Introduction to the Digital Humanities

Gamification and the Digital Humanities

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# Introduction

Working in the field of the Digital Humanities means to have knowledge in a broad range topics and disciplines and being able to quickly learn all sorts of new things. Programming languages, using online and offline tools to work with all kinds of data, linguistic, History and maybe musical theory are some of the fields one may encounter during the work in the Digital Humanities. Gaining the necessary skills can be difficult, especially for people without computer science background who would like to participate in the Digital Humanities

The goal of this paper is to explore how the concepts of gamification can be beneficial for the work and research in the Digital Humanities. How gamification can improve the way people interact with new tools and programming languages which they might need during their work process. Having in mind people with and without computer science background and the various difficulties they may encounter during their work in the Digital Humanities as a combination of multiple fields of research.

In this paper we will give an overview about gamifications. The history, the definition, where gamification is already used and how it improves motivation and engagement. Besides the aspect of learning gamification can be used in crowdsourcing contexts to motivate and integrate the contributors to continue working on the project. This is interesting because some of the research problems in the Digital Humanities can not be solved with computational power or by a limited group of experts.

During the work on this paper we will develop a concept/ example for a gamification tool to be used in the Digital Humanities. This process will include how to find a suitable subject. What are the important features this tool needs to implement? How can we achieve the goal of user friendliness? What are the problems that we encounter on the way? The result will possible not be a perfect Digital Humanities gamification tool. But a blueprint of how we would fulfill this task with more time and resources.

# Gamification

## The Definition of Gamification

## The History of Gamification

## Gamification: Examples

* Pros and Cons
* Studies?

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# Where Gamification can be used in the DH

## Crowdsourcing

### Definition

+OG def quote

Crowdsourcing is sourcing model to divide work between participants to achieve a cumulative result (e.g. Wikipedia). Using the intelligence of the masses can be effective in many ways. Not only to possible save some money but to perform large tasks faster with dividing it on to the crowd and using the different skills from the people who form the crowed. Combining know how of a verity of people is often used by non-profit-organizations to create common goods. In times of the internet is becomes more popular to use Crowdsourcing to realize all kinds of projects and perform research tasks. Crowdsourcing can be also used in the Digital Humanities.

“Crowdsourcing is a type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task.”(Estelles-Arolas &Gonzales-Landon-de-Guevara, 2012)

### Crowdsourcing in the Digital Humanities

In the Digital Humanities Crowdsourcing is used to collect all variations of data. Literature, News Papers, Articles and Pictures are collected in online Library’s. All of this is aimed towards the goal to work for the common good and not for the money in the first place. On big part of the work in the Digital Humanities is to actually digitalizes and encode Data. Which cannot be solved by a small amount of people. Although there are computer programs for optical character recognition to encode text and even music sheets, the techniques are not jet fully completed, so the power of the crowd is necessary to fulfil the task to encode all the data that humanity has collected on paper in the last thousands of years. Combining the skillsets of many experts all over the world to translate or decrypt ancient texts is possible though Crowdsourcing projects. Curation, classification, transcription, correction and social tagging are some of the ways in which the public is able to contribute.

“In the digital humanities, crowdsourcing refers to the process of aggregating distributed resources (e.g., information, artefacts) to improve existing assets or to create new ones.” (<https://mw2013.museumsandtheweb.com/paper/digital-humanities-and-crowdsourcing-an-exploration-4/> ).

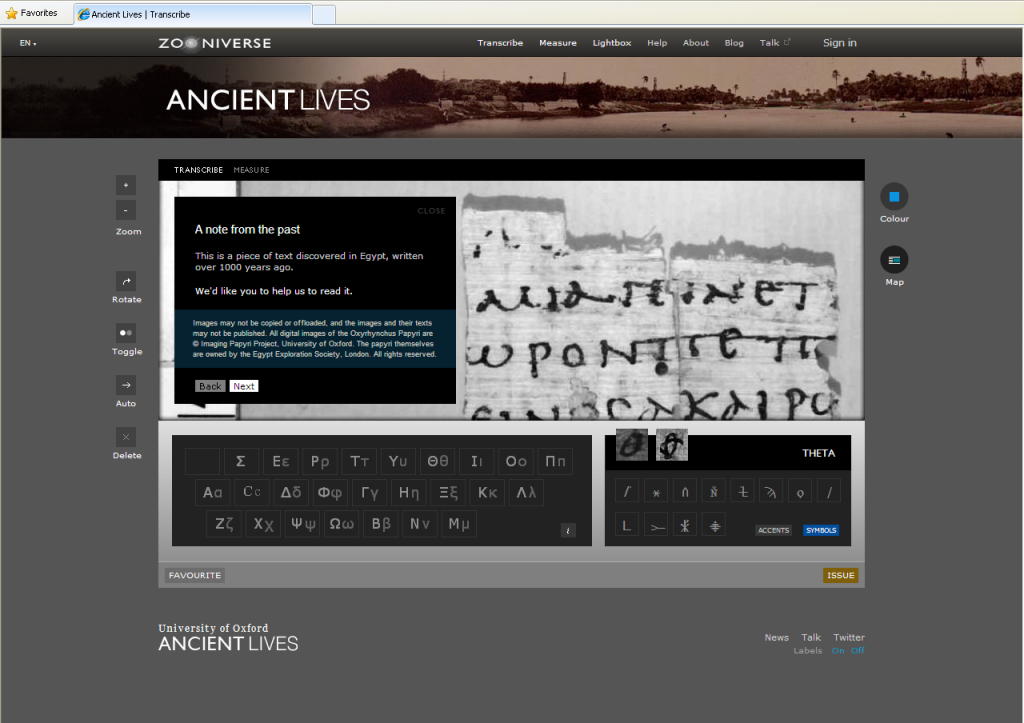
In the last years more and more Crowdsourcing projects that are related to the Digital Humanities started. Public facilities like Museums, Archives and National Libraries use Crowdsourcing techniques for their research or to intergrade and interest the public in their work. Creating a huge collation of historical artefacts trough all periods of human history and making them accessible to the public is a main part in the work of the Digital Humanities. Curation as one of the tasks to be fulfill through Crowdsourcing enable to the user to directly interact with art.

“The Brooklyn Museum (U.S.) and Kröller-Müller Museum (Netherlands) have organized public-curated exhibitions. *Click! A Crowd-Curated Exhibition* (Brooklyn Museum) first collected works of photography through an open call and then asked the audience to evaluate the works. Finally, the works were exhibited depending on their relative ranking resulted from the public evaluation.

In 2010, the Kröller-Müller Museum organized two public-curated exhibitions based on a selection of artworks of its own collection: *Expose: My Favourite Landscape* was entirely curated by children who, through a website, chose their favorite landscapes among a set „of fifty proposed by the Museum and gave their reasons why the works had to be included in the exhibition. Twenty artworks were then exhibited. “

(<https://mw2013.museumsandtheweb.com/paper/digital-humanities-and-crowdsourcing-an-exploration-4/> ).

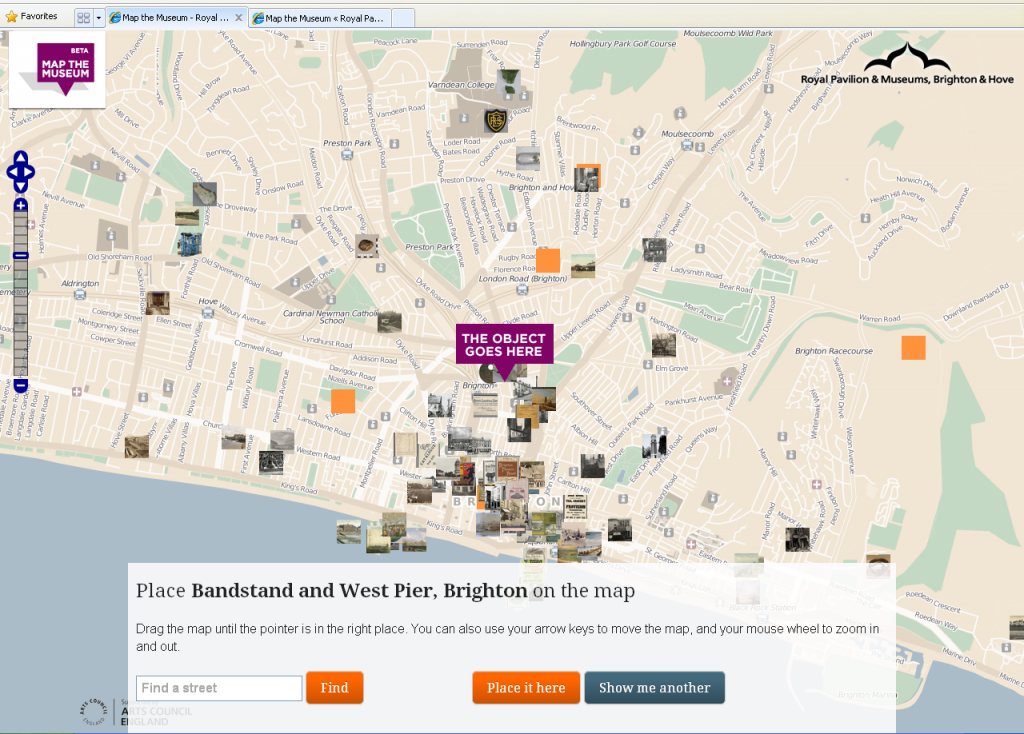
A different field of Crowd supported work is transcribing ancient or damaged documents.

*Ancient Lives* (<https://www.ancientlives.org/#/>) is a project founded by the Citizen Science Alliance (CSA) that transcribes Greek papyri fragments with the help of the general public.

*Old Weather* (<https://www.oldweather.org>) is another CSA projct with the goal to transcreibe handwirtten observations made by Royal Navy Ships during the time of the first World War. With this trancriptions historinas will be albe to trak past ship movements, retell strorys of the people on board or develop cilme model projections.

More similar approaches are used where Optical character recognition is not able to provide Ideal results, because the source martial is damaged or the fond is not machine resalable. This way of Crowdfunding is often used by Libraries to digitalize for instance News Papers (National Library of Australia). This method can be used to transcribe and encode music sheets.

*1001 Stories of Denmark* (<http://www.kulturarv.dk/1001fortaellinger/en_GB>) is a imitative so collect and display cultural heritage Users can add their own pictures and story to the map an create a wider range of information.



Allocating historical information like pictures, story or artefacts to geotags is a norther way to use Crowdsourcing for the Digital Humanities. Linking knowledge to its geographical origin and displaying is on a Map is a beautiful way to visualize the history of places all over the world and their connections.

The Listening Project ([https://sounds.bl.uk/Oral-history/The-Listening-Project#](https://sounds.bl.uk/Oral-history/The-Listening-Project))



### Gamification and Crowdsourcing

Crowdsourcing is a major area for the implementation of gamification. At least 50% of the Crowdsourcing project are gamified because gamification can be an effective approach to increase participation. To understand the influence of Gamification it is helpful to look deeper into the different characteristics of Crowdsourcing. There are four different ways in which the crowd can contribute to a project.

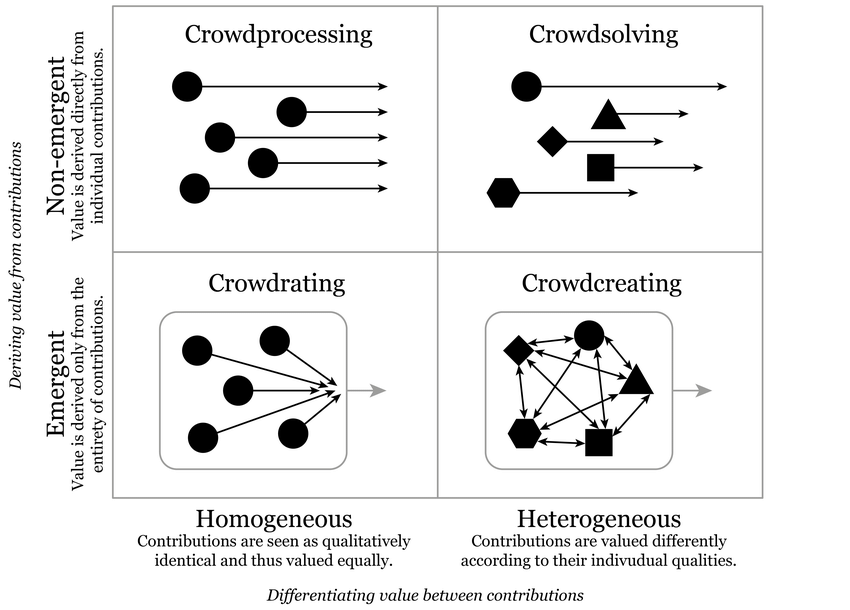
*Crowdsolving* is to use the diversity of the crowd to find a large number of heterogenous solutions to a given problem. This type of crowdsourcing is usually use for complex problems (e.g. Foldit).

*Crowdcreation* is any form of user generated content (e.g. YouTube) and knowledge driven from collaborative aggregation (e.g. Wikipedia)

*Crowdreating* when the crowd performs collective assessments or predictions. Could be described as using the “wisdom of crowds”. The value of an outcome is defined by the maximum number of homogenous votes.

*Crowsprocessing* if the crowd performs large quantities of homogenous tasks. The goal of this way of Crowdsourcing is to get identical contributions which than validate the work.

*The four archetypes of crowdsourcing systems based on Geiger & Schader*



Participation to a Crowdsourcing project is crucial for its success so the motivation of the actual crowd is very important. The reasons for humans to participate in Crowdsourcing can be found in a spectrum that reaches from intrinsic to extrinsic motivations. Examples for intrinsic motivation are expressing creativity or experiencing autonomy during the workflow, while developing skills, feeling competent, social recognition and financial reward are examples for extrinsic motivation. The Challenge is to develop and design Crowdsourcing in a way that positively motivates people towards Crowdsourcing work. To optimize the motivation choosing the fitting motivation method for the divers Crowdsourcing systems is necessary. Using the techniques of Gamification is one possible solution to the problem. Gamification is designed to increase the intrinsic Motivation of the user and change their behavior so maximize their motivation and the value of their input.

The commonly used Gamification features in the Crowdsourcing context are *points* that the user can collect trough fulfilling the required tasks, *leaderboards* where participants can compare their scores to create competition between the users, *time limits* to create pressure and a more dynamic workflow, *badges* that can be acquired thought special tasks or reaching milestones and *missions* to create a more game like experience and amplify long-term motivation. In some cases, a financial reward, for the score leader for instance, is combined with the gamified Crowdsourcing tool. Although studies found out that money as reward tents to decrease the motivation, combining it with Gamification can verifiably increase short-term motivation. Jet there have not been any studies to analyze the impact on long-term motivation. *Crowdprocessing* and *crowdrating* are in most gamified through points and leaderboard where *crowdcreating* and *crowdsolving* are gamified in a more complex way.

In the context of *crowdprocessing, solving* and *rating* approaches the design is often constructed to encourage competition, rather than cooperative behavior. To realize this goal points and leaderboards are implemented in the gamified tool.

But not in all cases point are created to spark competitional behavior between the users. Points can function as a reward. In *crowdprocessing* approaches, were the number of contributions is of more important than their actual quality, users can be rewarded for the tasks they fulfill with points.

In *crowdrating* applications, the participants will be rewarded with point for the quality of their contributions.

In what from *crowdcreating* have been gamified is not clearly investigated.

Most studies on the influence of Gamifications in Crowdsourcing showed that Gamification increases the long-term motivation, reduces the amount of cheating and generates a better quality of the output.

In the following paragraphs the induvial specification for the main Gamification aspects will be described.

**Points and Scores:** Nearly all of the examined systems use a metric (e.g points or scores) as a core element to reward measureable events in the human-system interaction. Due to this, we further analyzed the scoring mechanism used in the papers. Table 5 summarizes the findings clustered along the crowdsourcing types. (<https://www.researchgate.net/profile/Benedikt_Morschheuser/publication/283256508_Gamification_in_Crowdsourcing_A_Review/links/59e9fc4aaca272cddddb6e21/Gamification-in-Crowdsourcing-A-Review.pdf>)

+example

# Developing a Gamification tool

* Tool for learning Python?
* Something else?
* What is the goal of our tool?
  + Teaching basic python
* How we want to design to tool
  + UI
  + Level and points
  + Simple!
  + Fun
  + No previous knowledge needed
* Python script!