

ARTICLE

Academics and Social Networking Sites: Benefits, Problems and Tensions in Professional Engagement with Online Networking

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The web has had a profound effect on the ways people interact, with online social networks arguably playing an important role in changing or augmenting how we connect with others. However, uptake of online social networking by the academic community varies, and needs to be understood. This paper presents an independent, novel analysis of a large-scale dataset published by Nature Publishing Group detailing the results of a survey about academics use of online social networking services. An open coding approach was used to analyse 480 previously unused text responses. The analysis revealed a wide range of benefits and also problems associated with engaging with online networking, and tensions within this. The analysis provides further insight into the nuances of uptake, by exploring clusters of co-reported benefits and problems within the qualitative analysis. The findings will help move forward current debates surrounding social media use by academics from being viewed in solely beneficial terms, towards an understanding of the problems and tensions that arise through academic work online.

Keywords: Digital scholarship; Academic networking; Social networking sites; Open educational practices; Networked participatory scholarship

Introduction

Digital scholarship is a research agenda concerned with how the internet and digital technologies are transforming scholarly practice, encompassing a range of social and technological factors (Weller, 2011). Digital scholarship covers a range of academic activities. Some have gained more acceptance than others, for example online repositories of open access articles are part of common practice. Recognition of alternative forms of outputs such as blogs however is still mixed. Digital scholarship has a number of potential benefits for academics, Weller (2011) identifies these using Boyer's framework across all four aspects of scholarly activity: Discovery, Integration, Application and Teaching. Research has begun to emerge in examining how online networking is perceived by academics themselves, which is necessary to understand the context within which these changes are taking place. Digital scholarship can take many forms, including the use of digital tools, new methodologies, and approaches to pedagogy.

This paper focuses on one aspect of digital scholarship, namely academic use of social networking sites (SNS). SNS are defined as online tools which allow users to create a profile and make connections with others (boyd & Ellison,

2007; Hogan & Wellman, 2014). While SNS represent only one of a range of social media tools available to academics, they are of interest due to the development of a number of services aimed specifically at academics (Nentwich & König, 2012), following the surge in popularity of generic tools over the past decade (boyd & Ellison, 2007; Rainie & Wellman, 2012). This study is underpinned by a question of whether academics' use of such tools is creating new patterns of academic networking or working more generally. This focus aligns the study with a stance derived from digital scholarship more generally, that is, of networked participatory scholarship (Veletsianos, 2016; Veletsianos & Kimmons, 2013).

Networked participatory scholarship is particularly focused upon the relationship between social, networked tools and academic practice, through examining "scholars' participation in online social networks to share, reflect upon, critique, improve, validate, and otherwise develop their scholarship" (Veletsianos & Kimmons, 2013, p.766). In her recent work focusing on academics' use of Twitter, Stewart (2015) makes the link between networked participatory scholarship and Boyer's model of scholarship (Boyer, 1990). Through their use of the platform, the academics interviewed were found to enact Boyer's dimensions of scholarship, but this model was insufficient as their practices go further, "fostering extensive cross-disciplinary, public ties and rewarding connection, collaboration, and curation between individuals rather than roles

or institutions" (Stewart, 2015, p.318). This reframing of benefits to individuals harks back to Rainie and Wellman's (2012) broader social notion of networked individualism. This study therefore locates itself in this conceptual space, between digital scholarship, networked participatory scholarship, and traditional scholarship and aims to reveal more insights into how academics use social media and their attitudes towards it. Understanding the role of online networking within digital scholarly practice is challenging due to the variety of platforms available, the different purposes for which academics may use them, and changes in the available technology and prevailing attitudes to their use over time.

Several existing studies have addressed the extent of uptake in terms of both the purposes for which academics use social media, and the specific platforms they use. Surveys typically employ Likert scale formats to assess academics' level of agreement with inventories of statements, derived from the potential ways in which social media tools may enhance scholarly practice. However, these approaches assume that the inventories are complete and tend to be built upon pre-existing assumptions that the use of online networking is beneficial to academics (Jordan, 2016). The problems associated with the use of such technologies by academics, and underlying patterns between the benefits and problems, are under-explored. Lupton (2014) is a notable exception, presenting a thematic analysis of text responses from an online survey of academics. Making connections and developing networks, openness and sharing, self-promotion, research, teaching, and support were identified as benefits (Lupton, 2014). Problems included privacy and the blurring of boundaries; lack of credibility; quality of content posted; time pressures; too much self-promotion by others; plagiarism, the risk of jeopardizing one's career; social media use becoming an obligation, and becoming a target (Lupton, 2014). Lupton's analysis presents a fuller, more balanced picture of online academic networking, although it is a single example and may have limitations as a result of its sampling. The survey was mainly circulated via social media, and the sample includes a greater proportion of social scientists and early career researchers.

In order to build a more complete inventory of both benefits and problems perceived by academics in relation to online networking, this paper presents an independent secondary analysis of a dataset based on a large scale survey of academics' uses of online social networking tools (Nature Publishing Group, 2014). While the headline findings (based on primarily quantitative data) have been reported (van Noorden, 2014), this analysis pays particular attention to the qualitative responses and issues highlighted by academics in their own words. This complements and extends the work of Lupton (2014) in that the demographic constituency of the Nature survey sample is contrasting, with a greater representation of Natural Scientists and more senior academics. The Nature survey was circulated via publishers mailing lists rather than social media, so may have a better representation of low use academics. The Nature dataset is also sufficiently large as to be able to look for underlying factors and

relationships between benefits and problems of online networking for academics.

Using the published Nature survey dataset as a basis for novel analysis, the study therefore poses the following research questions:

- i. What issues do academics choose to raise when asked for free-text comments in relation to their use of SNS?
- ii. What connections exist between the issues raised in i), so whether groups of benefits or risks tend to be associated?

Methods

This paper presents a secondary analysis of a survey dataset published online by Nature Publishing Group (Nature Publishing Group, 2014). The survey focused upon academics' use of social networking sites and was active from May to July 2014. Information about the survey was emailed to a total of 110,353 academics and academic-related professionals through three publishers' mailing lists (Thomson Reuters ISI, Palgrave, and Nature Publishing Group). 3.2% of those invited responded to the survey (3,579 responses). Responses from non-researchers were excluded, leaving an overall sample size of 3,509 (ibid.). Although it is important to note that the sample demonstrates self-selection bias due to the opt-in nature of the recruitment, the circulation of information by email rather than social media itself may address the issue of over-representation of existing social media in other studies, and allows for inclusion of academics who are lower level users of social media. The survey documentation notes that the responses received were in line with the usage profile of nature.com (ibid.). Although most of the respondents were located in Europe (1,581) or North America (1,062), the survey had a global reach, with 647 respondents based in Asia, 95 in Australasia, 95 in South America, and 29 in Africa. A range of job positions and subject areas were represented within the sample (**Table 1**).

While a summary article of the survey results appeared in Nature as a News Feature in the same year (van Noorden, 2014), the article was not comprehensive and the full dataset was also published online via Figshare (Nature Publishing Group, 2014). The survey questions focused upon uses and perceptions about social networking sites and were mainly quantitative in nature. These included sections about levels of familiarity with a range of social networking sites (categorical); reasons for using social networking sites in general (Likert scale); and the ways which academics use a subset of specific sites (multiple check list). The survey also included free-text responses, which were used as a source of illustrative quotes in the original article but not fully analysed in themselves. As such, the dataset is an unusually large and diverse sample, and provides a useful source for further analyses.

In order to gain an insight into the broader range of issues related to use of social networking sites than those covered by the specific questions, the main focus of analysis here is upon the free text responses. A total of 861 academics chose to enter free text comments at the end of

the survey, in response to the question 'Please use the box below to tell us about any other comments you may have about the social networking sites that you use' (Nature Publishing Group, 2014).

Responses were excluded from the analysis on the following criteria: (i) blank or nonsense characters; (ii) yes/no answers; (iii) survey feedback; (iv) off-topic or ambiguous responses; or (v) statements about use or non-use of sites, if not supported with a reason (e.g. "I don't use Facebook."). This yielded a final sample of 480 responses, which were imported into nVivo for qualitative analysis.

In analyzing the text responses, to elicit the issues for the first research question, a content analysis approach was used. An emergent coding scheme was developed in the process of the analysis, rather than imposed, so as not to constrain the responses and allow the issues as perceived by academics to emerge (Strauss & Corbin, 1998). The first pass of coding categorized responses according to whether they were describing benefits and/or problems associated with using social networking sites, as the comments were typically polarized in this manner. Constant comparison was used during the coding process, and axial coding used to identify emergent themes.

To address the second research question, whether these issues were related, the coding data was exported from nVivo in the form of matrix coding queries, which tabulated the frequency by which different codes co-occurred in academics' free text statements. The frequency of co-occurrence was exported as a CSV file, and imported into Excel, where the data was edited into a form (a two-column spreadsheet, of pairs of linked codes) suitable for import into a social network analysis program. This was then imported into Gephi (Bastian, Heymann & Jacomy, 2009), to allow the co-occurrence of codes to be visualised as a network. Presenting qualitative codes in this manner provides a novel way of viewing the relationships between codes, and allows clusters to be derived by applying an algorithm used to detect communities within social networks (Blondel, Guillaume, Lambiotte & Lefebvre, 2008).

Table 1: Summary of demographic characteristics of respondents to the survey, and those who submitted text responses.

Demographic factors	Entire survey (total n = 3509)		Free-text sample (total n = 480)	
	n	Percentage	n	Percentage
<i>Job position</i>				
Professor	714	20.3	113	23.5
Lecturer	748	21.3	121	25.0
Researcher	1474	42.0	179	37.1
Graduate student	253	7.2	25	5.2
Other	320	9.1	42	9.2
<i>Discipline</i>				
Arts & Humanities	81	2.3	18	3.8
Social Sciences	285	8.1	45	9.4
Formal Sciences	50	1.4	3	0.6
Natural Sciences	2107	60.0	276	57.5
Professions	970	27.6	134	27.9

Responses were also coded according to categories relating to job position and discipline (**Table 1**), to allow matrix coding queries to be carried out in order to examine differences according to these factors. As this approach is quasi-statistical, formal tests were not applied due to the subjectivity of coding.

Results

A striking asymmetry was present in the balance between academics reporting benefits and problems associated with online networking. A greater proportion of academics (345; 72%) described problems rather than benefits (189; 39%; 11% having described both). The results of the analysis are summarised via the emergent coding scheme, which is shown for benefits and problems in **Tables 2** and **3** respectively. Note that the figures show the number of academics whose responses contributed to each category, and that a single academic's response may have been coded in more than one category.

Although a smaller proportion of the sample described benefits compared to problems, a range of benefits were identified from the text responses. The benefits were more broadly distributed than the problems – that is, a dominant benefit was not present.

Table 2: Emergent coding scheme for benefits.

Benefits	n	Percentage (of 189)
Benefits for younger academics	13	6.9
Directory of academics	16	8.5
Discussions	21	11.1
Dissemination	26	13.8
Find information and papers	17	9.0
Find potential collaborators	22	11.6
Helping others	12	6.3
Improve scientific process	6	3.2
Raise own profile	19	10.1
Recruitment and opportunities	16	8.5
Stay up-to-date	23	12.2
Support multiple profiles	13	6.9
Track impact	15	7.9

Table 3: Emergent coding scheme for problems.

Problems	n	Percentage (of 345)
Concerns about commercialism	8	2.3
Digital inclusion issues	7	2.0
Digital literacy issues	29	8.4
Forbidden by institution	6	1.7
Not perceived to be useful	70	20.3
Prefer other networking	39	11.3
Privacy and security concerns	36	10.4
Social aversion	54	15.7
Spam	19	5.5
Time concerns	106	30.7
Too many sites	28	8.1
Unreliable information online	25	7.2

Dissemination of research findings was the largest single category. This included dissemination in the traditional sense, to other academics, but also through and opening up conversations about their work with other audiences and making information available in different formats to the traditional scientific paper. A corollary of dissemination via SNS is the ability to track the impact of work.

Dissemination: “I have started using Facebook and Twitter to communicate our research findings to lay people, other researchers, respectively.”

Discussions: “They have been useful for following “meta” issues regarding research. Such as replicability, pre-registration, open access, etc. These discussions are few and far between “in person”. Social networks, such as blogs and Twitter, provide a wide range of opinions on such issues that may be accessed at any time.”

Track impact: “Social networking sites give you an instant feedback, which may be positive or negative but gives you an idea regarding the impact of your research.”

The utility of being searchable (‘Googleability’ as one participant put it) is reflected in terms of the role of SNS as a virtual address book, finding potential collaborators, and raising your own profile.

Raise own profile: “I find it is very important to have a presence online – not everyone can and should have a blog or Twitter account – but it is important to be able to be ‘searchable’ and ‘findable’.”

Find potential collaborators: “Researchgate is great. You can artificially amplify your RG score by just adding comments to any old QandA. But I like the site. It is easy to use, and as I said can lead to some new international collaborations. This is particularly useful, as often at a national level there is a competitiveness that can prevent collaboration.”

Directory of academics: “keep in contact with professional colleagues, especially when they move institutions.”

This was perceived to be particularly beneficial for younger academics, along with being able to draw upon a wider network for help with particular methodological problems.

Benefits for younger academics: “I try to maintain a low profile because I am already deluged with requests for help from doctoral students and researchers who find me by email. Increasing one’s visibility (and your survey seems to assume it) may be useful for new researchers but not for everyone.”

Other related benefits included recruitment, in terms of finding potential candidates, and finding out about employment opportunities.

Recruitment and opportunities: “I find it a useful way to reach other professionals whom I could interview for specific research projects.”

Finding information and papers, and SNS as a mechanism of staying up-to-date, contrast with the problems of time and information overload.

Find information and papers: “obtain new information on my subject easily and early”, “request papers that I can not get on the network at my university.”

Stay up-to-date: “Invaluable for keeping up social connections with research colleagues with whom I would otherwise have no personal contact.”, “I have found both [Facebook and Twitter] surprisingly useful, perhaps mostly Twitter: I know am much more up to date on controversies as well as exciting new stories.”

In contrast to concerns about mixing the personal and professional, the facility to host multiple profiles and interact with different audiences this way was highlighted by some as a benefit.

Support multiple profiles: “I keep two accounts, an informal real life account in which I talk about my profession because it is part of my life, but it is definitely NOT a professional account, and a pseudonymous account. The latter is generally where I post.”

A small but interesting group of responses relate to the wider societal benefits of SNS, through their potential to improve the efficiency of the scientific process, and altruism.

Helping others: “Social network is very useful to share our expertise, knowledge to others while learning from them too.”

Improve scientific process: “All research should be open access. Researchers get too hung up on authorship and publishers keep their information too private, preventing other researchers from benefiting from a peer’s data. The scientific community needs a platform which promotes a non-competitive atmosphere and that is easy and effective to use. Basically... research benefits society only if shit gets done, so let’s get it done quicker and as a community.”

The principal problem identified was concerns about time (**Table 3**). Two further categories are distinct but related to this issue; that is, concerns about spam, and there being

too many sites, which also relate to the category of privacy and security concerns through intrusiveness. In combination, these categories were raised by a total of 167 academics (35% of the total sample).

Time concerns: “I am still inundated with email daily. I am less apt to use social networking because of existing time constraints and, quite frankly, am a bit frightened of falling down the rabbit hole like Alice.”

Spam: “excessive communication by email etc from the network represents an invasion of your time, access to network should be voluntary. For example the amount of emails received from research gate per week makes me completely regret having my profile in this network.”

Too many sites: “As important as showing up in the net is, it takes too much time, because there are so many forums.”

Privacy and security concerns: “I believe in most cases social networking can be used as a tool to invade personal privacy and that the information can be abused by unintended recipients.”

The second largest negative category comprises responses indicating that SNS are not perceived to be useful (raised by 70 academics, 15% of the total sample). Issues allied to this include having other preferred professional networks (such as conferences, email lists, homepages, and pre-existing collaborative networks), the reliability of information available online, and social aversion; this includes personal dispositions and views that it is not part of the role of being a scientist.

Not perceived to be useful: “In general I don’t find them very useful but I probably don’t know how to make the best use of them”, “I see no use for social networks in advancing my science.”

Prefer other networking: “Don’t use social networking in any form. My manuscripts and personal communication speak for themselves.”, “I believe there is nothing comparable to personal networking e.g. at conferences.”

Unreliable information online: “ResearchGate is confusing. Why should someone “endorse” me for a skill set that they only think I have, and what good is this endorsement anyways?”

Social aversion: “I am a normal scientist. I like to think and work. I discuss my work with people in the lab and colleagues/friends. I am not much interested in the personal side of science. I never read blogs/facebook/twitter. Since I have a permanent position, I can afford the luxury of not having to network and I can do exactly as I please.”

Less prevalent but potentially critical for those concerned were issues relating to digital literacy (reports of not knowing how to use sites, and the usability of their design) and digital inclusion (access to the internet, and dominance of English as the language used). The relationship between academia and start-up businesses was also questioned by some, through concerns about commercialism and institutional policies banning use of SNS entirely.

Digital literacy issues: “I feel obliged to use these – however, it’s not something I particularly enjoy – or feel I do well”, “The question, in my view, is to know whether you are in the right network. Sometimes I feel as if I were to buy fish at a hardware store.”

Digital inclusion issues: “They require commitment and good internet connectivity.”

Concerns about commercialism: “The problem with most social networking sites is that none of them care about the goals of the people that they supposedly serve. These sites have secondary goals of punishing us with marketing and ads.”

Forbidden by institution: “My professional research is for a government laboratory making it difficult for full disclosure.”

Two further analyses were undertaken to explore underlying factors or relationships between benefits and problems, both based on data obtained from matrix coding queries in nVivo. To address the second research question, the co-occurrence of items from the emergent coding schemes of benefits and problems was explored by visualising the codes as a network (**Figure 1**). Each of the themes is represented by a node and a line connecting two of the themes indicates that they were both recorded in a single academics’ text response; the weight of the line is scaled to indicate how frequently each pair co-occurred.

The codes in **Figure 1** are arranged according to benefits or problems, and clusters of themes are colour-coded according to the groups identified by applying the community detection algorithm in Gephi. Note that there are additional overlaps between the clusters; the communities identify the clusters of codes which were most frequently mentioned together in the text responses. Four groups were identified; two were predominantly negative in their perceptions (clusters 1 and 2, the teal and pink clusters, respectively), and two predominantly positive (clusters 3 and 4, the black and grey clusters). The subdivision of benefits and problems, and visualisation of links between them, provide insight into how academics’ perceptions about online networking are not clear-cut.

Cluster 1 (teal nodes) is dominated by problems, based on an aversion to using sites in preference for other forms of networking, weak digital literacy skills and feeling digitally excluded, understanding of which sites to use, and viewing online networking as a waste of time (although

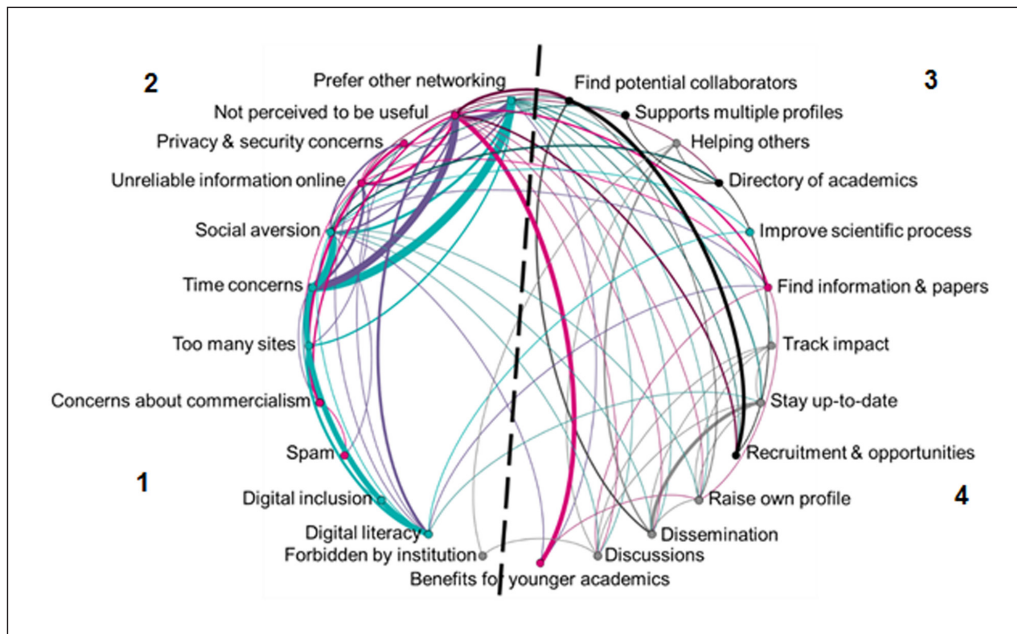


Figure 1: Network of co-occurring themes in the qualitative analysis. Benefits are arranged to the right of the dashed line, and problems to the left. Colour coding of nodes denotes the clusters.

given the clustering, the view as a waste of time is perhaps borne out of frustration at not being able to use them effectively). Links to a benefit, the potential to improve the scientific process, shows some optimism.

Cluster 2 (pink nodes) is also related predominantly to a negative perception of online networking; that online networking is not useful, concerns about privacy, security, reliability of information, spam and commercialism. It is also linked to two benefits; that is, finding papers online (notably, a new way of finding a traditional, peer-reviewed data source), and the perception that online networking has benefits for younger academics.

Cluster 3 (black nodes) is a sub-group of benefits, which may indicate a divide between those who use online networking widely as academics, and those who use it in a strategic way. The black sub-group may be indicative of strategic use, in terms of finding and making new connections, for collaboration and career opportunities. The link here to the item ‘support multiple profiles’ may suggest that those who use tools principally for networking see their academic identity online as being distinct from their personal use. The remaining benefits are clustered within the cluster 4 (grey nodes), with the addition of one problem; those who are forbidden by their institutions from using social networks online.

Discussion

This study provides an insight into the issues which academics perceive to be beneficial and problematic in relation to their professional use of SNS. While a broad range of benefits are highlighted, a much greater proportion of the sample chose to raise negative issues. The large sample size allowed a more complete range of benefits and problems to be identified than previous studies. The analysis also revealed patterns in the benefits and problems which tend to be reported together, which revealed links between positive and negative experiences. This may

help move debates around academics’ use of social media on from the positive potential of the tools, to an understanding of the tensions and paradoxes within the field in practice (Weller, 2016).

The study expands the range of beneficial and problematic aspects of online networking identified by Lupton (2014), the majority of which are confirmed and represented in the data here. The themes identified by Lupton (2014) are mapped on to the emergent themes from this study in **Figure 2**. Of the benefits identified by Lupton (2014), only ‘teaching’ was not identified directly or indirectly here.

Figure 2 demonstrates that there is considerable agreement between the two studies, particularly in terms of the benefits. This shows that there is a broad consensus across much of academia as to the benefits in using social media. **Figure 2** also reveals that there is less agreement between the two studies in relation to problems, despite there having been consensus to a greater extent around problems in the present study. Items such as ‘becoming a target’, ‘plagiarism’ and ‘the risk of jeopardizing one’s career’ may be problems perceived by users with greater awareness of the potential problems and greater digital literacies. Given the differences in circulation of the surveys (as discussed in the introduction), it is likely that the Nature survey sample has a greater representation of non- or low-level users. As Donelan (2016) noted, “academics who engage more frequently, with a higher number of social media tools, tend also to have a wider range of motivations for using them, and experience a greater number of successful outcomes” (Donelan, 2016, p.727). Nonetheless, together the results of the present study and Lupton (2014) provide a fuller and more balanced picture of the range of benefits and problems of online networking as perceived by academics themselves.

The identification of clusters of codes, based on how frequently the codes were co-used in the academics’

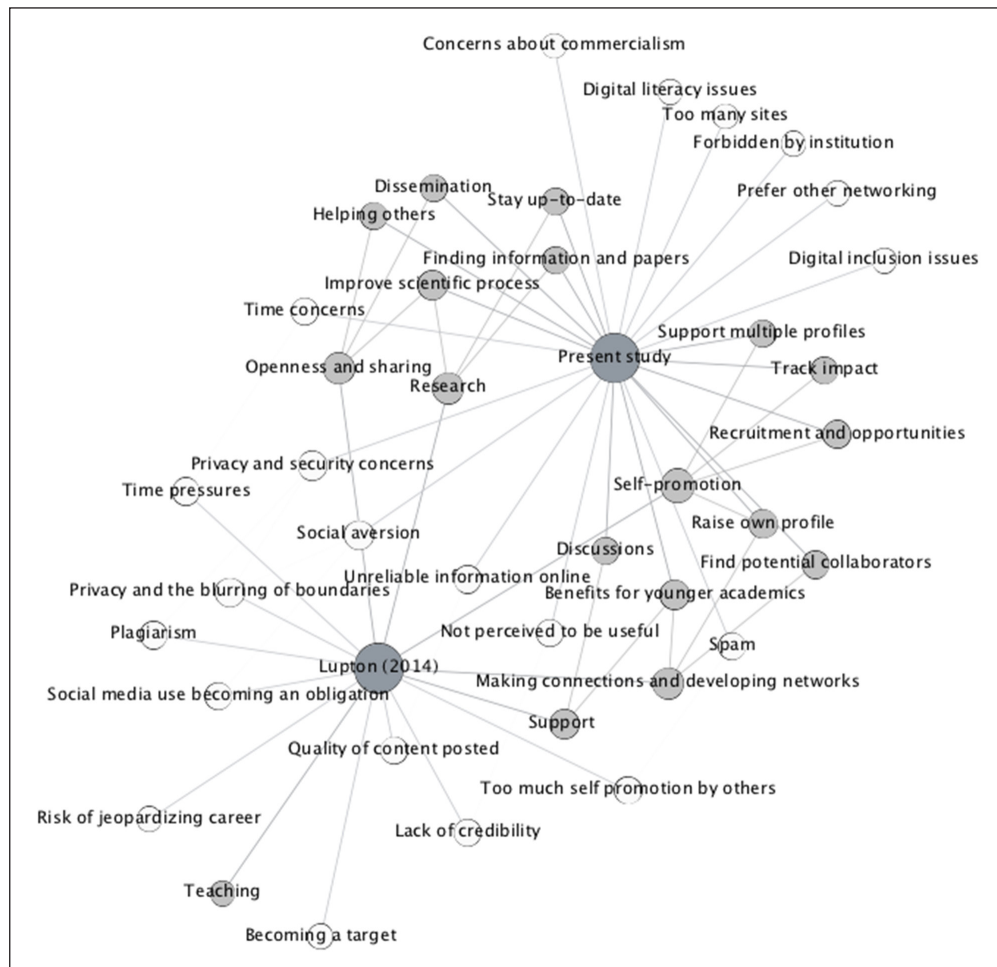


Figure 2: Mapping results from Lupton (2014) to present study. Benefits are shown in grey; problems are shown in white.

statements included in the analysis, represents a novel contribution to the field. The clusters are summarised in **Table 4**. There may be some resonance between the clusters and the typology of users explored by Donelan (2016). Donelan (2016) compared reported use of social media by academics in terms of a typology of users identified by Lorenzo-Romero, Alarcon-del-Amo and Constantinides (2012) through studying generic social media use. The results indicate that the ways in which academics use social media are strategic and differ according to the typology which includes 'expert communicators', 'versatile users', 'introvert users' and additionally 'non-adopters' (ibid.). For clusters 1 and 2, the problems outweigh the benefits. Cluster 2 may relate to non-adopters; while they see the potential benefit to society, they do not engage for personal reasons based on preferences about how best to use their time, and barriers to adoption through digital literacy and inclusion. Cluster 1 aligns with the 'introvert users'; while the concerns indicate being guarded about the extent of their exposure online, they do see the practical benefit of finding information and papers, without social engagement. The strategic use of social media by cluster 3 is reminiscent of the 'versatile users' and comprehensive use by cluster 4 perhaps echoes the 'expert communicators'. The clusters do not definitively align with the typology, however, and may indicate that

the typology (itself derived from generic social media use) requires reconsideration in the academic context. A further survey, based specifically on the codes derived here and designed in such a way to facilitate factor analysis, could be very useful to illuminate this.

This study addresses the criticism of Veletsianos (2016) that much literature in the area of digital scholarship focuses on the potential of tools, and how they are used is under-studied at present. The focus on negative aspects here is in line with a recent trend within social media to turn away from the perception of the online environment as a safe and liberating space, and towards a heightened sense of the risks and inequalities fostered by social media (Carrigan, 2016). Academics may feel obliged to use social media, whilst its use may not be acknowledged positively by institutions and academic hierarchy (Costa, 2016), and the risks of engaging are a burden borne by the individual academic. Although social media offers new opportunities for communicating research and tracking impact, these channels are often not recognised in relation to promotion and career progression (Gruzd, Staves & Wilk, 2011). However, a corollary of the potential use for SNS to enhance impact and provide metrics is a caution that the networks and altmetrics could be abused, to provide an impoverished assessment of scholars' worth or facilitate surveillance (Carrigan, 2015). An uneasy relationship

Table 4: Clusters identified by co-coding in the analysis.

Cluster 1	Cluster 2
<ul style="list-style-type: none"> – Not perceived to be useful – Privacy and security concerns – Unreliable information online – Concerns about commercialism – Spam + Find information and papers + Benefits for younger academics 	<ul style="list-style-type: none"> – Prefer other networking – Social aversion – Time concerns – Too many sites – Digital inclusion – Digital literacy + Improve scientific process
Cluster 3	Cluster 4
<ul style="list-style-type: none"> + Find potential collaborators + Support multiple profiles + Directory of academics + Recruitment and opportunities 	<ul style="list-style-type: none"> – Forbidden by institution + Helping others + Track impact + Stay up-to-date + Raise own profile

between the values of traditional Higher Education and the 'open scholarship' practised through online tools and social media can create a fragmented sense of academic identity (Costa, 2015; Kimmons & Veletsianos, 2014). The perceived muddying of professional and private identities online is both a source of tension (Veletsianos & Kimmons, 2013) and a key part of building social professional relationships online (Jordan, 2016). The merging of identities and content can also leave academics vulnerable to abuse and trolling (Veletsianos, 2016; Singh, 2016; Stewart, 2016).

The biggest concerns were related to time and efficacy however, not to issues of privacy, potential abuse or academic identity. In this context the use of social media needs to be viewed within the broader context of changes in higher education practice, which are often perceived to have increased workload and decreased academic freedom. Adding social media into this environment makes it seem like another pressure, particularly if an institution or the community begins to place greater value on a social media profile. In an analysis of 30 research papers on microblogging across sectors, Shah *et al* (2016) identify a number of uses and risks, which this study reinforces. However, the weight of time and effectiveness is greater in this analysis than in their work, which suggests that these might be more prevalent concerns for the academics in this study who were not existing high end users of social media.

While this study has helped to clarify and extend existing work in relation to academics use of online networking, it does have certain limitations and paves the way for further work. The study has the benefits of providing insight into academics' views in their own words, from a larger and more diverse sample than is typical. However, the free-text responses were gathered in response to a prompt for comments rather than a specific question, so the dataset contains more variation than if a specific question had been posed. This is a limitation and a benefit of the dataset; given the vagueness of the question, it is interesting that so many academics chose to describe problems and benefits as a response, perhaps highlighting the limitations of Likert scale items built upon pre-existing assumptions. The resulting broader inventory of

benefits and problems derived from this analysis would be well suited to a more confirmatory, quantitative survey based on the themes from the analysis, which would allow further testing of the clusters in responses and modelling of underlying factors.

Competing Interests

The authors have no competing interests to declare.

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