The CURATE! Game

Its Development, Evaluation and Use

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Abstract - **The DigCurV CURATE! Game was developed by Katie McCadden, Prof. Susan Schreibman, and Dr. Jennifer Edmond at Trinity College Dublin (TCD), in conjunction with Carol Usher and Kate Fernie at MDR Partners in the UK. Developed as a means to highlight the importance of training in digital curation among practitioners and managers working in libraries, museums and cultural heritage institutes, the game has since expanded into a self-assessment tool, a team-building exercise and a training tool for early career students. A recent survey conducted by TCD and MDR Partners on behalf of DigCurV on the use and perceptions of the game has revealed new scope for further work**

Keywords - digital curation; digital preservation; serious games; training; self-evaluation; role-play; experiential learning; game-based training

I. GAMEPLAY AS A TRAINING TOOL

Game or role-play has long been established in practical training situations - typically in high-risk situations (Ericsson, 2006). Aeroplane pilots are trained in simulators before they enter the cockpit; military training involves a significant amount of combat training before soldiers are shipped off to the battlefield (Smith 2006). Yet, experiential teaching practices, or 'Serious Games', as a training or coaching technique in less stressful/ high-risk environments have been steadily increasing in popularity (Ritterford, Cody and Vorderer, 2009), be they for training in marketing, strategy development or rehabilitation. Team-building workshops and exercises have also been proven effective, particularly in an online environment (Hirsch 2001; Pantazis, 2002; Grzeda, Haq and LeBrasseur, 2008).

II. THE EARLY GAME

The objective of the Digital Curation Vocational Education Europe project (DigCurV) is to provide a Curriculum Framework for training in digital curation. The CURATE! game began as an unplanned output of the project, which had already defined its objectives and deliverables at the beginning of the project. The key deliverable, the Curriculum Framework, was designed to be used by students and early-stage researchers, practitioners in the field, and managers and executives of cultural heritage institutions. The idea for the CURATE! game was devised following two influences. The first was the focus groups that were carried out as part of the required work for DigCurV, where it became apparent that a 'hypothetical scenario' worked best in eliciting responses from the participants on their experiences of digital curation, typically within their institutions. The second came from a poster that was presented by Dr. Jennifer Edmond of the CENDARI project, Dr. Owen Conlan of the cultura project, and Katie McCadden who was working on the DigCurV project. The poster, entitled 'Digital Cultural Heritage and Social Participation' was presented at the Intel European Research and Innovation Conference (ERIC) in 2011 (see Figure 1).

Figure 1:. "Digital cultural heritage and social participation" poster, as presented by Dr. Owen Conlan, Dr. Jennifer Edmond, and Katie McCadden at Intel Eric 2011

The intention behind the poster was to bring these three cultural heritage projects (CENDARI, cultura and DigCurV) based within Trinity College Dublin together to present an overview of the ways in which the intersection between technology and cultural heritage could contribute to social cohesion (J. Edmond, personal communication, May 2013). Taking the idea of a game to present a scenario to people in a way that would get them to discuss such issues was then applied to the problem of enabling those engaged in Digital Curation to actively discuss their experiences of working with digital objects. The early version of the game was entitled 'Game of the Digital Curation Lifecycle'. Following its inception, Katie McCadden and Susan Schreibman at Trinity College Dublin (TCD) developed the game in conjunction with DigCurV colleagues Carol Usher and Kate Fernie at MDR Partners in the UK. The game was developed to include a suite of questions relating specifically to obstacles or achievements typically found within digital curation projects. Answer sheets were also developed and included to allow players to keep a record of their answers. These answer sheets were then either collected by DigCurV and used to provide an insight into the way in which digital curators deal with certain situations, or they remained with the players for them to use as a reference tool. The title of the game was changed to 'CURATE!'

Figure 2. The CURATE! gameboard

III. DEVELOPING AND TESTING THE GAME

The game was envisaged as a board game, much in the tradition of non-electronic games, such as Monopoly and the "Game of Life". The game board was designed with two key play 'areas'; the outer board on which the majority of play takes place, and the inner board, which indicates the players' progress in the 'Digital Curation LifeCycle'.

The outer board is divided into an equal number of squares on each side, each of which has a scenario or instruction that directs the player as to their next move. In some cases, they are instructed to select a card from one of three categories; "CAUTION!", "DANGER!" or "DigCurV". The centre of the board features a second element of play, the lifecycle of the Digital Curation Project. This is represented as a circle that is divided into three key sections, "1. Develop, 2. Educate, 3. Manage". Players move their 'token' pieces around this circle as they complete one full cycle of the main game board.

The game was tested with colleagues and feedback was gathered. The game was then produced as an online download from the DigCurV website[34] once the feedback had been taken into consideration.

IV. WHERE IS THE GAME BEING PLAYED, AND WHO IS PLAYING IT?

Two years on from the development of the game, a survey was carried out by TCD and MDR Partners on the uses of the game, and the reception the game has received. This survey was designed for completion online, and was made available from April 2013. The survey has, by and large, reinforced anecdotal comments made to the game developers. The results so far indicate that the game has been played across Europe, as we already knew from conversations with players, as well as in the USA and Australia. In Europe, the game has been played in Belgium, Germany, Ireland, Italy, The Netherlands, Spain and the UK. In the United States, we found an instance of the game being played in New Hampshire, and in Australia we received feedback to the survey from Canberra (see Figure 3). The game received exceptionally good feedback online, especially among Twitter users.
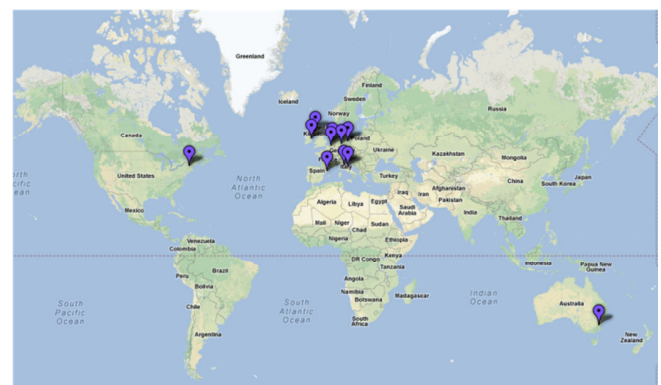
Figure 3. CURATE! game play around the world

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34 http://www.digcur-education.org

To date the game has been mentioned in more than 50 tweets from all over the world.[35]

Conferences

The game is played most frequently at conferences, usually during a coffee break or poster session. In many cases the game is introduced to the conference participants by a DigCurV partner who either co-organises the conference, or who brought the game as a part of their poster presentation. For example, the game was played at the Digital Strategies for Heritage Conference (DISH 2011) in Rotterdam during the "Digital Curation Training: Mind The Gap!" workshop which was co-organised by DigCurV partners Kate Fernie and Katie McCadden.[36] Trinity College Dublin demonstrated the game at the Digital Repository of Ireland's 'Realising the Opportunities of Digital Humanities' conference[37] in November 2012 in Dublin, and at the COIMBRA group workshop 'Digitising University Collections' at the University of Edinburgh in May 2013. The game was played by attendees at the DigCurV 'Framing the Digital Curation Curriculum' Workshop in Florence in December 2012 and consequently at the final DigCurV conference in May 2013. The game was also played at LATINA Post-it in Vilnius, Lithuania at the end of May 2013, which comprised a seminar and workshops organised by the Mykolas Romeris University, Lithuania and the Oslo and Akershus University College, Norway.[38]

The game has also been included in conference programmes through more organic means, where an individual who is not a DigCurV partner has played the game elsewhere, and has included it in their conference. The most recent organic example of including the game in a seminar/training course is the Ina EXPERT event "FRAME 2013: Future for Restoration of Audiovisual Memory in Europe" which will be dedicated to 12 European professionals in the media industry and will take place in Paris in June 2013 [39]. This is, of course, the most encouraging use of the game.

CURATE! in the classroom

Teaching is the second most popular situation in which the game is played. Respondents to the survey indicated that they have used the game as part of a university programme. Students of DigCurV partner HATII (Humanities, Advanced Technology and Information Institute), University of Glasgow played the game in their final week of the MSc. Information Management and Preservation course.[40] Trinity College Dublin has included a session of the game as part of its delivery of the MPhil. in Digital Humanities and Culture. DigCurV partners at the University of Göttingen also included the game as part of their 'nestor/DigCurV School 2012' in October 2012.

CURATE! as a Team Building exercise

Playing the game is also very popular in team-building exercises, the third most popular use of the game. For example, a pre-Christmas party for students studying Digital Humanities, as well as those interested in digital curation was held in December 2012 at TCD. The game was also played at a data management meeting in Utrecht in 2012.[41] Further examples of team-building include Dartmouth College Preservation Service in New Hampshire[42], who sat down to a game during a coffee-break. In a similar setting the game was played by the staff members of the Academic Commons online repository at the Columbia University, New York.[43]

Improvised use of the game

We have also received responses that indicate that users are improvising in their use of the game. One lecturer decided to dispense with the game board altogether, and simply used the game-cards as prompts for discussion and for testing student knowledge.

V. RESULTS OF THE SURVEY

In evaluating the game, respondents to the survey were asked to rate elements of the game, for example the questions, the board layout, and its complexity, while giving reasons for their answers.

Interaction/Discussion/Education

The discursive and interactive elements of the game were considered strong for the most part. Criticism was mostly geared towards occasions when the game was played with players who possessed very different levels of knowledge in digital curation. The mixed experience of the players on these occasions might indicate that different levels of knowledge might be barriers for some players to engage in discussion. Knowing this, however, might be turned into a strength rather than be viewed as a barrier. One of the purposes of the game is to educate. By creating a situation in which players with less experience can discuss digital curation issues with their more experienced colleagues, they are given the opportunity to learn and develop their own knowledge base.

[35] http://storify.com/karolinabadz/digcurvcurategame

[36] http://digitaalduurzaam.blogspot.com.au/2011/12/playing-digital-lifecycle-game-dish2011.html

[37] http://www.dri.ie/realising-opportunities-digital-humanities

[38] http://akkordio.net/postit/?page_id=7678

[39] http://www3.ebu.ch/files/live/sites/ebu/files/events/Academy/2013/DOCS/1.%20FRAME%20programme%202013%20session%201%2026022013.pdf

[40] http://blogs.arts.gla.ac.uk/hatii/msc-imp-mcpdm-best-blog-awards-results-are-coming/

[41] https://twitter.com/leandervdspek/status/185475787611320323

[42] http://dartmouthpreservation.blogspot.ie/2012/07/winning-game-of-digital-curation.html

[43] https://twitter.com/ResearchAtCU/status/193406095505625088/photo/1
https://twitter.com/ResearchAtCU/status/193405223610499074/photo/1

Respondents to the survey recognised this:

"depends very much on the people in your team. You can talk about the issues on different levels."

"The more experienced the players are, the more interesting is the outcome."

Equally, players at a reasonably similar level of expertise in the field as collaborators in a digital curation project will have a different background and experience, therefore the game play and resulting discussions are a learning curve for all.

Many respondents to the survey felt that the game's 'fun factor' creates a friendly and creative environment where players can openly discuss the topics and self-evaluate. Similarly, the game creates a 'safe' environment in which players can put forward suggestions on hypothetical situations without feeling like they might make a mistake. There will inevitably be some in the group who disagree with an answer given, but this only leads to discussion, as indicated by these respondents:

"The interactive nature of the game - the questions lead to more and more discussion as the game goes on."

"I think the idea of raising awareness by a game is great.

"A nice way to bring up discussions about digitalization issues."

The Game Questions

The questions and scenarios on the DigCurV and CAUTION cards range from positive points (DigCurV cards) for discussion, e.g. "You receive funding for a Digital Preservation project; what's the first thing you do?", to quite serious problems (CAUTION! cards) that can potentially arise during the lifecycle of a project, e.g. "There has been a technical failure. Your metadata from the first 3 months of the project is gone and it was not backed up. How will you handle this?" The questions also represent different levels of complexity of problems and issues that can arise. The issue of expertise among players, however, was once again seen as a weakness by respondents when it comes to the questions in the game. Some respondents felt that the quality of answer given by a less experienced player would hamper the learning capacity within a game session of players with mixed experience.

" The questions are formulated in such a way that players with little knowledge can give very general answers and get away with it."

"Some questions are too general and can provoke very general and superficial answers. Especially when played with players with little knowledge about digitisation projects."

"Some questions are not very inspiring and formulated too broad."

Those with a basic knowledge, the respondents claimed, tended to give very general and broad answers to some of the more complex questions, whereas those with a higher level of expertise in the field found many of the questions to be too broad in scope in any case, and therefore not challenging.

Some felt that the topics of the questions did not cover the entire digital curation experience sufficiently. One criticism came from someone who believed that the questions focused "too much on the side of costs, funding, etc. Not enough discussion of risks that would result from strategy selection, etc". The survey specifically asked if players felt other topic areas should be included, and the majority of results indicated a need for more questions relating to project planning for the project, issues surrounding the act of digitalization, establishing and maintaining standards in digital curation and a knowledge of software. Interestingly, the same number of people also indicated they felt there should be more questions on funding (see Table 1). However, the most common issue raised was the small amount of cards provided with the game. This had an impact on the game overall, as in many cases the lack of cards / questions caused many to abort the game before completing it, as indicated by these comments:

"Could not be finished. Not enough questions."

"Before finishing the first round there were no questions left."

Question topics	Less	Just right	More
Project Management	2	3	3
Training	0	5	4
Software	1	2	6
Work plan	0	0	8
Digitalisation	0	3	6
Budget planning	1	1	4
Staff	1	4	2
Standards	0	1	6
Feedback	0	1	5
Documentation	0	3	4
Resources	0	3	3
Funding	1	0	6
Outcomes	0	2	3
Technologies	0	3	5
Preservation	0	3	6
Other topics	0	1	2

Table 1 -Survey responses "Which topics/subjects would you like to feature more or less

Structure and Design of the game

The game is designed in the familiar format of a gameboard, on which boxes or 'spaces' are organized in a linear structure for players to move around the board on the throw of a dice. This is a common format for board games and makes game play instant and accessible to players. The three 'Digital Curation Lifecycle' stages in the centre were not considered clear enough for players, who could not understand their purpose:

> *"It is absolutely not clear what the function is of these stages and how they relate to the questions."*

A suggestion was made as to how to better make use of these stages:

> *"Give different questions for different stages."*

The game-flow received a mixed response. The majority considered the board structure to be 'ok', with further equal responses indicating that the structure was either 'easy' or 'difficult' (see Table 2). The deliberate 'stumbling blocks' on the 'DANGER!' cards was seen by some as a positive aspect, whereas it frustrated others:

> *"No 'lose next turn' card, or other things that slows down the game."*

> *"We decided to sometimes ignore 'lose next turn' because it slows down the playing rhythm..."*

One respondent commented that they strongly disliked "being stuck in the same place too often (on the board)".

Rate the board structure (play, moving around)

very easy	0
easy	2
ok	6
difficult	2
very difficult	0

Table 2   DigCurV Survey Responses "Rate the board"

The relationship between the questions and the game-board was brought into question by one or two respondents, one of whom described the journey around the board as 'kind of mechanic". They also took issue with what they described as a 'luck' component that meant that the quality of answers given to the questions had no bearing on a player's progress around the board. The size or format of the game-board itself proved difficult for those playing in groups larger than 5:

> *"The idea of having a game for digital curation is great. However, the way it is designed now (a board game) it is a bit difficult to play it in a group bigger than 5-6."*

We have already seen how one teacher dispensed with the board altogether and focused on simply using the cards. This indicates that the link between the board and the questions is perhaps tenuous in its current form. It also suggests different directions in which the game could be developed. The imagery and graphics of the board have been designed to match the DigCurV branding of dark blue, orange and white. However, there were some criticisms regarding the size of the text on either the gameboard or the questions cards, which some felt was too small.

Access to the Game

The main strength for the game in terms of access is the ability to download it directly from the DigCurV website. However, there were still some problems encountered with the download, such as this respondent whose colleague spent too much time on printing:

> *"Printing all the game cards took quite some time, my colleague told me."*

VI.   FURTHER DEVELOPMENT FOR THE CURATE! GAME

Taking the feedback from the survey into consideration, and coupling this with anecdotal feedback we have received through our own game sessions, DigCurV is currently developing a plan for improvements to the game that should address many of the issues highlighted. Many of the improvements are possible within the short term for the game, and are considered possible before the end of the DigCurV project. However, some others require much more extensive development, and have been proposed as a major part of a new funding application.

Short term developments

- The quantity, quality and range of the cards within the game was the first issue addressed, and was completed with 41 new cards trialled during a game session at the DigCurV Final Conference (May 2013).
- Clearer instructions will be developed in various media, including a YouTube instruction video.
- To tackle the issue of the different levels of experience of players, it is proposed that two sets of cards be developed to allow for a 'genius' version of the game for those with more experience or those who want a challenge, and a 'standard' game for those who are starting out, or for mixed ability groups. Of course, we would not wish to be prescriptive as to who should play which set in particular, and it should also be possible for players to combine the two sets of cards if they feel it would make the game more interesting.

The increased number of play cards is also hoped to amend the issue that some felt the progress of the game was hampered by too many 'lose a turn' or 'go back one space' cards. However, that said, there was further anecdotal feedback that indicated that the element of risk, or obstacles to

the game made it closer to the 'real-world' scenarios and frustrations associated with a digital curation or preservation project. Nonetheless, the 'DANGER!' category received the fewest new cards.

Continued additions to the cards are feasible before the end of the project, and it is hoped that further development will be able to link the topics on the cards to the three 'lifecycle' stages on the gameboard.

Medium-term developments

Further developments are desired, but may require additional funding in order to complete. For example, re-formatting the layout of the gameboard to include more squares would be feasible within a 6-month timeframe, but are perhaps not possible within the remaining month of the project.

Long-term developments

Ultimately, it is the aim of DigCurV to produce an online digital version of the game. Much of the feedback indicated that this would be favourable and this would certainly increase access and improve the interactive components of the game. Options could include the ability for players to customize the game to their needs, developing a version that could be used for assessment purposes in training, or creating some manner of multi-player set up that could allow colleagues at different institutions to play a game. The online version could play a role of an open forum where the participants can ask questions, discuss issues, network and learn from each other outside of their regular working environment and comfort zone. This could also help to populate the card questions database based on the players' own experience, expertise and concerns around digital curation and preservation.

The game has the potential to be widely included in a number of training programmes across relevant institutions and training providers, e.g. higher education courses, digital curation and preservation courses, libraries, repositories, museums, archives, galleries. In order to proceed with this long term development a carefully approached outreach plan, promotion and development strategies need to be created and disseminated.

Unfortunately, this is beyond the scope of the current project. In order to achieve this particular goal would require extensive development over a significant period of time.

VII. OVERVIEW

The CURATE! game has been extremely well received since its development two years ago. So far it has been used mostly in the classroom and at conferences, which has introduced the game to many people. The results of the survey have revealed several strengths of the game that were perhaps unexpected (flexibility of use in training environments by using the cards only), and revealed weaknesses of the game that can be addressed through recognizing the variety of

experience of the players. Both the strengths and weaknesses revealed will be taken into consideration for the continued development of the game. While many changes can be made in the short-term before the end of the project, the main changes to ensure greater flexibility would require a greater investment of time and money.

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