: *How important are the following forms of history in the public sphere to your interest in history?* (1-10).

Scores for the impact of games on participants' interest in history followed apparent bimodal distributions for both female and male respondents. For female participants the peaks were at 1 and 7 while for male respondents peaks were at 1 and 9.

	Female	Male
1	14.7	6.9
2	12.0	4.2
3	10.7	2.8
4	10.7	2.8
5	8.0	5.6
6	9.3	8.3
7	16.0	18.1
8	10.7	19.4
9	4.0	22.2
10	4.0	9.7

Figure 9. Distribution of Responses to the Question: *How important are Games to your interest in history?* (1-10) by Gender.

When asked whether a single item of history in the public sphere had influenced their interest in history, respondents most typically reported an item of Cinema or Television (20.2%) followed by Literature (15.2%), Tourist Sites (14.1%) and Museums (13.1%). Female respondents most typically referred to Cinema and Television (17.7%) and Museums (17.7%) but also Tourist Sites (16.1%), Previous Education (14.5%) and Popular Memory (14.5%). Male participants were most likely to mention Literature



(20%), Cinema and Television (20%) and Games (20%). They were more likely to refer to Memorial Sites than female respondents (11.4% compared to 4.8%) and were considerably less likely to mention Previous Education (8.6%), Museums (5.7%) or Popular Memory (2.9%).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	12.1	13.1	14.1	7.1	1.0	0.0	10.1	15.2	20.2	7.1
Female	14.5	17.7	16.1	4.8	1.6	0.0	14.5	12.9	17.7	0.0
Male	8.6	5.7	11.4	11.4	0.0	0.0	2.9	20.0	20.0	20.0

Figure 10. Types of Media Cited in Response to the Question: *Has any one item of history in the public sphere particularly inspired your interest in history?* by Gender.

When considering the impact of media on their knowledge of history, the participants reported lower mean scores for every source with the exception of Previous Education (8.24). Games (5.22) and Political Media (5.05) received the lowest mean scores. The difference between mean and median returns was again highest within responses about Games and, although the difference was not as pronounced, the standard deviation of responses was highest in relation to Games (2.63).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Mean	8.24	7.45	6.75	5.96	5.45	5.05	5.93	5.75	6.49	5.22
Median	8.00	8.00	7.00	6.00	6.00	5.00	6.00	6.00	7.00	6.00
SD	1.62	1.99	2.11	2.25	2.17	2.31	2.32	2.52	2.34	2.63

Figure 11. Mean, Median and Standard Deviation of Responses to the Question: *How important are the following forms of history in the public sphere to your knowledge of history?* (1-10).

Distribution of scores within responses for each media type again followed normal distributions for almost every category. The sole exception was again Games with a bimodal distribution with peaks at 1 (13.6%) and 7 (20.8%).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
1	0.0	1.3	1.9	4.0	5.3	5.6	3.4	6.1	4.5	13.6
2	0.7	1.3	2.6	6.0	6.0	10.4	4.7	5.4	3.2	9.6
3	0.0	2.5	4.5	7.3	7.3	13.9	10.7	9.5	5.2	6.4
4	2.6	4.5	5.8	6.6	13.2	9.7	8.1	10.9	4.5	8.0
5	5.2	3.8	7.7	12.6	16.6	18.8	14.1	12.9	9.7	8.0
6	3.9	15.9	17.9	17.9	17.2	16.0	16.1	17.0	20.1	12.8
7	11.8	12.7	20.5	17.9	17.2	6.3	14.1	10.2	16.9	20.8
8	29.4	21.7	19.9	17.2	11.3	12.5	14.8	8.8	11.7	12.8
9	19.6	24.8	9.6	7.3	3.3	4.9	9.4	13.6	16.9	6.4
10	26.8	11.5	9.6	3.3	2.6	2.1	4.7	5.4	7.1	1.6
n	153	157	156	151	151	144	149	147	154	125

Figure 12. Distribution (%) of Responses to the Question: *How important are the following forms of history in the public sphere to your knowledge of history?* (1-10).

Ignoring respondents who reported no impact from each source, Previous Education (87.6% of respondents) was referenced most frequently as a strongly influential factor in the development of historical knowledge. Of all media, Political Media (29.9%) and Games (29.6%) were most likely to be seen to be of little influence in this area. Games were quite likely to be seen as highly influential (41.6%)

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low	0.7	5.1	9.0	17.2	18.5	29.9	18.8	21.1	13.0	29.6
Mid	11.8	24.2	31.4	37.1	47.0	44.4	38.3	40.8	34.4	28.8
High	87.6	70.7	59.6	45.7	34.4	25.7	43.0	38.1	52.6	41.6

Figure 13. Distribution (%) of Responses to the Question: *How important are the following forms of history in the public sphere to your knowledge of history?* (Low, Mid, High).

Female respondents were more likely to report some degree of influence on their knowledge of history from almost every form of media than male respondents. In most cases this variation was marginal, but there were more substantial differences in relation to the influence of Memorials (90.4% / 85.5%), Political Media (87.2% / 81.6%) and Fiction Literature (88.3% / 82.9%). The only exception to this trend were the responses relating to games where 82.9% of male students reported some degree of influence compared to 64.9% of female students.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	89.0	91.3	90.7	87.8	87.8	83.7	86.6	85.5	89.5	72.7
Female	90.4	92.6	92.6	90.4	88.3	87.2	88.3	88.3	90.4	64.9
Male	89.5	90.8	89.5	85.5	88.2	81.6	86.8	82.9	89.5	82.9

Figure 14. Percentage of Respondents Reporting Impact of Different Media on their Knowledge of History by Gender.

On average female respondents rated each source as a stronger influence on their historical knowledge than their male counterparts, with the exception of Games (4.51 compared to 5.87).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	8.24	7.45	6.75	5.96	5.45	5.05	5.93	5.75	6.49	5.22
Female	8.45	7.90	7.28	6.36	5.61	5.38	6.40	6.17	6.72	4.51
Male	7.97	6.97	6.16	5.51	5.31	4.61	5.33	5.21	6.18	5.87

Figure 15. Mean Responses to the Question: *How important are the following forms of history in the public sphere to your knowledge of history? (1-10) by Gender.*

Amongst female respondents, games were the media format least likely to be perceived as strongly contributing to historical knowledge (29.5%) and most likely to be perceived as having limited influence (39.3%).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low	1.2	3.4	8.0	11.8	12.0	25.6	15.7	15.7	12.9	39.3
Mid	10.6	12.6	19.5	30.6	56.6	43.9	32.5	37.3	29.4	31.1
High	88.2	83.9	72.4	57.6	31.3	30.5	51.8	47.0	57.6	29.5

Figure 16. Distribution of Responses from Female Respondents to the Question: *How important are the following forms of history in the public sphere to your knowledge of history? (Low, Mid, High).*

Among male respondents, games were more likely to be seen as strongly influential in this manner (52.4%): only Education (86.8%) and Museums (55.1%) were seen to be this influential by a greater proportion of male participants.

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
Low	0.0	5.8	8.8	23.1	25.4	35.5	22.7	28.6	13.2	20.6
Mid	13.2	39.1	47.1	46.2	35.8	45.2	45.5	44.4	41.2	27.0
High	86.8	55.1	44.1	30.8	38.8	19.4	31.8	27.0	45.6	52.4

Figure 17. Distribution of Responses from Male Respondents to the Question: *How important are the following forms of history in the public sphere to your knowledge of history?* (Low, Mid, High).

Scores for the impact of games on participants' knowledge of history followed bimodal distributions for both female and male respondents with peaks at 1 and 7 for both groups.

	Female	Male
1	18.0	9.5
2	14.8	4.8
3	6.6	6.3
4	8.2	7.9
5	9.8	6.3
6	13.1	12.7
7	19.7	22.2
8	4.9	19.0
9	3.3	9.5
10	1.6	1.6

Figure 18. Distribution of Responses to the Question: *How important are Games to your knowledge history?* (1-10) by Gender.

When asked if a single source had particularly influenced their knowledge of history respondents cited previous education most frequently (21.2%) followed by Museums (19.7%) and Cinema (18.2%) with Games a fairly distant fourth (12.1%). Among female respondents Previous Education (31.4%), Museums (22.9%) Cinema (17.1%) and Popular Memory (11.4%) were mentioned most frequently and none of these

respondents mentioned Games. Among male respondents Games were the most commonly cited influence (26.7%) followed by Museums (16.7%) and Cinema and Television (16.7%).

	Pre-University Education	Museums	Tourist Sites	Memorials	Journalism	Political Media	Popular Memory	Fiction Literature	Cinema / Television	Games
All	21.2	19.7	7.6	6.1	0.0	0.0	7.6	7.6	18.2	12.1
Female	31.4	22.9	8.6	2.9	0.0	0.0	11.4	5.7	17.1	0.0
Male	10.0	16.7	6.7	10.0	0.0	0.0	3.3	10.0	16.7	26.7

Figure 19. Types of Media Cited in Response to the Question: *Has any one item of history in the public sphere particularly inspired your knowledge of history?* by Gender.

Amongst the respondents who reported a game or games as the most influential element of media on their interest in history, the *Total War* series was mentioned most frequently (3 responses) followed by the *Age of Empires* series (2), then the *Assassin's Creed* series, *Warcraft* series (1994-2020), and *Civilization* series (1 each). *Total War* was cited as the most influential element of media in the development of two participant's historical knowledge, as was the series of historical strategy games produced by Paradox Interactive. Four further respondents noted unspecified games as the most influential source.

	Interest in History	Knowledge of History
Assassin's Creed	1	0
Age of Empires	2	0
Warcraft	1	0
Civilization	1	0
Total War	3	2
Paradox Interactive Series	0	2
Unspecified Games	0	4

Figure 20. Frequency of citations of particular games/series as the strongest individual influence on participants' interest in and knowledge of history (number of responses).

## Analysis

### Impact of Games

These results suggest that games tend to have either a quite substantial or an almost negligible impact on undergraduate student's interest in history and their understanding of history. Games superficially appear to have little influence on students' interest in history. The medium was least likely to be reported as having any kind of influence on respondents' interest in history (86%) or on their historical knowledge (73%). The mean reported impact on interest in history (5.88) was amongst the lowest of all media, exceeding only that of Journalism (5.46) and Political Media (5.27). Every other media format was reported to be substantially more influential on average ranging from Memorials (6.64) to Previous Education (7.74). The perceived impact of games on student's knowledge of history was likewise low (5.22), with students reporting that only Political Media (5.05) had less impact in general.

However, there are extensive signs that the engagement and influence of games varies substantially amongst students. The distribution of responses regarding the influence of games is substantially different from that of other media. There are large discrepancies between the mean and median responses for the impact of games on participants interest in history (5.88 and 7) and on their understanding of history (5.22 and 6), and these discrepancies are significantly more pronounced than for any other media. Likewise, the standard deviation of responses was very high for the impact of games on both interest in history (2.84) and understanding of history (2.63): the greatest deviations of all media. Considering the distribution of responses more closely, 52% of respondents who reported any influence from games reported a high degree (a score of 7 or more) on their interest in history while 41.6% reported a similar level of impact on their knowledge of history. In both cases this was balanced by a substantial number of respondents who reported a low level of impact (1-3). Beyond this a small but significant proportion of respondents reported that games or a specific game had been the strongest influence on their interest in history (7.1%) or their knowledge of history (12.1%). It appears therefore that games tend to be either strongly influential or of very limited influence in the development of undergraduate interest in history and understanding of history.

This distribution of responses is significantly different from the responses for most other media. Responses for most other media follow fundamentally normal distributions, while the responses for games follow a bimodal distribution with two distinct peaks around 1 and 7. This bimodal distribution is compatible with a model of two distinct populations of respondents.



## Genre

The games reported came from a range of genres: the Action-Adventure *Assassin's Creed*, the Real-Time Strategy *Age of Empires* and *Warcraft*, the hybrid Real-Time/Turn Based Strategy *Total War*, the Turn Based Strategy *Civilization*, and the Grand Strategy *Paradox Interactive* series including the *Crusader Kings* (2004-2021), *Europa Universalis* (2000-2021), and *Hearts of Iron* (2002-2020) series of games. Roughly speaking, these games lie in this order along Chapman's scale of realist to conceptual simulations. *Assassin's Creed* is certainly the most graphically detailed of any of these games and games of this series present history primarily through their world and story rather than their mechanics. *Age of Empires* and *Warcraft* are less graphically stimulating, and present history through their abstract and simple mechanics and through their campaign storylines. The *Total War* series combines real-time tactical battles with deeper strategic turn based play. *Civilization* presents a detailed but broad and abstract mechanical explanation of history. Finally, games of the *Paradox Interactive* series are amongst the most detailed historical games available and root their complex mechanical presentation of the past in real world geography.

The reported impact of different genres of game followed the expected pattern to a substantial extent. *Assassin's Creed* (one respondent), *Age of Empires* (two), and *Warcraft* (one) were reported as having an influence on student's interest in history which matches the hypothesis: these games are relatively simple and can serve well as an introduction to a period of history. They are also among the best-selling series of games and can be expected to have a relatively large player base amongst respondents.

Likewise, the citation of *Paradox Interactive* games as influential on student’s knowledge of history by two respondents, but not their interest in the subject correlates with the hypothesis. These complex games present a detailed account of specific historical periods through complex mechanics and give the impression of authority through their level of detail. However, the learning curve for these games is incredibly steep. They are very much at the conceptual extreme of Chapman’s scale.

The appearance of the *Total War* series as an influential factor on both students’ interest in (three respondents) and knowledge of history (two) is noteworthy and underlines the nature of the games as a hybrid of divergent genres. The games represent history through the graphical fidelity in their real time elements (realist simulation) and through the mechanics of their turn based elements (conceptual simulation) which have become progressively more complex as the series progresses. The games are also well selling and rooted firmly in particular historical periods.

The apparent anomaly here is the presence of *Civilization* as an influence for interest in history by one respondent, but not for historical knowledge. This seemingly runs counter to the hypothesis as *Civilization* is very much a conceptual simulation – indeed Chapman himself uses it as a core example of this sort of game (Chapman 2013a, Chapman 2013b). This may be a statistical outlier, but could also be a product of the abstract nature of the game. Games in the *Civilization* series are complex – typically more so than *Total War* but less so than those in the *Paradox Interactive* series – but the core games are set across c. 6.000 years of human history, take place within a randomised world, and make no attempt to recreate historical events and peoples beyond very abstract and broad sweeps. The disconnection between *Civilization* and actual geography, populations and events may undermine its perceived influence among students.

Ultimately, the data collected here supports hypothesis two, but there is some indication that the hypothesis may require further nuance. Games such as the *Total War* series which straddle genres and contain elements of both realist and conceptual simulation can clearly inspire students' interest in the past and also provide a substantial basis for their understanding of history. Abstract games such as *Civilization* may be more likely to inspire interest rather than develop knowledge no matter how detailed they are or to what degree they rely on conceptual simulation to convey history.

**Gender**

The data collected emphatically support the hypothesis that games influence male students more than female students. Substantially fewer female than male respondents reported some degree of influence from games on their interest in history (79.8% / 94.7%) and on their knowledge of history (64.9% / 82.9%). Games were the only media format for which both the reported impact on interest (4.21 / 6.64) and on knowledge (4.51 / 5.81) was lower for female students than for male students. In both cases, this difference between responses by gender was more substantial than the corresponding divergence for any other media. Female students were considerably less likely to report a high level of influence of these games on their interest in (34.7% / 69.4%) and knowledge of (29.5% / 52.4%) history than male students. Furthermore, while male students reported that a particular game or games was the most influential factor in their interest in (20%) and knowledge of (26.7%) history, no female students reported the same influence.

These results are significant as they highlight the substantial discrepancy in the impact of games on historical conscience between genders taken as a whole and underline the importance of careful development of teaching history with games.

Assuming prior engagement with the medium as a historical device may disadvantage substantial sections of a typical class – where some students will not have played historical games or will not have viewed them as an authoritative or useful representation of the past. The results of this study strongly suggest that female students in general may be particularly disadvantaged through an incautious pedagogical approach around games.

However, it must be emphasised that it is very much not the case that games inevitably influence female students to a lesser degree than male students. Response values throughout the range were returned by both female and male students for each question and the bimodal distribution of the results for the entire sample does not corresponded to two distinct populations along female-male gender lines. Instead, the distributions of responses among female respondents and among male respondents all follow a similar bimodal distribution. The distribution of responses for impact on interest in history are relatively similar for female (medians at 1 and 7) and male (1 and 9) respondents and almost identical for impact on knowledge of history (medians at 1 and 7 for both female and male respondents). Both of these genders therefore appear to be split into two populations: those strongly influenced by games, and those who are barely influenced or not influenced by games. Gender identity correlates with the impact of games across the population, but it is not the sole causal factor in determining the impact of games.

Factors beyond gender must therefore be considered to explain this distribution of responses. Time spent playing is a possible factor here alongside the representation of different genders within historical games and societal perceptions of gaming as a gendered activity. Gender is certainly related to these factors (as discussed above), but is in effect a secondary influencer. This complies with Manero et al.'s findings:

while non-gamers and casual gamers are predominantly female and varied gamers and hardcore gamers are predominantly male, there are substantial representatives of both of these genders in all four groups (Manero et al. 2016).

**Gender and Genre**

This data also supports hypothesis four: that the gender discrepancy in responses is in part a function of the difference in genre preferences among male and female students. The games cited as influential factors on both historical interest and knowledge fall within genres whose players are predominantly male. Indeed, only male respondents reported a game as the most influential single item of media on their formative interaction with history.

The tendency towards extremes in degree of impact of games apparent among both male and female students suggests that gender is a secondary correlating factor. The likely (and seemingly self-evident) explanation is that impact is driven primarily by engagement with historical games and while male students may be more likely to engage with these games, it is assuredly the case that some female students engage too. The audiences of the games and genres which are reported to be most influential are predominantly populated by male players: most notably the substantial majority of action, adventure and strategy games are primarily designed for and played by a male audience. Gender is a factor in predicting impact of games on students' historical perceptions, but it is not the only (or even primary) causal factor. Instead, genre seems to be a more significant point of influence.

However, this evidence is inconclusive. While the data indicates a propensity towards certain genres amongst male respondents who reported a game as the most influential piece of media on their interaction with history, no information was

collected regarding the game playing habits of the rest of the sample (including all female and the vast majority of male students). This was a necessary design decision to facilitate the pedagogic utility and the brevity of the survey, but nevertheless restricts the confidence with which this element of the analysis may be asserted.

## Conclusion

The results presented above strongly suggest that while games can have a substantial influence on undergraduates both as a means of engaging students with history and as a source for historical knowledge and understanding, there is a pronounced division between two groups of students: those who report these strong influences and those who report little or no influence from these media with comparatively few students reporting a moderate influence. The results also almost unequivocally demonstrate that male students are typically influenced by these games to a greater extent than female students, but also indicate extensive divergence within both groups which suggests that the correlation between impact and gender is secondary or indirect. Instead, the results suggest that genre of game has a more direct influence on its impact on the player and that different genres of game influence students in different ways – realist simulations tend to spark student’s interest in history while conceptual simulations tend to encourage the development of formative historical thought – but this influence may be more nuanced than initially thought. These results also suggest that a dynamic interaction exists between impact, gender and genre: the correlation between maleness and greater impact of games on engagement with history seemingly exists in part because men dominate the audiences of the genres of game which are most likely to influence their players’ interactions with history.

These findings have important connotations when considering the historical perceptions which students bring to the classroom. It is certainly important for educators to gain an understanding of representational trends within history games as this media has a demonstrable impact on the understanding of the subject amongst a sizable minority of students (Houghton 2016). However, it is increasingly apparent that the extent of these influences varies substantially not only between gamers and non-gamers, but also between the players of different genres of game. Although the number of undergraduate students who have played historical games is large and growing, experience with the medium is substantially more varied than for any other form of media. A non-negligible proportion of students have played historical games while a larger proportion have not engaged with their historical representations to a meaningful extent. As such, while it is important to acknowledge that a significant proportion of students have been influenced by games in the development of their formative understandings of history and historical periods, it is equally important to recognise that this influence is far from universal even amongst gamers. Teaching should consider the possibility of ludic influences on individual basis, but not assume it across the cohort.

Furthermore, as the manner in which games influence students varies substantially as a function of the genre of the game, then students whose genre preferences vary will likely have considerably different experiences of interacting with history through games and this must be considered in a pedagogical context. The greater reported impact of realist games on the development of students' interest in history suggests that the history represented through these games may have a widespread but shallow influence on students historical perceptions: the history presented in these games may influence students' perceptions, but this influence is likely limited to material culture and historical accounts presented through the stories of these

games. Conversely, the deeper reported impact of conceptual games on students' knowledge of history suggests that understanding the narratives posed by these games will be of particular use in comprehending the preconceptions of some students: the emphasis of mechanics as the driver of the narratives presented within these games allows a deeper communication of historical arguments and systems. While it should be noted that these findings were not universal, the trends noted here have important consequences for our understanding of the nuances of students' historical preconceptions.

These findings underline the necessity for lecturers to carefully consider the variety of student experiences with the medium when creating classroom activities which make use of games. The markedly different reported impact of games by individual students corresponds with the frequently observed scepticism towards games as educational exercises displayed within cohorts at various levels of study (McCall 2016, 532-33, O'Neill and Feenstra 2016). As such, these findings corroborate McCall's emphasis that games should not be introduced as a *fun* classroom activity, but rather the educational value of these games should explained and emphasised clearly and repeatedly (McCall 2016, 533).

The markedly different manner in which realist games and conceptual games were reported to influence their players provides supporting evidence for key pedagogical theory surrounding the use of games in the classroom. The more pronounced influence of realist games on students interest in history conforms to the commonly expressed argument that these games are better suited to introduce students to historical periods and regions or to provide representations of historical data such as landscapes and material culture (Salvati and Bullinger 2013, 156-57, de Groot 2016, 152-53, Chapman 2016, 61-66, Houghton 2016, 24-25). Conversely, the frequent



reports of conceptual games as major influences on students' historical understanding of history corresponds closely to the hypothesis that their detailed rules and mechanics permit these games to better present deeper historical arguments for students to interrogate through play (Kee and Graham 2014, 275-78, de Groot 2016, 155-59, Chapman 2016, 70-75). There is an evident correlation between the manner in which games influence their players outside the classroom and how they may be deployed effectively within an educational setting.

More generally, these findings have important consequences for the understanding of the impact of historical games (and games in general) across their audiences as a whole. While the sample for this survey was drawn from a cohort of undergraduate history students, several of the broad trends identified here can reasonably be extended. The extent and manner of the impact of games can be suggested to vary substantially depending on a number of factors including in particular the genre of game. Further, it may be the case that apparent demographic differences in the consumption and impact of these games is ultimately driven by genre with the male dominance of the audience of violent, adventure and strategy genres accompanied by the tendency of historical games to fall within these genres equating to an increased impact of historical games on this demographic. More generally though, these findings suggest the existence of substantial nuance across all audience groups.

Ultimately, while games can be incredibly powerful pedagogical tools within the field of history and have the potential to be invaluable within the classroom, these findings highlight several considerations which must be taken into account when considering the interconnection between games and learning. The variation of impact between different games and amongst different students is substantial and any teaching approach must consider these complexities to ensure effectiveness. Understanding

these differences can facilitate the development of history games as pedagogical tools and may create more powerful teaching approaches. Above all though, care must be taken to ensure that the modification of teaching to incorporate games and their influence does not exclude any member of the class.

**References**

*Age of Empires* series, 1997-2020. [video game] (multiplatform) Ensemble Studios, Big Huge Games, Robot Entertainment, Relic Entertainment, Hidden Path Entertainment, Forgotten Empires, World’s Edge and Tantalus Media, Xbox Game Studios.

Antley, J., 2012. Going Beyond the Textual in History. *Journal of Digital Humanities* 1 (2). Available at <http://journalofdigitalhumanities.org/1-2/going-beyond-the-textual-in-history-by-jeremy-antley/>, accessed 10 June 2021.

Apperley, T., 2013. Modding the Historians Code: Historical Versimilitude and the Counterfactual Imagination. In: Kapell, M. and Elliott, A. B. R., eds. *Playing with the Past: Digital Games and the Simulation of History*. New York: Bloomsbury Academic, 185-98.

*Assassins’ Creed* series, 2007-2020. [video game] (multiplatform) Ubisoft, Ubisoft.

*Battlefield* series, 2002-2018. [video game] (multiplatform) EA DICE, EA.

Beavers, S., 2020. *The Informal Learning of History with Digital Games*. [PhD thesis] The Open University. DOI: <https://doi.org/10.21954/ou.ro.0001111f>.

Boom, K. H. J., Ariese, C. E., van den Hout, B., Mol, A. A. A. and Politopoulos, A., 2020. Teaching through Play: Using Video Games as a Platform to Teach about the Past. In: Hageneuer, S., ed. *Communicating the Past in the Digital Age: Proceedings of the International Conference on Digital Methods in Teaching and Learning in Archaeology (12th-13th October 2018)*. London: Ubiquity Press, 27-44. DOI: <https://doi.org/10.5334/bch>.

Carvalho, V. M., 2017. Videogames as Tools for Social Science History. *Historian* 79(4), 794-819. DOI: <https://doi.org/10.1111/hisn.12674>.

Chapman, A., 2013a. Affording History: Civilization and the Ecological Approach. In: Kapell, M. and Elliott, A. B. R., eds. *Playing with the Past: Digital Games and the Simulation of History*. New York: Bloomsbury Academic, 61-73.

Chapman, A., 2013b. Is Sid Meier's Civilization History? *Rethinking History* 17(3), 312-32. DOI: <https://doi.org/10.1080/13642529.2013.774719>.

Chapman, A., 2016. *Digital Games as History: How Videogames Represent the Past and Offer Access to Historical Practice*. Routledge Advances in Game Studies 7. New York: Routledge.

Clyde, J., Hopkins, H. and Wilkinson, G., 2012. Beyond the "Historical" Simulation: Using Theories of History to Inform Scholarly Game Design. *Loading... The Journal of the Canadian Game Studies Association* 6(9), 3-16. Available at <https://journals.sfu.ca/loading/index.php/loading/article/view/105>, accessed 10 June 2021.

Conrad, M., Létourneau, J. and Northrup, D., 2009. Canadians and Their Pasts: An Exploration in Historical Consciousness. *The Public Historian* 31(1), 15-34. DOI: <https://doi.org/10.1525/tph.2009.31.1.15>.

*Crusader Kings* series, 2004-2021. [video game] (Microsoft Windows, macOS, Linux) Paradox Interactive.

de Groot, J., 2016. *Consuming History: Historians and Heritage in Contemporary Popular Culture*. Second edition. London, New York: Routledge.

Elliott, A. B. R. and Kapell, M. 2013. Introduction: To Build a Past That Will “Stand the Test of Time” - Discovering Historical Facts, Assembling Historical Narratives. In: Kapell, M. and Elliott A. B. R. eds. *Playing with the Past: Digital Games and the Simulation of History*. New York: Bloomsbury Academic, 1-3.

Gee, J. P., 2003. What Video Games Have to Teach Us about Learning and Literacy. *Computers in Entertainment* 1(1), 20. DOI: <https://doi.org/10.1145/950566.950595>.

Graham, S., 2014. Rolling Your Own: On Modding Commercial Games for Educational Goals. In: Kee, K., ed. *Pastplay: Teaching and Learning History with Technology*. Ann Arbor: University of Michigan Press, 214-27. DOI: <https://doi.org/10.2307/j.ctv65swr0>.

*Grand Theft Auto* series, 1997-2013. [video game] (multiplatform) Rockstar North, Digital Eclipse, Rockstar Leeds and Rockstar Canada, Rockstar Games.

Hamilton, P. and Ashton, P., 2003. *Australians and the Past: A National Survey*. Perth: University of Queensland Press.

Hammar, E. L., 2020. *Producing & Playing Hegemonic Pasts: Historical Digital Games as Memory-Making Media*. [PhD thesis], Arctic University of Norway. Available at <https://munin.uit.no/handle/10037/17717>, accessed 10 June 2021.

Hartmann, T. and Klimmt, C., 2006. Gender and Computer Games: Exploring Females' Dislikes. *Journal of Computer-Mediated Communication* 11(4), 910-31. DOI: <https://doi.org/10.1111/j.1083-6101.2006.00301.x>.

Hartmann, T., Möller, I. and Krause, C., 2015. Factors Underlying Male and Female Use of Violent Video Games. *New Media & Society* 17(11), 1777-94. DOI: <https://doi.org/10.1177/1461444814533067>.

Hayes, E., 2005. Women, Video Gaming and Learning: Beyond Stereotypes. *TechTrends* 49(5), 23-28. DOI: <https://doi.org/10.1007/BF02763686>.

*Hearts of Iron* series, 2002-2020. [video game] (Microsoft Windows, macOS, Linux) Paradox Interactive.

Houghton, R., (forthc.) Scholarly History through Digital Games: Pedagogical Practice as Research Method. In: Ariese-Vandemeulebroucke, C. E., Boom, K. H. J., Mol, A. A. A. and Politopoulos A., eds. *Return to the Interactive Past: The Interplay of Video Games and Histories*, Vol. 2. Leiden: Sidestone Press.

Houghton, R., 2016. Where Did You Learn That? The Self-Perceived Educational Impact of Historical Computer Games on Undergraduates. *gamevironments* 5, 8-45. Available at <http://www.gameenvironments.uni-bremen.de>, accessed 10 June 2021.

Houghton, R., 2018. World, Structure and Play: A Framework for Games as Historical Research Outputs, Tools, and Processes. *Práticas Da História* 7, 11-43.

Houghton, R., 2021. If You're Going to Be the King, You'd Better Damn Well Act like the King: Setting Objectives to Encourage Realistic Play in Grand Strategy Computer Games. In: Alvestad, K. and Houghton, R., eds. *The Middle Ages in Modern Culture: History and Authenticity in Contemporary Medievalism*. London: I.B. Tauris.

Jiménez Alcázar, J. F., 2011. The Other Possible Past: Simulation of the Middle Ages in Video Games. *Imago Temporis: Medium Aevum* 5, 299-340. DOI: <https://doi.org/10.21001/imagotemporis.v0i0.262119>.

Kapell, M. and Elliott, A. B. R., eds. *Playing with the Past: Digital Games and the Simulation of History*. New York: Bloomsbury Academic, 153-67.

Kee, K. and Graham, S., 2014. Teaching History in an Age of Pervasive Computing: The Case for Games in the High School and Undergraduate Classroom. In: Kee, K., ed. *Pastplay, Teaching and Learning History with Technology*. Leiden: University of Michigan Press, 270-291. DOI: <https://doi.org/10.2307/j.ctv65swr0.17>.

Koebel, G., 2017. Simulating the Ages of Man: Periodization in Civilization V and Europa Universalis IV. *Loading... The Journal of the Canadian Game Studies Association* 10(17), 60-76. Available at <https://journals.sfu.ca/loading/index.php/loading/article/view/192>, accessed 10 June 2021.

Kort-Butler, L. A., 2020. Gamers on Gaming: A Research Note Comparing Behaviors and Beliefs of Gamers, Video Game Players, and Non-Players. *Sociological Inquiry*, April, 1-21. DOI: <https://doi.org/10.1111/soin.12363>.

Kowert, R., Breuer, J. and Quandt, T., 2017. Women Are from FarmVille, Men Are from ViceCity: The Cycle of Exclusion and Sexism in Video Game Content and Culture. In: Kowert, R. and Quandt, T., eds. *New Perspectives on the Social Aspects of Digital Gaming: Multiplayer 2*. New York, London: Routledge, 136-152.

Lee, J. K. and Probert, J., 2010. Civilization III and Whole-Class Play. *The Journal of Social Studies Research* 34(1), 1-28.

Leonard, D., 2003. "Live in Your World, Play in Ours": Race, Video Games, and Consuming the Other. *SIMILE: Studies in Media & Information Literacy Education* 3(4), 1-9. DOI: <https://doi.org/10.3138/sim.3.4.002>.

Lucas, K. 2004. Sex Differences in Video Game Play: A Communication-Based Explanation. *Communication Research* 31(5), 499-523. DOI: <https://doi.org/10.1177/0093650204267930>.

Manero, B., Torrente, J., Freire, M. and Fernández-Manjón, B., 2016. An Instrument to Build a Gamer Clustering Framework According to Gaming Preferences and Habits. *Computers in Human Behavior* 62(September), 353-63. DOI: <https://doi.org/10.1016/j.chb.2016.03.085>.

*Mass Effect* series, 2007-2021. [video game] (multiplatform) BioWare, Edge of Reality, Demiurge Studios and Straight Right, Microsoft Game Studios and EA.

McCall, J. 2016. Teaching History With Digital Historical Games: An Introduction to the Field and Best Practices. *Simulation & Gaming* 47(4), 517-42. DOI: <https://doi.org/10.1177/1046878116646693>.

McCall, J., 2012. Navigating the Problem Space: The Medium of Simulation Games in the Teaching of History. *History Teacher* 46(1), 9-28.

McCall, J., 2019. Playing with the Past: History and Video Games (and Why It Might Matter). *Journal of Geek Studies* 6(1), 29-48.

Miller, M. K. and Summers, A., 2007. Gender Differences in Video Game Characters' Roles, Appearances, and Attire as Portrayed in Video Game Magazines. *Sex Roles* 57(9-10), 733-742. DOI: <https://doi.org/10.1007/s11199-007-9307-0>.

Nakamura, L., 2012. Queer Female of Color: The Highest Difficulty Setting There Is? Gaming Rhetoric as Gender Capital. *ADA: A Journal of Gender New Media and Technology* 1. DOI: <https://doi.org/10.7264/N37P8W9V>.

O'Neill, K. and Feenstra, B., 2016. "Honestly, I Would Stick with the Books": Young Adults' Ideas About a Videogame as a Source of Historical Knowledge. *Game Studies* 16(2). Available at <http://gamestudies.org/1602/articles/oneilfeenstra>, accessed 10 June 2021.

Ortega, S., 2015. Representing the Past: Video Games Challenge to the Historical Narrative. *Syllabus* 4(1), 1-13. Available at <https://www.syllabusjournal.org/syllabus/article/view/108>, accessed 10 June 2021.



Paaßen, B., Morgenroth, T. and Stratemeyer, M., 2017. What Is a True Gamer? The Male Gamer Stereotype and the Marginalization of Women in Video Game Culture. *Sex Roles* 76(7-8), 421-35. DOI: <https://doi.org/10.1007/s11199-016-0678-y>.

Pagnotti, J. and Russell III, B. W., 2012. Using Civilization IV to Engage Students in World History Content. *The Social Studies* 103(1), 39-48. DOI: <https://doi.org/10.1080/00377996.2011.558940>.

Peterson, R. D., Miller A. J. and Fedorko S. J., 2013. The Same River Twice: Exploring Historical Representation and the Value of Simulation in the Total War, Civilization and Patrician Franchises. In: Kapell, M. and Andrew B. R. Elliott, A. B. R., eds. *Playing with the Past: Digital Games and the Simulation of History*. New York: Bloomsbury Academic, 33-48.

*Pokémon* series, 1996-2019. [video game] (Game Boy, Nintendo DS, Nintendo 3DS, Nintendo Switch) Game Freak and ILCA, Nintendo.

Rehbein, F., Staudt, A., Hanslmaier, M. and Kliem, S., 2016. Video Game Playing in the General Adult Population of Germany: Can Higher Gaming Time of Males Be Explained by Gender Specific Genre Preferences? *Computers in Human Behavior* 55(February), 729-735. DOI: <https://doi.org/10.1016/j.chb.2015.10.016>.

Rochat, Y., 2020. A Quantitative Study of Historical Video Games (1981–2015). In: Lünen, A. von, Lewis, K. J., Litherland, B. and Cullum, P. eds. *Historia Ludens: The Playing Historian*. New York: Routledge. 3-19.

Salmon, J. P., Dolan, S. M., Drake, R. S., Wilson, G. C., Klein, R. M. and Eskes, G. A., 2017. A Survey of Video Game Preferences in Adults: Building Better Games for Older Adults. *Entertainment Computing* 21(June), 45-64. DOI: <https://doi.org/10.1016/j.entcom.2017.04.006>.

Salvati, A. J. and Bullinger, J. M., 2013. Selective Authenticity and the Playable Past. In: Shaw, A., 2012. Do You Identify as a Gamer? Gender, Race, Sexuality, and Gamer Identity. *New Media & Society* 14(1), 28-44. DOI: <https://doi.org/10.1177/1461444811410394>.

Shen, C., Ratan, R., Cai, Y. D. and Leavitt, A., 2016. Do Men Advance Faster Than Women? Debunking the Gender Performance Gap in Two Massively Multiplayer Online Games. *Journal of Computer-Mediated Communication* 21(4), 312-29. DOI: <https://doi.org/10.1111/jcc4.12159>.

*Sid Meier's Civilization* series, 1991-2016. [video game] (multiplatform) MicroProse, Activision and Firaxis Games, MicroProse, Activision, Hasbro Interactive, Infogrames and 2K Games.

Spring, D., 2015. Gaming History: Computer and Video Games as Historical Scholarship. *Rethinking History* 19 (2), 207-21. DOI: <https://doi.org/10.1080/13642529.2014.973714>.

*Tetris*, 1984. [video game] (Electronika 60, IBM PC) Alexey Pajitnov and Vladimir Pokhilko, Alexey Pajitnov.

*Total War* series, 2000-2020. [video game] (Microsoft Windows, macOS, Linux, iOS)  
Creative Assembly and Feral Interactive, EA, Activision and Sega.

*Uncharted* series, 2007-2017. [video game] (PlayStation 3 and 4, PlayStation Vita,  
Android, iOS) Naughty Dog, Bend Studio, Bluepoint Games and Playspree, Sony  
Interactive Entertainment.

Vas, J., 2017. Four Categories Of Video Games in the Practice of History Teaching.  
*Staféta* 2, 211-27.

Vermeulen, L. and Looy, J. V., 2016. "I Play So I Am?" A Gender Study into Stereotype  
Perception and Genre Choice of Digital Game Players. *Journal of Broadcasting &  
Electronic Media* 60(2), 286-304. DOI:  
<https://doi.org/10.1080/08838151.2016.1164169>.

Wainwright, A. M., 2014. Teaching Historical Theory through Video Games. *The  
History Teacher* 47(4), 579-612.

*Warcraft* series, 1994-2020. [video game] (multiplatform) Blizzard Entertainment,  
Blizzard Entertainment.

Whelchel, A., 2007. Using Civilization Simulation Video Games in the World History  
Classroom. *World History Connected* 4(2). Available at  
<http://worldhistoryconnected.press.uillinois.edu/4.2/whelchel.html>, accessed 10 June  
2021.

Williams, D., Yee, N. and Caplan, S. E., 2008. Who Plays, How Much, and Why? Debunking the Stereotypical Gamer Profile. *Journal of Computer-Mediated Communication* 13 (4), 993-1018. DOI: <https://doi.org/10.1111/j.1083-6101.2008.00428.x>.

Wright, J. C, Huston, A. C., Vandewater, E. A., Bickham, D. S., Scantlin, R. M., Kotler, J. A., Caplovitz, A. G., Lee, J. H., Hofferth, S. and Finkelstein, J., 2001. American Children's Use of Electronic Media in 1997. *Journal of Applied Developmental Psychology* 22 (1), 31-47. DOI: [https://doi.org/10.1016/S0193-3973\(00\)00064-2](https://doi.org/10.1016/S0193-3973(00)00064-2).