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Key Contributions and Future Directions of Academic Social Networking Services for the Digital Academic

Dennis Relajo

Piirus, Correspondent, Warwick, United Kingdom

Sonia Janice Pilao

Centro Escolar University, Assistant Professor, Manila, Philippines

Abstract

With the emergence of academic social networking services (ASNS), the landscape of academic networking has been dramatically revolutionised in the past decade. However, to date, there is a scarcity of literatures that offer a general overview of the services available to researchers. The current paper sought to provide a general overview on the current trends within the academic networking service, and ultimately, its impacts for the digital academic. It specifically focussed on popular academic networking services such as Academi.edu, Mendeley, Piirus and ResearchGate. Twitter – albeit not primarily an academic networking service – has been taken into account. Discussion centres on the benefit, key contributions and future directions of these platforms to both seasoned and early career researchers (ECRs).

Keywords: *research collaboration, academic social networking services, digital academic*

Introduction: The internet has phenomenally improved the way most people communicate. As a result of this, mediated communication has been greatly transformed, and has been characterised by Livingstone (2004): to be no longer simply or even mainly mass communication ('from one to many') but rather the media now facilitate communication among peers (both 'one to one' and 'many to many'). To this extent, finding research collaborators and fostering interdisciplinary works should be way easier for most researchers.

Social network sites (SNS) have not only become a fundamental part of the digital age, but also increasingly offer novel communicative and networking possibilities for academia (Nentwich & König, 2014).

These SNS have been adapted by the academia and have been aptly termed academic social networking services (ASNS). However, in spite of the ease of communication during the digital age, one would expect that this would consequently revolutionise the means of looking for collaborators among researchers, particularly multidisciplinary collaborations. Interestingly, challenges still do exist. In fact, in a recent survey (Association of Research Managers and Administrators, n.d. para. 3-5) it was revealed that 80% of researchers said that creating multidisciplinary relationships was important to their roles but 71% of them thought this was difficult. Moreover, 59% of respondents also thought that creating relationships with researchers in other geographies was important but 76% of them found this challenging. Additionally, it was revealed that identifying emerging research

interests among researchers in one's own institutions is an area that can be difficult to keep up with (Jamali, Nicholas, & Herman, 2015).

Structural changes to the scholarly environment are taking place as a result of the introduction of Web 2.0 technologies, which have given rise to Open Science 2.0 initiatives, such as open access publishing, open data, citizen science, and open peer evaluation systems. In turn, this is leading to new ways of building, showcasing, and measuring scholarly reputation through emerging platforms, such as ResearchGate (Jamali, Nicholas, & Herman, 2015).

It has been observed that traditional research-related activities, including conducting and collaborating in research, taking part in multidisciplinary projects, and publishing in journals contribute most to scholarly reputation. The greatest weaknesses of reputational platforms were a lack of trustworthiness and being open to gaming. The large majority of researchers, despite some reservations, thought that reputational systems were here to stay and will become increasingly important in the future, and especially for younger researchers (Jamali, Nicholas, & Herman, 2015). Undeniably, research collaborations are primary sources of innovative opportunities aside from the fact that these types of partnership contributes to an enhanced framework between academia and the industry (e.g., McKelvey, Zaring, & Ljungberg, 2015). Indeed, a changed landscape has emerging, one which offers academics new ways of working in research and new kinds of academic output for them to use in their teaching. Therefore, to make it easier for the researchers to find collaborators and to internationalise their research outputs can significantly bolster their research productivity. Lastly, as pointed out in a recent work (Pearce, N., Weller, M., Scanlon, E., & Kinsley, 2012), there is an argument to be made that the sort of changes we have seen in other industries will be forced upon higher education, either as the result of external economic factors (the need to be more efficient, responsive, etc.) or by a need to stay relevant to the so-called "net generation" of students (Prensky, 2001; Oblinger & Oblinger, 2005; Tapscott & Williams, 2010).

Aims: The present study aims to shed light on the current trends on research collaboration and academic networking during the digital stage. Specifically, this paper has looked into the framework of popular academic networking services such as Academia.edu, Mendeley, Piirus and ResearchGate. Additionally, Twitter, albeit not primarily an academic networking service has been taken into account due to its networking features which is also becoming increasingly popular for academics and students. Discussion centres on the benefits of these services to both seasoned and early career researchers (ECRs).

Popular Academic Networking Services

Academia.edu

It can be argued that Academia is the most popular academic networking service. The service has been characterised to reflect a hybrid of scholarly norms (the faculty advantage) and a female advantage that is suggestive of general social networking norms. Additionally, traditional bibliometric measures did not correlate with any Academia.edu metrics for philosophers, perhaps because more senior academics use the site less extensively or because of the range informal scholarly activities that cannot be measured by bibliometric methods. It has also be noted that traditional bibliometric measures did not correlate with any Academia.edu metrics for philosophers, perhaps because more senior academics use the site less extensively or because of the range informal scholarly activities that cannot be measured by bibliometric methods. (Thelwall & Kousha, 2014).

Mendeley: Mendeley is a free, web-based tool for organising research citations and annotating their accompanying PDF articles. Adapting Web 2.0 principles for academic scholarship, Mendeley integrates the management of the research articles with features for collaborating with researchers locally and worldwide. In this article the features of Mendeley are discussed and critiqued in comparison to other, similar tools. These features include citation management, online synchronisation and collaboration, PDF management and annotation, and integration with word processing software (Zaugg, West, Tateishi, & Randall, 2011).

Mendeley is a primarily a citation management product, along with Zotero, and CiteU-Like. However it can also be characterised as a social networking platform because it also presents social media features whereby it allows users to find and follow each other.

In a recent study (Jeng, He, & Jiang, 2015), it has been observed that (a) Mendeley users did not engage with social-based features as frequently and actively as they engaged with research-based features, and (b) users who joined more groups seemed to have a stronger motivation to increase their professional visibility and to contribute the research articles that they had read to the group reading list. These observations generate interesting insights into Mendeley's user populations, their activities, and their motivations relative to the social features of Mendeley.

Piirus: Piirus is an academic networking site designed to help researchers seek potential research collaborators. It is a sister service to jobs.ac.uk. It was founded by Fiona Colligan and was officially launched on August 2011 as "Research Match", a service designed for researchers within the University of Warwick.

It offers services which are similar to Academia.edu and ResearchGate. Since 2011, researchers from over 700 institutions across the globe have actively connected with each other and membership is estimated to grow to more than 10,000 researchers by the end of 2015. While Academia, LinkedIn and researchers' own departmental pages showcase research and publications, Piirus supports researchers right at the earliest stages of the research process, when they are forming new ideas and seeking colleagues to share, expand and describe the research challenge with them. Due to its functionality, Piirus is often described as a "dating site" for researchers (Anderson & Relojo, 2016).

ResearchGate: ResearchGate is a social network site for academics to create their own profiles, list their publications, and interact with each other. Like Academia.edu, it provides a new way for scholars to disseminate their work and hence potentially changes the dynamics of informal scholarly communication. Although Researchgate.net claims to be used internationally, its uptake, as of 2011, is uneven, with Brazil having particularly many users and China having few compared to the number of publishing researchers (Thelwall & Kousha, 2015). ResearchGate does not require peer review or fees. Since accessing documents usually requires an account, ResearchGate is not considered to be open access. Its "open review" functionality, which allows for reviewing published work, is little used: in a study, only 4 out of 3407 users had used this function.

ResearchGate utilises a crawler to find PDF versions of articles on the homepages of authors and publishers. These are then presented as if they had been uploaded to the web site by the author: the PDF will be displayed embedded in a frame, only the button "external download" indicates that the file was in fact not uploaded to ResearchGate. It is not documented which robots.txt directive would prevent the ResearchGate bot from doing this.

Twitter: Twitter, the microblogging tool, has seen unprecedented growth in the past year and is expected to continue into the future. Its power, engagement and popularity lie in its endless

networking opportunities and development needs to be explored, discussed, and ultimately used as such (Gerstein, 2011).

Although not primarily an academic networking service, Twitter has been a platform for digital academic to foster networking and research collaboration. Activities such as Twitter chats have been popular among academics, with hashtags like #ecrchat, #phdchat and #highered becoming visible within the scholarly realm.

Additionally, it is interesting to note that there are observed difference of using Twitter between academics and undergraduates which can be attributed to a number of factors, such as perceived use of the platform for enhancing reputation is an implied acknowledgement of the importance of research within HE and the increasingly public engagement agenda (Knight & Kaye, 2014).

Review of Related Studies: One study (Kelly & Delasalle, 2012) provides evidence which suggests that personal use of such services can increase the number of downloads by increasing SEO (search engine optimisation) rankings through inbound links from highly ranked websites.

Piirus have conducted a series of surveys which generated insightful results. In one of its surveys (Colligan, 2015) regarding building an international profile as a researcher, it was revealed that academics internationalise their research without going abroad is to create and use international connections (14%). The other ways to achieve internationalisation of research which accounted for 17% include: social media, publications and attending conferences.

Internationalising research brings challenges and the top five reasons to be identified were: identifying collaborators and maintaining connections (15%), funding (13%), time constraints (6%), language (5%) and travel.

Furthermore, it was revealed on this survey that majority of the academic create connections with researchers from other disciplines primarily through conferences (21%), use of social media 16% - this was further broken down to ResearchGate: 45%, LinkedIn: 21% and Twitter: 13% - through email (10%) and generally using the Internet (7%).

Clearly, the importance of collaborations across geographical, institutional and/or disciplinary boundaries has been widely recognised in research communities, yet there exist a range of obstacles to such collaborations. This study is concerned with understanding the potential of ASNS as a medium or platform for cross-disciplinary or multi-disciplinary collaborations. Many ASNS sites allow scholars to form online groups as well as to build up their professional network individually. In this study, we look at the patterns of user participation in online groups in an ASNS site, Mendeley, with an emphasis on assessing the degree to which people from different disciplinary backgrounds gather in these groups. The results show that while there exists a need for better means to facilitate group formation and growth, the groups in Mendeley exhibit a great deal of diversity in their member composition in terms of disciplines. Overall, the findings of this study support the argument that online social networking, especially ASNS, may foster multi-disciplinary collaborations by providing a platform for researchers from diverse backgrounds to find one another and cooperate on issues of common interests (Oh & Jeng, 2011).

Implications: With the presence of these ASNS, scholars are often asking which among these platforms they should use most often. Colligan (2015) has addressed this issue explaining that the answer is connecting to what researchers are trying to achieve (See Table 1).

Similar questions have also been raised such as *'What's the difference between ResearchGate, Academia.edu, and the institutional repository?'* or *'I put my papers in ResearchGate, is that*

enough for the open access policy?’ These and similar questions have been common at open access events over the past couple of years. Authors want to better understand the differences between these platforms and when they should use one, the other, or some combination (Office of Scholarly Communication, University of California, n.d. para. 1)

Aside from such concerns, authenticity could also be a potential issue among users of these services. For instance, one study (Jeng, He & Jiang, 2015) suggests that the participants do not engage with social networking features as frequently and actively as with research-based activities. In other words, users of Mendeley seem to mainly concentrate on the utilities directly related to their research work, while mostly ignoring its social features, such as “friend making”

Table 1. Comparisons of Social Networking Sites in Relation to Academic Functionality

	Academia.edu	Google Scholar	LinkedIn	Mendeley	ORCID	ResearcherID	ResearchGate	Piirus
Core purpose	Share research papers	Find research paper and track	Manage your professional identity and build your	Manage references and showcase	Unique identifier to connect researcher	Manage and share professional	Make research visible and make	Make connections and find research
Source of information	Commercial	Commercial	Commercial	Commercial	Institution	Commercial	Commercial	HE sector
Memberships	Graduate	Authors	Anyone	Students	Students	Invited	Students,	Research
Interdisciplinary	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Free access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Profile visibility	Public	Public	Public or members only	Public or private	Public or private	Public	Public or private	Public or private

Note. Retrieved from Piirus Blog. Copyright 2015 by Piirus. Reprinted with permission.

Conclusion: In light of the features of ASNS outlined on Table 1, and as explained by Colligan (2015), the core purpose of each academic networking service varies from one another. These differences in offerings to academics provides the opportunity to decide where to be visible, and for what purpose. In an ideal world of course, one service would be able to address all of these networking and collaboration needs, but a service with such a broad reach would take an invariably long time to be launched, and could potentially overwhelm its users about its purpose and is likely not be as effective in serving a specialist tool.

However, once a sufficient understanding of the roles of these academic networking services has been achieved, the digital academic could point out which site they would decide to actively engage into.

These ASNS are still on their early stages to fully gauge their impact on how these have facilitated collaborative partnerships among researchers, particularly to ECRs and those seeking interdisciplinary collaborations. Just like any other websites, these platforms could potentially encounter financial issues in the future, which may result to discontinuation of their services. But for the meantime, the research community cannot deny the fact that these services are becoming increasingly popular in scholarly communication. In academia, researchers could take advantage of these networking platforms, to build meaningful and lasting collaborative partnerships.

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