
7.

'Thinking Through' Games in the Classroom

Using Discursive Game Design to Play and Engage with Historical Datasets

René Glas, Jasper van Vught, & Stefan Werning

Transactions of the Digital Games Research Association
November 2021, Vol. 5 No 3, pp. 147-172. ISSN 2328-9422

© The text of this work is licensed under a Creative Commons Attribution — NonCommercial –NonDerivative 4.0 License (<http://creativecommons.org/licenses/by-nc-nd/2.5/>).

IMAGES: All images appearing in this work are property of the respective copyright owners, and are not released into the Creative Commons. The respective owners reserve all rights

ABSTRACT

In this contribution, we outline Discursive Game Design (DGD) as a practice-based educational framework, explain how to use this design framework to teach game historiography, and report on findings from a series of in-class experiments. Using *Nandeck*, a freely available software tool for card game prototyping, we created sets of playing cards based on two game-historical datasets. Students were then asked to prototype simple games with these card decks; both playtesting and co-creating each other's

games in an ongoing quasi-conversational process between different student groups fostered discussions on, and produced alternative insights into, the complex notion of (Dutch) game history, canonization/selection and games as national cultural heritage. The article shows how DGD can be implemented to allow for students with little or no design background to actively ‘think through’ games about the subject matter at hand.

Keywords

Discursive game design, game history, historiography, practice-based game education, playing cards

INTRODUCTION

This article outlines Discursive Game Design (DGD) as a critical practice-based game research and teaching framework, and demonstrates its practical applicability in academic education, specifically in the context of working and ‘playing’ with historical data and cultural histories. Existing approaches that employ game co-creation, such as “constructionist gaming” (Kafai & Burke 2015) or “game-media literacy” (Caperton 2012), which compares playing and making games to reading and writing respectively, have mostly been discussed in the context of younger learners, e.g., empowering children to express themselves through the ‘language’ of games. In comparison, DGD tailors game co-creation to higher education scenarios, but also has a distinctly procedural focus. The framework, which is based on earlier work on game-making as civic engagement (Werning 2019), conceptualizes Discursive Game Design as an ongoing critical conversation conducted through procedural rhetoric, which – as will be elaborated below – differentiates it from other epistemologies of practice-based game research that result in making one final game as a fixed ‘text’ an outcome of the actual research process. With this article we aim to a) outline a methodological framework that is replicable in the classroom, b)

demonstrate the benefits of such a procedural approach using the specific subject of game historiography – including contentious related issues like national gaming cultures, the “politics” of canonization (Staiger 1985), and the epistemic implications of game archiving – and c) explore how DGD can be employed to facilitate exploratory and “playful learning” (according to Mitch Resnick, quoted after Kangas 2010) about cultural data in humanities classroom contexts.

We report on educational experiments with two datasets on national videogame history; the Dutch Games Canon (Nederlandse Gamescanon) represents a curated selection of 65 influential Dutch video games¹, while the second dataset, scraped from the openly accessible database, Gamebase64², includes over 300 games published in Dutch for the Commodore 64 home computer during the 1980s and early 1990s. We reflect on how our in-class exercises using the DGD framework stimulated discussion about the data sets themselves, the ‘stories they tell’, and about the underlying notions of historiography and game culture ‘built into’ the different prototypes. Compared to game history and game preservation, game historiography – i.e., the modalities of writing different histories of games as cultural phenomena – has received less scholarly attention. For instance, Carl Therrien (2015) proposed an etymological approach to re-trace the convergent histories of the “first-person shooter” genre. We will elaborate below on the historiographical terminology supporting the method presented in this article. Most importantly, we argue that game-making as a more activating approach implements the claim for more “performativity in historiography” (Kuukkanen 2015), which holds that we need to move beyond “truth-functional evaluations” of historical accounts that epistemically reduce history to the level of ‘text’. We will show how different game prototypes designed by the students highlighted different games, connections, game characteristics, and trends in the available data. While the notion

1. The Dutch Games Canon was created by the Netherlands Institute for Sound and Vision in 2018, see: <https://gamescanon.beeldengeluid.nl/>

2. Cf. <http://www.gamebase64.com/>.

of “data games” (Erickson 2013) has so far primarily been used to ‘gamify’ traditional data analysis (using game mechanics as motivational affordances), we focus on game co-creation to develop exploratory techniques for ‘small data’ analysis, i.e., to discover new ‘stories’ in the datasets, complementary to those identified using more established (e.g., visualization) techniques.

BRINGING DISCURSIVE GAME DESIGN TO THE CLASSROOM

The use of game-making and, to a lesser degree, game modification as research and teaching heuristics in academic contexts is not new, but has become more prominent in media studies discourse since around 2015. For instance, (digital) games have been defined as “executable thought experiments” (Schulzke 2014) – placing them into a long-standing tradition of humanistic inquiry – or as “philosophical artifacts” (Gualeni 2016) that facilitate critical engagement primarily by de-familiarizing established aesthetic categories. For instance, Stefano Gualeni demonstrated this claim by creating a small game defying the habitual player-centric orientation of most virtual game worlds (2016).

All of these approaches inherently focus on the creation of one game as the ‘result’ of the research process, but do not outline a methodological framework that could be used in classroom contexts. For instance, Zavala & Odendaal (2018) advocate “codifying theory into game mechanics”, i.e., ‘translating’ concepts – in this case the role of interfaces and algorithms in app design – into corresponding game rules. To illustrate the approach, the authors create one ‘finished’ prototype, which “would hopefully result in a publishable critical board game for algorithmic literacy”. Even Greg Loring-Albright, whose notion of “critical modification” (2015) constitutes an important reference point for our methodology, essentially creates one new ‘version’ of the *Settler of Catan* board game, which exposes (and ‘corrects’)

the alleged colonialist bias in the original game's procedural rhetoric, to demonstrate his approach.

This 'product-oriented' approach emphasizes the game as a "knowledge object" (e.g., Kalthoff & Roehl 2011) rather than the process itself, a problem that also characterizes e.g., audiovisual essays as outcomes of practice-based film studies, which Grant (2016) describes as "performative research", but which in the end often follow the logic of arthouse films (e.g., being tailored to festival exhibition) than the requirements of education. Zavala & Odendaal (2018) themselves concede that "the emergence of critical play [as defined by Mary Flanagan] did not seem to occur naturally" as players struggled with the randomness of in-game events; yet, committing to one final game prevents both the authors and players (as potential co-designers) from exploring what constrains the potential for critical play, and how it could be unlocked differently.

Our own approach differs in several key areas, which we briefly outline below; as most aforementioned practice-based game research introduces its own labels, e.g., "critical board game design" (Zavala & Odendaal 2018) or "experimental game design" (Waern & Back 2015) to provide orientation, we use the term 'Discursive Game Design' (DGD) to make these distinctions explicit.

First, rather than making a game as 'product', we conceptualize **game-making as an ongoing critical conversation** conducted through the 'language' of game design, in which each prototype merely constitutes an 'utterance' that can and should be continually referenced, quoted, challenged and rephrased (i.e., modified). From that angle, insights do not primarily 'reside' in any one version, but emerge from 'between' the different prototypes. This premise builds on Gerald Voorhees' (2012) notion of "discursive games", which acknowledges the communicative dimension of games as cultural expressions. On the other hand, it draws on Bruce and Stephanie Tharp's (2018) "discursive design"

framework, which reflects how socially relevant design need not, and often should not, be “unobtrusive, intuitive, invisible, and undemanding”, but instead may “offer social criticism” more effectively by disregarding norms and usability concerns or even embracing unfinishedness as a productive form itself. It should be noted here that the critical conversation Discursive Game Design aims to start can be both self-reflective (i.e., a critical conversation on game design) and focus on the topic of choice of the exercise (i.e., a critical conversation about game historiography through game design, as our example below will show).

Second, we more explicitly reflect on the role of **game prototypes as socio-technical actors** in research or – as in the case at hand – education scenarios. To acknowledge what we call ‘socio-technical’ implications, i.e., to understand how the prototypes shape social interactions between and among groups of students as well as lecturers, Susan Leigh Star’s “boundary objects” is a key concept. Accordingly, due to their “interpretive flexibility”, “material/organizational structure” and “scale/granularity” (2010 602), the prototypes allow for learners with different disciplinary backgrounds, levels of knowledge and types of game experiences to “cooperate” on a complex issue such as game historiography without an agreed-upon “consensus” (both 604). For example, having to abide by the rules a team formulated for their games created material constraints, within which discussions about the data or the rhetoric of the prototype became more productive. Within the epistemic frame of game design as ‘conversation’, the prototypes can be defined using Mieke Bal’s (2013) notion of “theoretical objects”. Bal refers to her experience with filmmaking as a modality of theorization, and attributes discursive qualities to images, which allegedly can perform “an equivalent of speech acts” (2013 51), “speak back, resist (parts of) my interpretation of them, and make me think” or even “entice viewers to theorize” (2013 52). Similarly, game design can entice theorization, sometimes even more so if they produce unexpected dynamics or do not ‘work’ at all.

Third, we acknowledge and aim to leverage the **playful characteristics of the game co-creation process**. For instance, one co-creation heuristic we utilize is “playgriarism”, a technique which literary author Raymond Federman described as “remix[ing] the different sources and versions of his own personal narrative to form [w]hat he terms a playful self-appropriation” (Amerika 2007). Adapting this literary technique to applied game research helps prevent researchers from becoming too enamored with any particular model they devised, and to hone their self-reflexive capacities. Moreover, bricolage plays an important role, as the unfinishedness of the prototypes prevents the player from adopting an immersive disposition. Instead, considering the mechanics and available metrics as recombinable ‘building blocks’ encouraged students to adopt the co-creative perspective of a “researcher as bricoleur” (Antionijevic and Cahoy 2018).

Fourth and finally, as the goal of DGD is not the creation of one prototype as a seemingly stable knowledge object, but to actively ‘think through’ games and procedural rhetoric about the subject matter at hand, we reflect on the process itself by adopting an **autoethnographic perspective**. Specifically, we derive introspective techniques to reflect on the role of game-making in research processes after the design phase from organizational autoethnography (e.g., Doloriert 2012). Compared to documentation techniques in design research (e.g., Pedgley 2007), we do not differentiate between more and less ‘successful’ designs to infer ‘best practices’ but, most importantly, aim to understand the interplay of theoretical and practical rationales throughout the process (i.e., thinking and making mutually influence each other), not unlike how we routinely test, challenge and rework concepts in conversation with others. Within the context of DGD, the primary autoethnographic goal is to retrace the flow of the ‘game-design-as-conversation’ between different participant groups and lecturers involved. For that purpose, we pay attention to how specific designs strategically expand the discourse in different directions or re-frame (in the sense of Lakoff) key issues – in our case, for example, the agency of curators or different forms of

“emplotment” (cf. e.g., Iggers 2000, 377) in game histories – by modifying related rules.

WRITING GAME HISTORIES WITH CARD GAMES

The trigger for changing the setup of our game history classes and moving towards a DGD approach was the recently published canon of Dutch games, which had caused quite a bit of controversy on the selection of games, a process we were invited to be part of by the Netherlands Institute for Sound and Vision. It led us to explore the politics of canonization as part of game historiographies (cf. Glas and van Vught 2019) which we then wanted to make a key part of our teaching as well.

One important thing we wanted our students to become aware of when studying game histories (like the canon) is that game histories are always written from a specific perspective, and to that extent is selective, ideologically charged, and politically motivated. Suominen (2017), for example, recognizes four historiographical meta-models in the different digital game histories written in our field, with all four having widely different foci and widely different stakes. Enthusiast histories, for example, tend to focus on the game “highlights”, often presenting history as a “master narrative of innovative game development and developers, cultural consequences, and, sometimes, progress” (Suominen 2017, 551). On the other hand, emancipatory histories tend to expose these master narratives as exclusionary to certain groups of games and developers, and instead, present counternarratives in which history is written from these often more marginal positions (Suominen 2017, 551-553). In line with this idea that the histories of games we read about in textbooks are not neutral perspectives, Staiger’s notion that the politics of canonization extend to the academy, is important here. In fact, Staiger argues, in order to become a ‘proper’ game studies student, “one must master not only the canon of films on a filmography list, but a canon of articles and books, so that one can supersede that

work and be admitted into the group of professional canon-makers and canon-analyzers” (1985 18). This is not problematic per se but can be if these “networks of taste-makers” (1985 19) make it more difficult to focus on more marginal or alternative approaches to thinking about the history of digital games.

In order to confront students with the selectiveness of game histories, we wanted them to play around with, and interpret, the datasets that underlie game databases, which are often the foundation of game canonization, as they allow for easier selection of what is deemed important and what is not, i.e., “putting some order into the apparent chaos” (Staiger 1985 9). By designing small prototypes on the basis of these datasets, students can get first-hand experience of how the design of the playing platform itself and the different game mechanics that students experimented with, lay bare different selections of games, and highlight different patterns in the data. As such, students would also reflect on the role of tools in contemporary humanities educational practice itself through defamiliarization and co-creation, thereby promoting “creative data literacy” (D’Ignazio 2017) and “tool criticism” (van Es, Wieringa, and Schäfer 2018). This means that, similar to an awareness of how visualization, sonification (Hermann and Ritter 1999), and even haptification (Paneëls, Roberts, and Rodgers 2010) impact insight into the datasets, our aim was to have students reflect on the impact of the modality of play (and platform that is played on).

To tackle these aims, we decided on a set of in-class DGD experiments, which took place in undergraduate and postgraduate game studies-related courses in 2018 and 2019. The sociocultural history of games had been part of one of the course weeks for years, but the topic had, for a long time, been taught using a more traditional setup of a lecture first and then a seminar session to discuss relevant literature on the topic, as well as discussing some historically relevant games students had to play. The four DGD characteristics translated into these sessions as follows.

First, we decided upon playing cards as a familiar starting point, drawing on Nathan Altice’s framing of playing cards as “platform” (2014). This allowed for 1) easy collaboration between students from different backgrounds and with different levels of knowledge of games, and 2) reflection on the way the platform itself (the design of the card) already steered the conversation as a socio-technical actor. Choosing cards, allowed us to translate game-historical data, because the ‘hardware’, i.e., the material affordances, of playing cards afford many familiar game mechanics. Students could then quickly try out different prototypes with the dataset. Furthermore, students could then elaborate on how playing cards, due to their distinct material-semiotic properties, store data as well as structure access to, and interpretation of, these data in a similar way as Nathan Altice (2014) does, citing examples like the *Iraqi Most Wanted* (U.S. Defense Intelligence Agency 2003) or the *Archaeology Awareness* (United States Department of Defense 2007) sets of playing cards.

However, contrary to these more well-known institutional uses of card games to teach data, we are more interested in bottom-up processes, e.g., the widespread creation of custom *Magic: The Gathering* (Garfield & Rosewater 1993) cards on websites like MTG Cardsmith³ to ‘parse’ popular culture and discourse, or the grassroots design of *Wikipedia* games⁴ to play with the ordering of encyclopedic knowledge. Turkay et al. (2012) conducted a study among players of *Vampire: The Eternal Struggle*, to identify motivational factors that might facilitate using CCGs “as learning tools” (3701), including “deck building and community aspects” (3705). Yet, the authors only briefly hint at potential applications, e.g., incorporating educational material into the “flavor text” (3705) and illustrations, towards the end of the article. Instead, following up on the examples above, we focus instead on co-creating simple CCG-style prototypes to enable students to ‘think through’ the genre’s mechanic about the subject matter at hand.

3. Cf. <https://mtgcardsmith.com/>.

4. Cf. https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_games.

Second, in our aim to implement game-making as an ongoing critical conversation on the topic of game historiography, we asked students to create rough, unfinished prototypes using game historical datasets. This kept students from investing effort into the promise of a finished product, and instead, had them share and compare their different prototypes in class. As noted above, this unfinishedness is key in adopting a more reflexive stance on the role the game model plays in writing a specific game history, positioning the game first and foremost as an “object to think with” (Papert 1980) rather than a model to strive for.

Third, to emphasize the playful characteristics of the game co-creation process, we encouraged students to work from a list of known card game mechanics (and sometimes use additional tokens or other material) and modify and mix them in a variety of ways, which again kept students from pursuing a finished product. This mixing up of known mechanics also allowed students to reflect on the procedural rhetoric of these different mechanics in writing game histories, and to switch or change them if a certain mechanics was found to be problematic (e.g., too exclusionary for certain games).

Fourth, to encourage active reflection on the rules of their games in relationship to the lessons learned about the topic at hand, we had students document their design process according to a given template. That template not only forced them to provide detailed descriptions of the setup phase, the playing phase and the wrap-up phase of their games, but also asked them to reflect on these phases in relationship to the type of histories that were being written from the datasets at hand. Consequently, these familiar card game genres should be interpreted more broadly as a “symbolic form” (Manovich 1999; Paul 2007), i.e., as increasingly internalized ‘ways of seeing’ and interpreting the world, rather than simply as teaching tools.

IMPLEMENTATION AND FINDINGS

Below, the implementation of the method will be briefly outlined; we provide the two datasets online so that the co-creation exercises can be replicated and further developed in class.

For the Dutch Games Canon, a basic dataset including name, year of publication and developer already existed, which we manually extended by adding the columns ‘platform’, ‘genre(s)’, ‘theme(s)’ and ‘audience(s)’ as well as URLs to the screenshots provided by the Netherlands Institute for Sound and Vision. In Gamebase64, we first limited the selection of games via ‘Advanced Search’ to those with a ‘Dutch’ language setting, then scraped all URLs to the individual games into a list⁵, and applied a screen scrape to that list to collect corresponding metadata, including publication date, publisher, music and graphic artist(s) as well as coder(s), genre and size. The spreadsheets were processed and published as Google Sheets.⁶ These datasets were then transcoded into customizable decks of playing cards via the freely available (albeit closed source) software tool, *Nandeck*, developed by Andrea Nini to facilitate paper prototyping of board and card games.⁷ *Nandeck* uses a simple markup language similar to HTML to display the content of the columns on playing cards, including conditional formatting and unique fronts and backs via duplex printing. The immediate modifiability of the card layouts, e.g., using ready-made templates for common games like *Top Trumps* or *Magic: The Gathering* as a basis enables a bricolage approach, which we aimed to facilitate not only with reference to the card design but the student games’ mechanics as well.⁸

5. The format used was “www.gamebase64.com/game.php?id=xxxxx”.

6. The full Google Sheets datasets are available at <http://tiny.cc/dgcanon> and <http://tiny.cc/gb64-dutch>. Cf. <http://www.nand.it/nandeck/>.

7. Cf. <http://www.nand.it/nandeck/>.

8. A ZIP archive of the sample card layouts and related materials for use in *Nandeck* is available at <http://tiny.cc/DGD-nandeck>. While explaining the syntax of *Nandeck* is beyond the scope of this article, the samples should be straightforward to adapt and tailor to different learning goals and class contexts.

After printing the card decks on thick paper, we distributed random stacks to smaller groups in class. After a brief introduction of the theme and goals of the exercise, students were free to explore any type of game with the decks that they could think of. In some cases, especially when we had more in-class time, we first presented them with a simple card game setup which they could then appropriate and remix into a new game. In other cases, we also made additional game components like dice, cubes, meeples and so on available for them to include in their prototyping. The playing cards and their content should always be the primary component of their games. The aim was that the constraining principles of our predefined card design, which in itself was of course constrained by the information available in the database, should lead to new perspectives on the selectiveness of game histories and the politics of game canonization. Out of these affordances and constraints, many familiar and some new types of card games emerged, a few of which are discussed below based on their specific framing of game historiography and related issues.

A History of Winners or a Focus on Outliers

One of the first things that most, if not all, student groups did was to go through the cards given to them, looking for commonalities and differences to work with. Here, students immediately discovered some key information about the datasets. While, for instance, the Gamebase64 database itself uses a total of 177 genre categories, students soon noticed that this wide range was based on 13 main genres, which allowed them to see prominent trends and also outliers in Dutch game history on the basis of these 13 predefined genres. Some genres, like “adventure” or “arcade”, were noticeably dominant, while others like “simulation” or “sports” were rare. While the Dutch games canon featured a more coherent take on genres created by Sound and Vision, the Gamebase64 database was the product of bottom-up contributions by fans. Genre labels were thus assigned by those who uploaded the games into the database, making the data fuzzy at best. Similar looking games might have different main and/or subgenres, and

in some cases genre information was simply missing (which cards would display as “Uncategorized” or “Unknown”). The same goes for game creators, where the database showed a few highly prolific game makers from the 80s, like John Vanderaart and Cees Kramer, while other games were one-offs or had unknown creators. Hence, going through the cards showed how easy it is for games to get ‘lost’ if they, for instance, do not fit in the most dominant genres of a certain time period, or if the database contained the wrong or even missing data for particular obscure titles.

As working with sets is a well-known way to use playing cards, many prototypes used some kind of matching mechanic on the basis of one or more of the data points on the cards, which resulted in variants of games like *Memory*, *Dominos* or *Halli Galli*. Such games almost always foregrounded games with shared common parameters, with games that had no obvious connection becoming worthless for scoring points. Therefore, not just the underlying data but also the subsequent gameplay mechanics inherently favor histories of ‘winners’, e.g., of genre trends or dominant game creators. In the discussion during the design process, as well as in the class discussion afterwards, this came up in a critical fashion. Since we expect games to be fair and properly balanced rule systems, and when trying to apply these criteria to their own designs, students questioned the very ‘fairness’ of the game histories represented by the datasets. Some groups had already worked this critique into their designs. Rather than seeing outlier cards as worthless, they implemented them as especially worthwhile cards to have. For instance, a variant of the classic card game, *Crazy Eights*, used outlier cards as cards which, when drawn, could lead to receiving a bonus or punishment. Another prototype game revolved entirely around a particularly obscure game called *Nijmeegs Avontuur*, a title with no information on its individual creators or even a year of release, which was such an outlier in their deck that the entire prototype was named after it. To show the differences between the two datasets used: while the Gamebase64 entry for *Nijmeegs Avontuur* had no data entries for the creator or year of release, the Dutch games canon actually

did feature the game with all its data in full.⁹ These approaches encouraged more awareness of different data points in relationship to one another in one card, and helped students identify the obscure over the dominant entries within the databases.

From Power Struggle to Cooperative Histories

Most, if not all of the games mentioned above, using either matching mechanics or focusing on outliers as game makers/breakers had, at their starting point, a competitive angle. These games pitted players against players, resulting in winners and losers. This design choice likely reflects the students' own game experiences, but – given the subject matter at hand – arguably also substantiated the dominant 'antagonistic' interpretations of canonization and historiography as a power struggle between different groups and institutions. Instead, some groups opted for a cooperative game, thereby, for instance, interpreting the creation of a Dutch games canon as a shared project with a common goal or goals, and re-framing the canon itself not primarily as a 'tool' for selection and therefore potential exclusion and marginalization, but rather as a site for collective cultural identity formation.

The semi-cooperative *Nijmeegs Avontuur* game mentioned above fits this description of working towards a canon as a collaborative effort between different groups (see Figure 1). Two players receive a random selection of five cards that need to be played in chronological order (so if player A plays a game from 1983, player B needs to play a game in a later year), as well as a few pawns representing game developers. Cards played are "in development", and a pawn can be added to the card at the next turn. When the number of pawns matches the number of developers mentioned on the card, it is "published" and becomes part of the canon. When five cards are part of the canon, the game ends and the player with the most games in it wins. Here, the *Nijmeegs Avontuur* card, having no year and no named developers, inherently becomes the trump card, as it can be played anytime and without the cost of a

9. Cf. <https://gamescanon.beeldengeluid.nl/#event-nijmeegs-avontuur>.

pawn. While one player wins the game, together they have created a new historical timeline, one which also favors cards with fewer – or less known – developers, as these cards can be played quicker. In a prototype of another game loosely based on *Scrabble*, built by crossing chronological timelines of cards instead of words, whether or not a game would fit a particular timeline would be based on the best argument. Here, players could even score points by removing a game from a timeline already on the board if players agree that their argument for inclusion was convincing.



Figure 1: The creation of the Nijmeegs Avontuur game in action.

Data with Stories to Tell

The *Scrabble*-like game above is also a good example of the next type of game prototypes, which did not so much focus on connections between data points, but rather on the content of actual cards – or the creative interpretation thereof. While still focusing on the main dominant genres, a variant of *Memory* asked players to recall properties of the dataset to make sets of two. This could be as easy as two matching years of release, but could also refer to two games with text-based, narrative-driven gameplay, or two

games featuring geographical maps to play on/with. While the first is all about remembering basic factual information about two games, the latter already facilitates a more complex understanding of the games and possible historical connections as students had to look carefully at the screenshots in relation to genre data in order to interpret the games. Other teams went even further into design strategies which could be called “narrative sense-making” (Cunliffe & Coupland 2012) or “narrative inquiry” (Kim 2015). A team devised a game about interpreting and comparing stories that emerge from playing with the data as the main goal, like a variation of *The Metagame* (Zimmerman 2012) where players had to argue why their games were a better or more logical historical match than those of other players. This allowed players to make unsuspected matches, like linking themes or colors visible in the screenshots of the game to other data, or creatively ‘filling in the blanks’ when faced with missing or “messy” data (for a discussion of “messy” and other forms of “data in the humanities” cf. Schöch 2013).

CONCLUSION AND OUTLOOK

In this paper we have introduced the notion of Discursive Game Design and aimed to showcase its implementation within a class setting using an example of game historiography. Below, we briefly contemplate on our findings and outline some potential directions for follow-up research, including methodological advancements we are currently experimenting with.

By discussing our experiences in applying the DGD framework, we wanted to highlight the potential of ‘thinking through’ games and game design within a classroom setting. This potential is even greater within educational programs, which do not have design as part of the curriculum. Our students, by and large all media and culture studies students with little to no design experience, indicated that the act of game co-creation itself – rather than playing a game ‘by the rules’ – already helped them understand

how playing with the rules can lead to different forms of meaning making. Focusing on these processes rather than on working towards a contingent final ‘product’ kept them in a more critical discursive mode. More in-class applications and experiments will undoubtedly help to fine-tune and further formalize Discursive Game Design as a practice-based methodology – both within game studies on topics like the one chosen for this article, and beyond. Nonetheless, in our experience and based on class discussions and evaluation after the classroom design sessions, our students did pick up on the goals we set ourselves with this specific assignment.

Taking DGD as a starting point allowed us to rethink our approach to teaching game history, from a situation where the teacher disseminates information one-way to students, to a far more discursive mode where students understand game history through experimentation, creation and co-operation. Using playing cards as a platform to experiment with prototyping games using existing datasets of games, students were engaged with the topic at hand in a playful and, we argue, critical discursive manner. Co-creatively experimenting with game mechanics that were tied to data from historical games, and discussing and comparing the various prototypes and iterations thereof, showed game history not as a given singular and linear process, but as the result of multiplicitous processes with various identifiable trends and potential cross references, moving from a teleological to a more genealogical understanding of (game) history. More so, the use of different datasets with their own particularities, in terms of their origin and purpose, allowed for a better understanding that a canon is not a model of ‘reality’, but rather a sequence of potentially arbitrary and highly political choices. Discursive game design then allowed for reflection on data and rules, and how manipulating them allows for new insights. With its procedural focus, we found that DGD as a practice-based research method helped to make student’s discovery, creativity, and subjectivity accessible to critical inquiry, allowing for (self)reflexivity and acknowledging one’s own situatedness within and knowledge of game culture.

We see several future directions for Discursive Game Design exercises. First and foremost, while the current work on games to interpret datasets focuses on card games, the framework can be similarly applied to board games, as well as simple digital prototypes, as long as the quasi-conversational approach and the focus on multiplicity can be feasibly implemented. Second, it will be relevant to assess more systematically how DGD can be used, in conjunction with earlier work, on scholarly game design (e.g., Waern & Back 2015; Gualeni 2016), and the educational potential of game-making in specific non-digital contexts discussed, e.g., within the context of “Critical Board Game Design” (Odendaal & Zavala 2018) or “Indigenous Board Game Design” (LaPensée 2016).

As for the experiments outlined above, they characteristically did not include modifying the actual cards, in the sense of playing with their “planar, uniform, ordinal, spatial, and textural” (Altice 2014) properties (e.g., their material affordances). While this is easily possible in *Nandek*, it requires more time, being better suited to, for example, course components that include more than one session. The existing co-creation endeavors already demonstrated a surprising range of ‘expressivity’; yet, they arguably also demonstrate the importance for continuous modification on all layers, ranging from hardware to interface design or from game goals to manipulation rules. After all, an important implication of continually modifying the games used to ‘analyze’ the data is that it minimizes the risk of “simulation resignation” (as defined by Sherry Turkle, quoted after Bogost 2006, 106), i.e., the unreflected belief in a game as a model of ‘reality’. As explained, students became sensitized to the fact that the data presented in card decks did not present a ‘neutral’ take on history, but the data *categories* nonetheless remained fixed throughout.



Figure 2: The Dutch games canon cards recreated in Tabletop Simulator.

Changing the card layouts themselves by, for instance, adding new/alternative data points (like units sold, or primary audience), changing the screenshot into box art, or adding game descriptions, will lay bare yet more perspectives on how politics of selection are influenced by earlier and potentially arbitrary choices.

To overcome the constraints of the physical classroom, we are currently experimenting with using *Tabletop Simulator* (Berserk Games 2015), a proprietary software tool to prototype and play turn-based games online, in combination with *Nandeck* to facilitate mock playtesting and even afford synchronized prototyping sessions between multiple groups across different locations (see Figure 2). Moreover, documenting and preserving the network of interrelated prototypes in a standardized format is vital to reconstruct the ‘conversation’ within a particular DGD session and establish connections between different ‘conversations’ over time. Currently, we are exploring how game designs can be stored as small documents via Github Gists¹⁰, which has the benefit that users can easily document and ‘fork’ them (i.e., create alternative

10. Cf. <https://gist.github.com/discover>.

versions that can be traced back to the original designs later on). In combination with referencing the datasets as Google Sheets and the Nandek code as associated Gist files will be important next steps in creating a platform for persistent game-based 'conversations' following the DGD framework.

BIBLIOGRAPHY

Altice, N. 2014. "The Playing Card Platform." *Analogue Game Studies* 4 (2). <http://analoggamestudies.org/2014/11/the-playing-card-platform/>.

Amerika, M. 2007. "Pla(y)Giarism." *Remixthebook*. 2007. <http://www.remixthebook.com/the-course/playgiarism>.

Anderson, L. W., D. R. Krathwohl, P. W. Airasian, K. A. Cruikshank, R. E. Mayer, P. R. Pintrich, J. Raths, and M. C. Wittrock. 2001. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, Abridged Edition. New York: Longman Publishing.

Antonijevic, S., and E. Stern Cahoy. 2018. "Researcher as Bricoleur: Contextualizing Humanists' Digital Workflows." *Digital Humanities Quarterly* 12 (3). <http://www.digitalhumanities.org/dhq/vol/12/3/000399/000399.html>.

Bogost, I. 2006. *Unit Operations: An approach to videogame criticism*. Cambridge, MA: MIT Press.

Cunliffe, A. and C. Coupland. 2012. "From Hero to Villain to Hero: Making Experience Sensible through Embodied Narrative Sensemaking." *Human Relations* 65 (1): 63–88. <https://doi.org/10.1177/0018726711424321>.

D'Ignazio, C. (2017) 'Creative data literacy. Bridging the gap between the data-haves and data-have nots', *Information Design Journal*. John Benjamins, 23(1): 6–18.

Doloriert, C., and S. Sambrook. 2012. "Organisational Autoethnography." *Journal of Organizational Ethnography* 1 (1): 83–95. <https://doi.org/10.1108/20466741211220688>.

Erickson, T.. 2013. "Designing Games for Understanding in a Data Analysis Environment." *Technology Innovations in Statistics Education* 7 (2). <https://escholarship.org/uc/item/31t469kg>

Es, K. van, Wieringa, M. and Schäfer, M. T. 2018. "ToolCriticism: From Digital Methods to Digital Methodology". In *International conference on Web Studies (WS.2 2018)*, October 3–5, 2018, Paris, France. ACM, New York, NY, USA, 4 pages. <https://doi.org/10.1145/3240431.3240436>

Garfield, R., and M. Rosewater. 1993. *Magic: The Gathering*. Card Game. United States. Wizards of the Coast.

Glas, R. and J. Vught. 2019. "The politics of game canonization: Tales from the frontlines of creating a national history of games". *DiGRA '19 – Proceedings of the 2019 DiGRA International Conference: Game, Play and the Emerging Ludo-Mix*. DiGRA. <http://www.digra.org/digital-library/publications/the-politics-of-game-canonization-tales-from-the-frontlines-of-creating-a-national-history-of-games/>

Grant, C.. 2016. "The Audiovisual Essay as Performative Research." *NECSUS European Journal of Media Studies*, special issue #Home. <https://necsus-ejms.org/the-audiovisual-essay-as-performative-research/>.

Hermann, T., and H. Ritter. 1999. "Listen to Your Data: Model-Based Sonification for Data Analysis." In *Advances in Intelligent Computing and Multimedia Systems*, edited by G.E Lasker and M.R. Syed, 8: 189–94. Windsor, Ontario: International Institute

for Advanced Studies in System Research and Cybernetics.
<https://doi.org/10.4119/unibi/2701116>.

Kafai, Y. B., and Q. Burke. 2015. "Constructionist Gaming: Understanding the Benefits of Making Games for Learning." *Educational Psychologist* 50 (4): 313–34.

Kalthoff, H. and T. Roehl. 2011. "Interobjectivity and Interactivity: Material Objects and Discourse in Class." *Human Studies* 34 (4): 451–69.

Kangas, M.. 2010. "Creative and Playful Learning: Learning through Game Co-Creation and Games in a Playful Learning Environment." *Thinking Skills and Creativity* 5 (1): 1–15.
<https://doi.org/10.1016/j.tsc.2009.11.001>.

Kim, J.H. 2015. *Understanding Narrative Inquiry: The Crafting and Analysis of Stories as Research*. Thousand Oaks, CA: SAGE Publications.

Kuukkanen, J. M. 2015. "Why We Need to Move from Truth-Functionality to Performativity in Historiography." *History and Theory* 54 (2): 226-243.

Leigh Star, S.. 2010. "This Is Not a Boundary Object: Reflections on the Origin of a Concept." *Science, Technology, & Human Values* 35 (5): 601–17.

Loring-Albright, G. 2015. "The first nations of Catan: Practices in critical modification". *Analogue Game Studies*. 6 (1).
<http://analoggamestudies.org/byline/greg-loring-albright/page/3/>

Manovich, L. 1999. "Database as Symbolic Form." *Convergence* 5 (2): 80–99.

Odendaal, A. and K. Zavala. 2018. "Black boxes out of cardboard: Algorithmic literacy through critical board game design". *Analogue Game Studies*. 6 (1). <http://analoggamestudies.org/2018/>

12/black-boxes-out-of-cardboard-algorithmic-literacy-through-critical-board-game-design/

Panëels, S. A., J. C. Roberts, and P. J. Rodgers. 2010. "HITPROTO: A Tool for the Rapid Prototyping of Haptic Interactions for Haptic Data Visualization." In *2010 IEEE Haptics Symposium, HAPTICS 2010*, 261–68. IEEE. <https://doi.org/10.1109/HAPTIC.2010.5444647>.

Paper, S. 1980. *Mindstorms: Children, computers, and powerful ideas*. New York: Basic Books.

Paul, C.. 2007. "The Database as System and Cultural Form: Anatomies of Cultural Narratives." In *Database Aesthetics: Art in the Age of Information Overflow*, edited by Victoria Vesna, 95–109. Minneapolis, London: University of Minnesota Press.

Prince, S., and W. E Hensley. 1992. "The Kuleshov Effect: Recreating the Classic Experiment." *Cinema Journal* 31 (2): 59–75. <http://www.jstor.org/stable/1225144>.

Schöch, C.. 2013. "Big? Smart? Clean? Messy? Data in the Humanities." *Journal of Digital Humanities* 2 (3): 2–13.

Schulzke, M.. 2014. "Simulating Philosophy: Interpreting Video Games as Executable Thought Experiments." *Philosophy and Technology* 27 (2): 251–65.

Staiger, J. 1985. "The Politics of Film Canons." *Cinema Journal* 24 (3): 4–23.

Tharp, B. M., and S. M. Tharp. 2018. *Discursive Design. Critical, Speculative, and Alternative Things*. Cambridge, MA: The MIT Press.

Therrien, C.. 2015. "Inspecting Video Game Historiography Through Critical Lens: Etymology of the First-Person Shooter

Genre.” *Game Studies* 15 (2). <http://gamestudies.org/1502/articles/therrien>.

Turkay, S., S. Adinolf, and D. Tirthali. 2012. “Collectible Card Games as Learning Tools.” *Procedia – Social and Behavioral Sciences* 46: 3701–5.

United States Defense Intelligence Agency. 2003. *Iraqi Most Wanted*. Card Game. United States. United States Defense Intelligence Agency.

United States Department of Defense. 2007. *Archaeology Awareness*. Card Game. United States. United States Department of Defense.

Voorhees, G.. 2012. “Discursive Games and Gamic Discourses.” *Communication 1 1* (1): 1–21.

Waern, A., and J. Back. 2015. “Experimental Game Design.” In *Game Research Methods: An Overview*, edited by Petri Lankoski and Staffan Björk, 341–53. Pittsburgh, PA: ETC Press.

Werning, S. 2019. “Analytical Game Design. Game-making as a cultural technique in a gamified society.” In *The Playful Citizen: Knowledge, Creativity, Power*, edited by R. Glas, S. Lammes, M. de Lange, J. Raessens & I de Vries, 56-72. Amsterdam: Amsterdam University Press.

Zimmerman, E.. 2011. *The Metagame*. Card Game. United States. Buffalo Games/AdMagic.