

Academic librarians' Twitter practices and the production of knowledge infrastructures in higher education

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Abstract

This short paper describes the use of infrastructural theory to interrogate data gathered for an ongoing study on the Twitter practices of academic librarians at one research-intensive university in the United Kingdom. In tandem with wider changes in networked technologies and ways of producing scholarship, academic librarians' roles have shifted increasingly to knowledge production, particularly in the area of research support. A related shift has been academic librarians' adoption of social media, particularly Twitter, to disseminate information and encourage community and collaboration. The few existing studies of librarians' Twitter practices, however, frame such activity as service promotion, overlooking the relationship between technology and professional practice entwined and concomitant social effects in the university.

The theoretical framework devised for this study was woven from research in anthropology and Science and Technology Studies about the nature of infrastructure. Instead of viewing infrastructure as separate and monolithic substrates supporting the circulation of goods and information, such theory posits infrastructure as relational and contingent, constituted of political decisions and having broad and co-constitutive social effects on knowledge, subjectivities and agencies (Jensen & Morita, 2017). The study's theoretical framework particularly draws on the notion of knowledge infrastructures defined as "networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds" (Edwards, 2010). The framework therefore emphasises the invisible labour of infrastructure — often dubbed *infrastructuring* — and related socio-political practices of design and maintenance that embody promises for the future (Larkin, 2018). In this picture, infrastructure is fragile and contingent, shaped by its installed base, and remarkably complicated, unfixed and open to contestation.

Based on preliminary findings, the study argues that academic librarians' Twitter practices constitute knowledge infrastructures in higher education. Using an infrastructural framework helped foreground the material conditions of librarians' knowledge production in terms of entanglements of technology and professional values, shifts in professional subjectivities and performative effects within the university. A tentative implication for studies of technology and learning is that, by insisting that infrastructure and social activity are intertwined, learners and teachers are not framed in opposition to infrastructure and are thus better able to contest totalising narratives surrounding infrastructural learning technologies such as VLEs or MOOCs. In this picture, therefore, infrastructure is not simplistically background bulwark or sinister force. Appreciating the invisible labour involved in creating and sustaining infrastructure is therefore important for understanding contemporary learning contexts.

Keywords

Infrastructure, infrastructuring, knowledge infrastructures, librarians, social media, Twitter

Research Background

The aim of this study in progress is to explore how academic librarians use Twitter to produce knowledge at one research-intensive university in the United Kingdom. In tandem with wider changes in networked technologies and ways of producing scholarship, academic librarians' roles have shifted increasingly in the past twenty years to knowledge production, particularly in the area of research support (Dempsey, 2017). A related shift has been academic librarians' widespread adoption of social media, particularly Twitter, to disseminate information and encourage scholarly community and collaboration (Deodato, 2018). Given this uptake, the use of social media as a tool for conducting librarianship has not been theorised in the literature about librarianship or higher education (HE). Little is known about academic librarians' day-to-day social media practices and the relationship of such practices to librarians' professional responsibilities and the user groups they serve. The few

existing studies of librarians' Twitter practices frame such activity as service promotion, overlooking the relationship between technology and professional practice and associated social effects in the university.

The aim of this study, therefore, is to explore the material conditions of librarians' knowledge production through examining the entangled aspects of institutional context, professional values and technology use. The study's main argument is that librarians' Twitter practices are rooted in the context of a rapidly changing digital and political landscape in HE and closely entangled with the profession's search for relevance in fluctuating times. The study furthermore argues that such Twitter practices, which seek to encourage interaction and collaboration between researchers by creating and curating a stream of beneficial information, produce knowledge for the university that is infrastructural in nature – i.e., a service on which research work depends and/or helps make sense of an information landscape (Blok et al., 2016).

Previous research into the mechanics of knowledge production in HE has tended to adopt a disciplinary focus, predominantly in scientific contexts (Bleiklie & Byrkjeflot, 2002). Fenwick and Edwards (2014), however, in their study of quiet forms of knowledge production in HE, assert that “we tend not to see the networks that are continually assembling and reassembling to bring forth and to sustain what we authorize as knowledge” (p. 39). It is therefore hoped that this study will add to such research by exploring how librarians contribute to knowledge production in HE.

Theoretical Framework

Popular conceptions of infrastructure posit it as an invisible and enduring substrate that enables and supports the circulation of goods and information (Carse, 2016). Despite the urging of Jones et al. (2005) to adopt a more relational and social model of infrastructure, however, with few exceptions (e.g., Guribye, 2015; Williamson, 2018), most studies in technology-mediated learning implicitly use popular notions of infrastructure, uncritically positioning infrastructure as monolithic support systems separate and in opposition to teaching and learning practices. To explore the entangled aspects of context, values and technology for librarians' Twitter practices, I wove together strands of theory from the fields of anthropology and Science and Technology Studies (STS) about the nature of infrastructure.

The specific kind of infrastructure explored in the study was knowledge infrastructures, defined as “networks of people, artifacts, and institutions that generate, share, and maintain specific knowledge about the human and natural worlds” (Edwards, 2010, p. 17). Monteiro et al. (2014) assert that the distinguishing feature of knowledge infrastructures is their “epistemic machinery” (p. 8), i.e., their ability to produce new forms of knowledge. It is not that other forms of infrastructure cannot do this, it is just that the term more directly implies a special focus on how infrastructures “exert effects on the shape and possibility of knowledge in general” (Edwards et al., 2013, p. 23). Examples of knowledge infrastructures can include databases, taxonomies and scientific monitoring instruments (Karasti et al., 2016). The three components of the theoretical framework for this study thus are:

- 1 **Relationality:** Star and Ruhleder's (1996) seminal assertion that infrastructure is relational to use has become core to STS conceptions of infrastructure. In their study they ask, “When is an infrastructure?” (p. 112), after Engeström's famous provocation “When is a tool?” The question implies a relational view of infrastructure, holding multiple meanings and emerging from individuals' situated needs and practices. Infrastructures, in other words, are more than just “matter that enable the movement of other matter,” they are “the relation between things” (Larkin, 2013, p. 329).
- 2 **Infrastructuring:** Infrastructuring, as a verb, conveys the idea that infrastructures are accretions of technologies and social relations (Pipek & Wulf, 2009) — something always in the making — which in turn necessitate ongoing maintenance (Karasti et al., 2018). Studies of infrastructuring stress that mundane work on infrastructure is laden with values reflecting care towards technology and hopes/promises for the future (Granjou & Walker, 2016; Jackson, 2019; Larkin, 2018).
- 3 **Ontological effects:** If infrastructure is relational and ingrained in social activity, it has ontological effects on knowledge, subjectivities and agencies. As Jensen and Morita (2017) assert, “Viewed as open-ended experimental systems that generate emergent practical ontologies, infrastructures hold the potential capacity to do such diverse things as making new forms of sociality, remaking landscapes, defining novel forms of politics, reorienting agency, and reconfiguring subjects and objects, possibly all at once” (p. 620).

In this picture, knowledge infrastructures are fragile and contingent, shaped by their installed base, and remarkably complicated, unfixed and open to contestation.

Methodology and Methods

Due to their distributed and emergent nature, studying infrastructure poses several challenges (Karasti et al., 2016). To investigate at once knowledge infrastructures' scope and granularity, the study employed two methodological approaches commonly used in the infrastructure literature: 1) infrastructural inversion, first suggested by Bowker (1994), which encourages looking 'backstage' to view the normally invisible and undervalued work of making infrastructure, and 2) multi-sited ethnography (Marcus, 1995), which encourages applying ethnographic methods across multi-scalar and complex phenomena. Despite my participants' working at a single university with a shared context, they tweeted representing different libraries within the campus. It was hoped that a multi-sited sensibility would better illuminate the meanings and relations that participants brought to their work as well as their shared context (Karasti & Blomberg, 2018). Data-gathering methods for the study included semi-structured interviews, diaries of Twitter use, focus groups and Twitter Analytics. Data analysis, which is still ongoing, has been deductive based on themes from the theoretical framework related to relationality, infrastructuring and ontological effects.

Preliminary Findings

Preliminary findings indicate that academic librarians' knowledge production via Twitter is rooted in an imbrication of institutional context, the promises of Twitter and professional values related to creating scholarly communities. Participants emphasised that their highest priority on Twitter is to create a sense of community and identification based on their services and professional values:

I value openness and connection and believe that the library should be a welcoming space. I see us as library professionals being facilitators and helpers for knowledge, not gatekeepers of it, so presenting a human face to the world is important as it flattens perceived hierarchy and gives us a way of meeting our readers ... where they are. Tweeting is a practical application of those values as it is a social space, where people are already having conversations, and where we can connect on an equal level. (P5) [Infrastructuring]

Participants, moreover, discussed how this drive to create scholarly community both stemmed from and contributed to a heightened sense of themselves as a complex and supportive community of professionals within the university:

I think it's made us more of a reactive responsive community, so we can be more supportive of each other, because before, if we didn't have social media, it would just be over email or when we meet in-person or we'd have to keep phoning each other up. So, we can be a bit more responsive in our communities, I think. (P6) [Ontological effects]

Therefore, the daily and careful work that librarians devote to Twitter, while rooted in an evolving set of professional values and sense of professional membership, is also entangled in the changing technological context of academia and expectations fostered by the features of Twitter:

So, it is basically online engagement with your users, because so much of people's space now is digital, it's just like the library being in the digital space, like people's digital spaces and engaging with them there and bringing the library itself into that space. Rather than, I think, just being a signpost to other things or just another place on the internet where there's links to the library's opening hours, I think it is more for like engagement with people in their digital environments. (P1) [Infrastructuring]

Finally, participants discussed the relational and always-emerging nature of their work on Twitter and the accretion of their efforts over time:

I think with anything, people kind of expect with social media because it's such a fast moving platform that you'll have kind of instant engagement but it's also about relationship building, so it actually takes time to build that sense of trust and that sense of relationship for people to respond. (P5) [Relationality]

Discussion and Implications

In summary, the study's preliminary conclusion is that academic librarians' Twitter practices are knowledge infrastructures. In their attempt to create scholarly communities via Twitter, librarians produce knowledge for the university; in the process, new ontological opportunities open up which are inextricably intertwined with material conditions. Of course, whether librarians' Twitter practices are infrastructures in practice will need to be determined by further interviews with students and faculty. However, using an infrastructural framework to interrogate interview data foregrounded librarians' situated cultural practices within HE's wider political and technological milieu and helped elucidate the material conditions of their knowledge production.

The results suggest a tentative implication for research on technology and learning: by insisting that infrastructure and social activity are intertwined, learners and teachers are not framed in opposition to infrastructure and are thus better able to contest totalising narratives surrounding infrastructural technologies such as VLEs or MOOCs. Framed in such a way, infrastructure is not politics in material form, at least not simplistically so. Infrastructural theory helps destabilise fixed notions of the political imbued in totalising narratives about infrastructure by demonstrating infrastructure's contingency and fragility. In this way, infrastructural theory opens pathways to contest seemingly unassailable systems. Infrastructure, thus, is not background bulwark or sinister force, but imbricated deeply in human activity. Appreciating the invisible labour involved in creating and sustaining infrastructure is therefore important for understanding contemporary learning contexts and the conditions that best support learners.

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