The MOOC Observatory Dashboard
(A WSI pump-priming project): Final report

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This project report shows the results of the MOOC Observatory dashboard development. It then outlines the actions taken towards its promotion and outreach, and further funding bids. Finally, it will outline the budget spent, and the justification of the expenses.

Project Overview

The dashboard features a set of visualisations that range from heatmaps of activity, demographic data, aggregate data, a comment viewing tool, and a series of “scatterplots” that show different correlations regarding different aspects of learner activity. The visualisations work for all the MOOCs in our university, and can be accessed from any PC inside or outside the university network. The visualisations can also be accessed from tablets and smartphones, although its use is not recommended in such devices. The tool is aimed at all tutors, educators, instructors, facilitators, and teaching assistants involved in the delivery of MOOCs.

Steps achieved

The Research Software Group of the University of Southampton (http://rsg.soton.ac.uk/) took up the task of making the dashboard usable and secure by carrying out the following actions:

- Bringing the Dashboard code and the data into a virtual machine hosted by the University of Southampton.
  - The data is scraped every 24 hours from the backend website of UoS space in the FutureLearn platform.
  - Part of this scraping process downloads CSV datasets for each of the course runs, also every 24 hours.
- Improving its performance and reliability by optimising the number of visualisations shown on screen.
  - The latency has been reduced substantially, from more than a minute to a few seconds, but there is still work to be done.
  - Now the visualisations no longer load on the page all at the same time. Instead, they are loaded when selected upon an unfoldable tab system.
- Interfacing directly with Future Learn to regularly retrieve most current data (every 24h)
  - The data is scraped every 24 hours from the backend website of UoS space in the FutureLearn platform.
  - Part of this scraping process downloads CSV datasets for each of the course runs, also every 24 hours.
- Replicating the service in a per run/mooc/ basis
Seeking external collaborators

An important element of the project’s agenda is seeking collaboration from other universities. The aim is that other institutions use our dashboard in exchange for insights and data. For this, actions have been taken within (and beyond) the FutureLearn community:

- Attendance at two FutureLearn Academic Network (FLAN) events, where the progress with the dashboard was presented: i.e. first its functionality and then a call for collaboration:

- Dissemination of work towards the MOOC dashboard beyond FLAN in related conferences:
  - A. Wilde, “Understanding persuasive technologies to improve completion rates in MOOCs” HCI and the Educational Technology Revolution - an HCI Educators workshop at Advanced Visual Interfaces (AVI 2016), 7 June 2016, Bari, Italy

The main outcome of the attendance at such events has been the expressions of interest in collaborating by the following institutions:

- The University Autonoma of Madrid. This is our main collaborator. Ruth Cobos, the head of their MOOC department, visited Southampton last summer, and contributed to the first iteration of the tool. Ruth is visiting again this year, and our collaboration will be focused on the comparison of their partner platform (EdX), and ours (FutureLearn) from the perspective of the learning analytics opportunities that these two platforms offer.
- The University of New South Wales: this university has a learning analytics department, the leader of which (Lorenzo Vigentini, https://research.unsw.edu.au/people/dr-lorenzo-vigentini) is very interested in our work and we have already conducted teleconferences in which we considered the similarities of our efforts. They have developed two MOOC visualisation dashboards, one for
Coursera and one for FutureLearn. They are several steps ahead of us in the development of their tool, but still they are interested in collaborating. The collaboration would consist of jointly developing a more advanced version of the visualisation dashboard. The main outcome for us is that could gain significant insights about learner data analysis and visualisation.

- The British Council: they want to use our tool with their MOOCs. That could advantageous for us because they have a vast amount of data, as they have produced the largest MOOCs ever released. At the moment we are in direct contact with their online learning director, Chris Cavey.
- Cardiff University: they are also interested in implementing our dashboard in their MOOCs.
- Health Education England: they are going to run their first MOOC with FutureLearn in September. They want to use our tool, and it would be an opportunity for gathering user experience data from those who have never used FutureLearn for teaching before.

Budget usage: Slightly over-spent at the 31st July, in two main items:

- £3800: Software development fees for the Southampton Software Research Group.
- £295: Travel expenses to the FLAN event in Glasgow for an MSc student (Miguel Ballesteros) who has participated in the project as part of his dissertation.

Further steps

There are four main lines of action planned for the UoS MOOC Dashboard, namely research, dissemination, seeking more funding, and further development.

- **Research:** The dashboard is intended to be used initially within the courses in our university. Their users will be subjects of a preliminary study, in which the usefulness and usability of the tool will be assessed. After the preliminary study, a second iteration of the study will be conducted with the institutions that implement the tool. It is expected that, in exchange of the implementation of our dashboard, the users will provide us with feedback on different the aspects of the tool.
- **Further funding seeking:** It is intended to place bids in a number of research funding bodies, and calls yet to be identified. So far one has already been placed in the EPSRC Institutional Sponsorship Activities 2016-17 fund, in which £25.000 have been requested. We will know the resolution by the end of August.