

Academic Social Networking Sites: A Comparative Analysis of Their Services and Tools

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Abstract

In the last decade there has been an emergence of Academic Social Networking Sites (ASNSs). Each site offers its own combination of tools and capabilities to support research activities, communication, collaboration, and networking. Given their variety, it might be challenging for academics to evaluate and use them. We conducted an exploratory inductive comparative study of the services and tools of a select set of ASNSs. We argue that maintaining multiple profiles might be time-consuming and propose starting a discussion about how we can make this process less cumbersome. We expect that our findings will help academics and researchers make informed decisions about their choice of ASNS.

Keywords: Academic Social Network Sites, Social Media, Academics, Faculty Development, Professional Development, Academic Career, Higher Education, Academic Impact

Citation: Espinoza Vasquez, F.K., Caicedo Bastidas, C.E. (2015). Academic Social Networking Sites: A Comparative Analysis of Their Services and Tools. In *iConference 2015 Proceedings*.

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1 Introduction and Problem Statement

Peer-reviewed conferences and journals have traditionally been the focus of researchers' efforts to make their research visible. However, as social media becomes more prevalent, the way academics disseminate their research is changing (Ovadia, 2013; Veletsianos, 2013). Academics are increasingly using social media, and are expected to have a professional online presence (Gruzd, Staves, & Wilk, 2011; Gruzd, Staves, & Wilk, 2012; Markgren, 2011). Moreover, it is expected that social media presence will be increasingly recognized as part of the tenure and promotion review processes (Gruzd et al., 2011). Citation counts will no longer be sufficient to estimate research impact, and the social importance of authors will become increasingly significant (Jabeur, Tamine, & Boughanem, 2010). Thus, researchers are regarding social media as a new way to be more visible and to have their research discovered by peers (Kelly & Delasalle, 2012).

In the last decade there has been an emergence of Academic Social Networking Sites (ASNS) (Bullinger, Hallerstedde, Renken, Soeldner, & Möslein, 2010, Ellison, 2007). Each site offers its own combination of tools and capabilities to support research activities, communication, collaboration, and networking. Given their variety, it might be challenging for academics to evaluate and use them. This paper is a response to that challenge; we explore the services and tools of a select set of ASNS, look at how they compare to each other, identify their commonalities and differences, in order to help researchers make informed decision and study the characteristics and trends related to ASNS.

2 Literature Review

The literature discusses different ways an ASNS can support scholarly work. We have identified five broad services¹ these sites provide: (1) collaboration, (2) online persona management, (3) research dissemination, (4) documents management, and (5) impact measurement.

Methods to evaluate research impact as well as interactions between researchers and the broader community are changing thanks to the emergence of tools, social behaviors, and cultural expectations associated with social media (Veletsianos, 2013). Bullinger et al., (2010) report a considerable increase in temporary scientific collaboration amongst scientists across departments, institutions, disciplines, and countries in the last two decades. Veletsianos & Kimmons (2013) argue that research is becoming "networked" and "participatory". Other researchers argue that ASNSs are somehow "replicating the experience of socializing at a conference," and in some cases even enhancing it, as they help create and augment researchers' professional networks (Curry, Kiddle, & Simmonds, 2009; Kelly, 2013; Nentwich, 2010), thus increasing collaboration chances (Codina, 2009; Darling, Shiffman, Côté, & Drew, 2013).

¹ We define services as the provision of an information-based benefit through a social media platform.

As managing online personae becomes more essential for researchers ASNSs are helping them with this task (Barbour & Marshall, 2012). What's more, researchers are increasingly showcasing their expertise and achievements through multiple online profiles (Bukvova, 2011; Stewart, 2008). ASNSs facilitate the diffusion of researchers' work (Bullinger et al., 2010). The ability of finding relevant communities of scientists and the ability to disseminate findings to a broader audience contribute to researchers' enrollment in these sites (Kalb, Pirkkalainen, Pawlowski, & Schoop, 2011; Kelly & Delasalle, 2012). Veletsianos (2013) suggests that social media sites can be viewed as places where scholars can congregate to share their work, ideas, and experiences. Kelly (2013) adds that ASNSs maximize their awareness of research output, thus increasing chances of document downloads (Kelly & Delasalle, 2012). Netwch (2010) calls ASNSs "tools for scientific marketing".

An additional service ASNSs provide is to manage the large amount of information, references, literature and documents researchers compile. They serve as information management systems (Bullinger, 2010).

In addition, ASNSs can provide measures of academic impact. While scholarly publishing has traditionally been evaluated in terms of citation counts and the quality of the journal in which a paper was published (Goodyear et al., 2009), varied technology-informed metrics (altmetrics) have recently been proposed in an attempt to more fully capture the influence of scholarly work (Veletsianos & Kimmons, 2013; Wildgaard, 2014; Piwowar & Priem, 2013). What's more, altmetrics are increasingly being used by young researchers and are becoming accepted as measuring tools for research impact (Ovadia, 2013; Kelly & Delasalle, 2012). Moreover, they suggest that as academics are interacting in new public arenas, beyond the "ivory tower", (Darling et al., 2013; Wildgaard, 2014), analyzing a researcher's social impact would complete their impact profile (Jabeur et al., 2010). To support the aforementioned services, ASNS provide a wide variety of tools (Table 2). In this paper we compare services and tools² provided by some of the most popular ASNS.

3 Methods

We conducted an exploratory inductive comparative study of ASNSs. We used a priori purposive sampling, which allowed us to identify, differentiate, and compare features between the sites (Pickard, 2007). Selection criteria was drawn from the literature review and was based on the following ASNS characteristics: (1) high popularity, (2) provides collaboration services, (3) provides online persona management, (4) supports research dissemination, (5) provides document management capabilities and (6) provides impact measurement services. The ASNSs selected complied with at least three of the criteria. Data analysis consisted of a comparison of their services and tools (See table 2). We generated a descriptive matrix of the ASNSs (Merriam, 2007).

ASNSs\Criteria	Popularity (More than 1M Users)	Collaborati on	Online Persona Management	Research Dissemination	Document Management	Impact Measurement
	✓	✓	✓	✓		✓
			✓	✓		✓
	✓	✓	✓	✓		✓
	✓	✓	✓	✓	✓	
	✓		✓	✓		

Table 1. ASNSs' selection criteria

² We define tools as an electronic feature within an ASNS that has a specific function.

4 Findings

All sites offer collaboration tools including: discussion boards, emails, and a public network of contacts of followers. However Mendeley is the only site that provides advanced group collaboration tools like, a shared library, and collaborative document processing. The site least focused on collaboration is ImpactStory.

All sites provide default online profiles that include a bio and list of publications. With the exception of ImpactStory, they all show user's interests, network of contacts and followers. Though LinkedIn has more users, Academia.edu, Mendeley and ResearchGate are more scholarly focused. LinkedIn, Academia.edu and ResearchGate pair users with job announcements. Moreover ResearchGate and LinkedIn show researcher's skills, which can be endorsed by other users.

Tools Provided by ASNSs
Discussion Boards
File Repository
Email
Instant Messaging
Citation Count
Altmetrics
Public/semi-public profile
Group collaboration
Reference Management
Collaborative document processing
Network visibility
Upload publications
Linking of information to social media sites

Table 2. Common tools provided by ASNSs

With regards to research dissemination, Academia.edu, ResearchGate and Mendeley, provide more tools for researchers to find communities and expose findings to a broader audience. They allow uploading publication files, follow and being followed by peers. What's more, Academia.edu and ResearchGate allow linking users' non-academic social media accounts like Twitter, and Facebook.

Out of all the sites analyzed, Mendeley is the only site that facilitates uploading and managing a library of documents, it allows importing libraries and references from other services. It also offers a reference and citation management desktop app.

When it comes to measuring impact, out of all the sites, ResearchGate and ImpactStory have more tools. ResearchGate's "RG Score" is a point system that combines publications downloads, citations, participation in discussion board and number of views. ImpactStory provides citation counts, and an overview of researchers' impact in non-academic social media outlets.

ASNS	Academia.edu	ResearchGate	Mendeley	LinkedIn	ImpactStory
Discussion Boards	0	√	√	√	0
File Repository	0	0	√	0	0
Email/Message	√	√	√	√	0
Citation Count	0	√	0	0	√
Alt Metrics	√	√	0	0	√
Public Profile	√	√	√	√	√
Group Space	0	0	√	0	0
Reference Management	0	0	√	0	0
Collaborative Document Processing	0	0	√	0	0
Network Visibility	√	√	√	√	0
Upload Publications	√	√	√	√	√
Link to Social Media Sites.	√	√	√	√	√

Table 3. Comparison of tools across ASNSs

5 Conclusions

Though the ASNSs we analyzed provide most of the services we evaluated (collaboration, online persona management, research dissemination, documents management, and impact measurement service), they tend to specialize in one or two.

While all of them allow keeping an online persona, LinkedIn focuses outside of academia. All sites provide communication tools, but Mendeley provides the most collaboration tools. All ASNSs provide the ability to upload researchers' publications, make their networks visible to other users, and allow linking to non-academic social media like Twitter or Facebook. While all sites calculate profile or document views, ResearchGate provides academically focused metrics. ImpactStory on the other side, measures mentions on Twitter.

Given that researchers usually have several profiles, it can become cumbersome and time-consuming to manage all of them. We'd recommend researchers to strategically select the ASNS that meets his/her goals, and hope that our work helps with that task.

We think future research could explore ways to facilitate managing multiple profiles across ASNS and the actual impact their services have on employment, dissemination of results, and collaboration.

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