Open Research Online

From crowdsourcing data to network building: Reflections on conducting research in the open

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Abstract

This commentary presents an account of a recent project as an example of engaged research. The project focused on collecting and analysing the completion rates of Massive Open Online Courses (MOOCs). It began informally, through blogging, and developed into a funded research project with formal academic outputs. In addition to its formal outputs, the project is also cited as an example of the benefits of conducting an 'open' research project. This reflective piece tells the story of the project, and discusses the lessons learned about the value of openness and the interplay of different social media tools in the research process.

Keywords: public engagement; open research; social media; postgraduate research; crowdsourcing

> ### Key messages
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> - This paper is an example of how working 'in the open' online using social media can enhance engagement with participants throughout the research process.
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> - It highlights how the use of blogging, as a space for developing ideas, in combination with the social network infrastructure of Twitter, can amplify input and dissemination.
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> - This framework also intersects with mainstream media, making work discoverable and providing a space for rehearsing communication with the public.

The research context

The project began in early 2013, initially not as a research project but as an assessment for a Massive Open Online Course (MOOC). I had been a student on various MOOCs for the previous 12 months. My goal as a MOOC student had been to learn more about computer sciences topics. Once I started my PhD, I also used MOOCs to supplement my doctoral research training. As my research interests focus upon technology-enhanced learning, I was also interested in learning about MOOCs as a phenomenon through my studies. To try to capture what I was learning about MOOCs themselves, I started a blog about my experiences. Typically I wrote a blog post about a course once I had finished it, and tweeted the link. This generated a small amount of interest from other MOOC students and one of the course instructors.

Through my own learning experiences, and engaging with other students, I became interested in factors that might affect student engagement with MOOCs.

When I was enrolled on a MOOC about infographics and visualization, I needed to produce a project for the final assessment. I had noticed that the number of active students in MOOCs I had taken appeared to fall after peer assessments, so I decided to investigate this for my project. Because MOOC course data is not routinely or consistently publicly available, being released at the discretion of individual course leaders, data was crowdsourced from students on other MOOCs. As well as submitting the visualization for the MOOC, I posted an interactive version on my blog (see Figure 1), to share back with those who had contributed.

Figure 1: Screen capture of the MOOC completion rates visualization
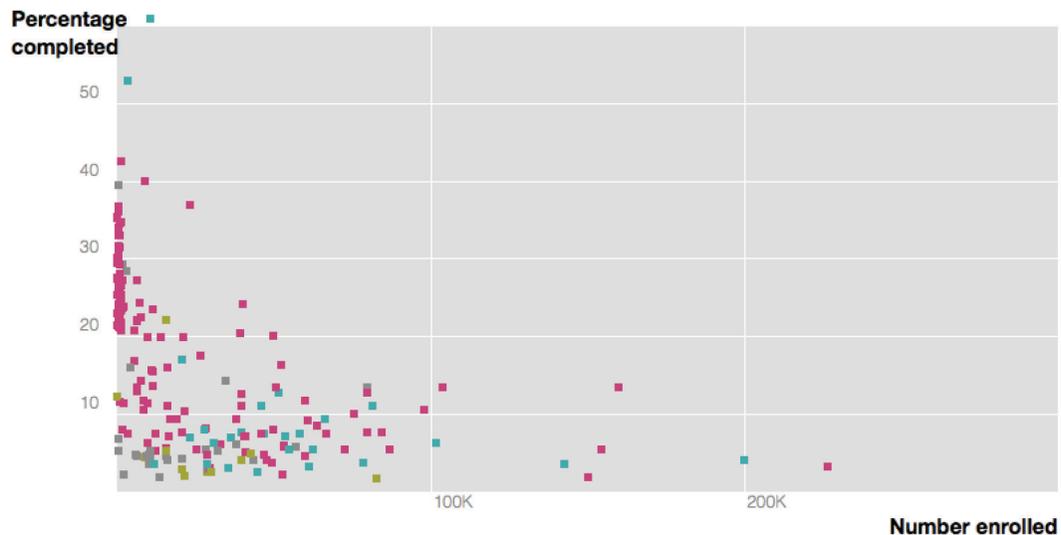

Source: Jordan (2013)

As a result of being posted online and being discussed in a blog, the interactive visualization went on to gain an audience far beyond the visualization course and original data contributors. An influential educational technology blogger, Phil Hill, found the blog post and in turn blogged and tweeted about it himself, describing it as the largest study of MOOC completion rates available at the time (Hill, 2013). As a result, there was a dramatic increase in web traffic for my original blog post and visualization, and I began to receive requests from other academics and journalists to discuss the work and contribute further data. It was fascinating to observe the graph's journey through social media, subject to bursts of attention whenever it was blogged about by others, or referred to at conferences (an annotated chart of the number of tweets over time is shown in Figure 2). Soon after, it was picked up by the conventional media, and the work has been featured in *CNN Money Magazine*, *Private Eye*, *Times Higher Education* (*THE*), the *Wall Street Journal* (*WSJ*) and numerous online news outlets.

As a result of its increased online audience, an opportunity arose for the project to make the transition to being a formal, funded academic research project. With funding from the MOOC Research Initiative, I was able to spend further time expanding the project. The crowdsourced data collection expanded to attract contributions from MOOC instructors and platforms themselves. Students still played an important role, particularly in categorizing the data. With the expanded data set, it became feasible to conduct statistical analyses, and this led to two journal papers (Jordan, 2014; Jordan, 2015). From reading others' blog posts, the work has clearly prompted critical reflection

by MOOC students, instructors and researchers about a number of issues related to MOOCs. The project received the 2015 Open University 'Engaged Research' award in the postgraduate student category (Holliman *et al.*, 2015).

Figure 2: Number of tweets over time that mention the visualization link, as a cumulative percentage
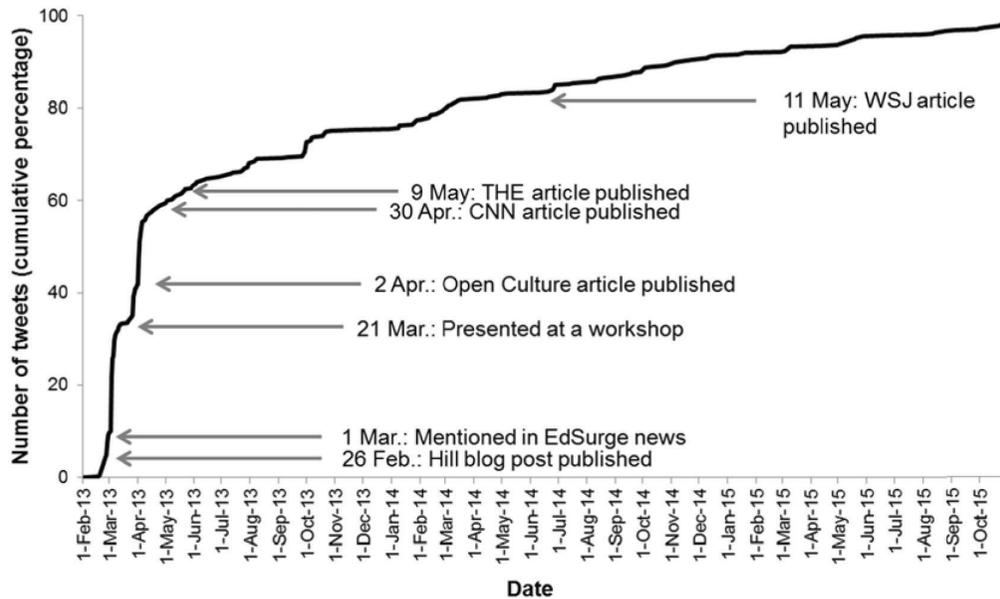
Lessons learned from the project

As a PhD student, it has been an interesting and slightly unusual experience to be involved in a project like this alongside my doctoral research. It has been particularly valuable in terms of creating a broader research portfolio beyond the scope of my PhD. The project is frequently cited as an example of open research. For example, Weller (2014) describes it as 'guerrilla research', characterized by using open information, being small-scale, quick to carry out and disseminated by social media.

From my own perspective, the most valuable lesson learned has been a greater appreciation for the ecosystem of social media tools and the nuances of their roles in practice. Without social media tools – my own blog as a space to develop ideas, Twitter as a framework for amplifying outreach, and the blogs of others as a source for crowdsourced data and further amplification – the project would not have had the same impact.

Initially, blogging simply provided a useful way of logging and developing ideas, regardless of a potential audience. I have come to view blog posts as 'stubs' that can potentially develop into more formal academic publications. Blog posts can be a way of staking out your idea on a much faster timescale than the formal publication process. If comments are posted, this can be a useful way of anticipating what might be flagged up in advance of formal peer review and therefore strengthening future papers ahead of submission.

While a blog provides a space for ideas to be published, and comment threads to be hosted, a blog in itself is not well networked. Blog posts can have low visibility in web searches. However, Twitter is a very well-developed social network infrastructure. Without tweeting about my blog posts, the audience for my project may have remained

small. Plugins for WordPress are available that can be configured to automatically tweet links to new blog posts as they are published.

There is a degree of serendipity involved in whether a particular tweet will be widely shared. Due to the structural characteristics of social networks, a single retweet by a highly connected individual can create disproportionately higher onward traffic. In relation to the educational technology community, Phil Hill is such a node in the network. Steps can be taken to try to improve the visibility of tweets. Finding the key people in the network for a topic and following them on Twitter is a first step. It is important to keep an up-to-date Twitter profile; it is very brief (see Figure 3), but this is the information that Twitter users receive in new follower email notifications.

Figure 3: Example of Twitter profile
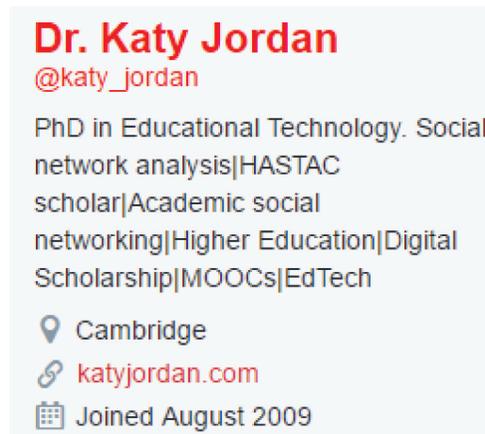
The project also demonstrates how Twitter can play a more significant role in the research cycle than just dissemination, highlighting the value of early network building in terms of being able to tap into otherwise unreachable sources of data (through crowdsourcing), building an audience, and engaging with that audience for critical reflection during the research process itself. Social media engagement needs to be built into the research process earlier in order to gain these benefits, as building relationships with network members is a two-way process and requires reciprocity.

It is also worth emphasizing that the nature of Twitter as a many-to-many form of online conversational space feeds benefits back to the researcher not only in terms of their current research but also in relation to developing academic skills. My own experiences echo those of Amy Johnson, who identifies two key benefits as 'listening broadly and … improving readability' (Johnson, 2015: 71), which ultimately have positive effects for generating ideas and thinking clearly.

The project also highlights the relationship between social media and traditional media (see Figure 2), and I felt better prepared to deal with journalists as a result of my use of social media. Blogging proved to be a good way of rehearsing how to communicate findings ahead of talking to journalists. Having already thought through what I was confident enough to say in public by writing blog posts, it was easier to think quickly in order to answer journalists' questions. It is also worth noting that although I thought I had already put the information 'out there' on my blog, journalists still preferred to speak to me, albeit very briefly.

Concluding remarks

The most illuminating part of the process of reflection on the MOOC project has been gaining further insight into how the online media ecosystem can allow both social and more formal media to work together to engage a wider audience in the process of research, at any stage. The idea of blogging as a way of developing academic writing is not novel in itself, nor is the value of Twitter for networking as a PhD student. However, in combination, Twitter can provide a social network infrastructure that allows ideas hosted in blogs to reach a wider audience, in terms of potential participants and contributors and also in terms of dissemination. The increasing overlap between social media and traditional media is evident: interactions with the press in turn served to promote the work further through Twitter, and drew attention back to the original blog.

Notes on the contributor

Katy Jordan has recently completed her PhD in the Institute of Educational Technology at the Open University, UK. Her doctoral research focused on the structural role played by academics' networks on social networking sites. Her research interests are focused on the relationship between the Internet and higher education, and she has also worked on the semantic web for education and MOOCs.

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