ABSTRACT (as submitted):

The increase in online provision of library and information studies has reduced the amount of incidental student interaction particularly for mature-age students new to this area of study. The use of online social networking such as LinkedIn, Twitter, and Instagram has fostered a strong and supportive community for any GLAM professionals who choose to interact in this way. As noted by Downes (2006), the learning of knowledge is distributive, that is not located in any one place, not transferred or transacted, but consisting of the network of connections formed from experience and interactions with a knowing community (Downes, 2006). The hypothesis tested in this paper is that professionals who choose to interact and share knowledge in this way experience a richer professional development than those who rely on workplace or professional Associations for their lifelong learning. This paper explores the possibilities for mature-age students coming to the GLAM sector as a second or third career. It examines the need for a professional online identity and the benefits of interacting in this way to optimize lifelong learning, professional development, and particularly for library and information professionals working in small and remote libraries.

In their 2012 paper, Rajagopal, Joosten-ten Brinke, Van Bruggen, and Sloep, recognised that little is known about how professionals *intentionally* manage connections in their personal networks and about which factors influence their decisions in connecting with others for the purpose of learning. (Rajagopal et al, 2012). Through a series of case studies, this paper examines the role of peer influence in forming initial connections, and the role of regular interaction in these social networks for mutually beneficial professional learning and growth. Geographic boundaries will be examined and the importance of face-to-face interaction will be explored among different age groups.

The emergent nature of this area, particularly the influence of these social yet professional interactions on the workplace and its practices is only recently beginning to be explored in the extant literature. As noted by Cook and Pachler (2012), the literature on the use of social and mobile technologies in workplace practices is still small, however anecdotal evidence shows that GLAM professionals rely on this access for daily professional interactions, encouragement, inspiration, ideas, and support. This paper seeks to spark discussion, raise awareness and contribute to the growing body of knowledge on the use of social networking for professional learning, the formation and fostering of PLNs and the future of the profession.

INTRODUCTION

A dear friend once complimented me by saying I was a Time Lord. In that capacity, let me take you back more than 20 years. In 1993, Paul Keating was the Prime Minister of Australia, the first person-to-person SMS was sent in Finland, petrol was 61 cents a Litre, A Country Practice was axed, Niall from One Direction was born and assignments were either hand-written or printed on a dot-matrix printer. I was enrolled in the first year of my undergraduate degree at Melbourne University, in Urban Design. The campus was buzzing, all of the time. As a student there were opportunities to meet people in lectures, tutorials, the Union building, the pubs and cafes, clubs, sports facilities, tram stops, libraries, just to name a few.

Now jump ahead to 2010. I had recently enrolled in an online Masters course in Information Studies, delivered via Moodle. Anyone who has experienced both face-to-face and online education will notice stark differences between the delivery of the course and the nature of the community you are part of. More stark again are the differences if there are no opportunities whatsoever for face-to-face learning or interaction with others in the course, such as mine. In fact the first time we met one another was at our graduation, and then only the people who were alphabetically proximate!

Much has been written in the extant literature about online learning, tools for online learning, and even the use of social media to aid learning. This paper however examines the use of Twitter by mature-age students who choose to establish and maintain support networks and communities when enrolled in online study, due to a psychological need for support (Baeten, Dochy and Struyven, 2013). This is examined by case study and by considering the existing literature. Three case studies were conducted to test the theory, with the intention of this leading to future research on a wider scale. One case study pulled out in August so is not included in this paper.

CASE STUDY A

Case study A joined Twitter in 2006 at a conference in Perth following a paper by Kathryn Greenhill, Constance Wiebrands and Peta Hopkins on personal learning networks. She reports that the back channel made the conference come alive for her. As a mother and a professional librarian, A has embraced Twitter, along with other social media, as a way of engaging with like-minded professionals.

CASE STUDY B

Case study B commenced her Masters in Information Studies at the age of 37, as an at-home-Mum. She did not previously work in the industry, had a small and limited network, but had always wanted to be a Librarian. Her first interaction with both Twitter and with library professionals was at NLS5 in Perth. She remembers feeling left out as so many social events were arranged via Twitter and people seemed to know oneanother although they had not met. She watched as people Tweeted conference sessions and commented freely on professional issues on the back channel. She wanted in on this social media! Before the Symposium was over, she had a Twitter handle, and had followed the people she met, the speakers she enjoyed, and the Twitterati whom ‘everyone’ followed. Additionally, by doing this, she had acquired a mentor.

Some History

As early as 1982 researchers recognised that a community can be defined based on what we do with others rather than where we live (Haythornthwaite, 2002: 159). By the 1990s, computer-supported learning programs were being employed to support individuals who were distance learning. A concern raised at the time was that these students could not fully participate in campus life and may feel alienated (Haythornthwiate, 2002: 161). It was found at the time that when individuals consider themselves to belong to a community, researchers can examine what types of interactions they engage in to see what defines the community. To a limited extent, the case studies will allow some insight into these communities or personal learning networks. Although information exchange is key to learning environments, personal learning environments, professional development and so on, social support between users was recognised by some important in managing stress and promoting a sense of social unity, or a "we" feeling, in the 1990s (van der Poel, 1993: 2).

#MatureAgeStudents

According to the literature, a mature-age student is any student over the age of 21. Already this highlights a deficiency. When our student (either case study A or case study B) could be the mother of that 21 year-old, an obvious gap presents itself. As noted by Carmichael and Farrell (2012) educators cannot assume that all students have the same level of tech-savvy, nor can they have the same needs. This generational difference between (let's call them) Mother and Daughter, can be visualised by us all I think. Another way of looking at this generational gap in learning is this: My Mum has no need for a Smart Phone. My daughter hacks my Smart Phone regularly. I'm somewhere in between.

Rendon (1998) in Stone, Hewitt and Morelli (2013) notes the importance to mature-age students of validation. It is widely accepted that students have a psychological need for support, and are motivated to achieve and learn. Baeten, Dochy and Struyven (2013) found that prior knowledge proved to be an important variable in learning and achievement, however for Case Study B and many like her, her chosen area of study was new, and part of an intent to re-skill to re-enter the workforce after an extended period at home with children. Anyone who has experienced re-entering the workforce after any extended leave will understand the importance of encouragement and support to success.

The early research literature (1999-2004) in this area indicates that student-centred learning environments enhance students' motivation. Since then however online learning has exploded, and the rapid growth in mobile technologies offer users unprecedented opportunities for sharing, communicating, collaborating, and accessing research and news affecting the profession in real time. Australian research by Stone and O'Shea (2012) cited in Stone et al (2013) confirmed the need for positive connections with a wide network to ensure the success of mature-age students. Another factor cited was the use of free and easily-accessible support. Connecting in a meaningful way is recognised as an ongoing challenge yet it is acknowledged that it helps avoid feelings of isolation, irrespective of geographical boundaries (Mulatiningsih, Partridge and Davis, 2013: 10).

Cook and Pachler (2012) examine the use of social media via mobile devices for the purpose of work-based learning. Twitter was launched as recently as 2006. Five years later, social networking apps including Facebook and Twitter were attributed with a 37% increase in the use of mobile devices to access social media. Understanding the reasoning behind why people use it however is not so easily measured. The literature reports that mature-age students use Social Media, including Twitter, for: learning; social contact; entertainment; and workplace needs (Kukulska-Hulme et al 2011). This does not

differentiate between those engaged in online and face-to-face learning however. The experiences of students in these vastly different environments are surely worth exploring.

The literature is generally in agreement that Twitter in particular is used to form connections with communities of knowledge (COK), More Knowledgeable Others (MKO), Personal Learning Networks (PLN), Professional Learning Environments (PLE), Virtual Learning Environments (VLE), Communities of Practice (CoP), all with similar elements, but each different. This paper is not concerned with the label or the acronym, just the practical use of the technology, the motivation to use it and the payoff to continue using it. The Library community tend to utilise the acronym #PLN most frequently, so this will be referred to in this paper.

For the purposes of clarity, the following definition of PLN will be assumed:

> *"A PLN is a network set up by an individual specifically in the context of her professional activities through online platforms to support her professional non-formal learning needs." (Rajagopal et al, 2012).*

#Managing the #PLN

Rajagopal et al (2012) contend that little is known about *intentional* management of personal networks, and which factors influence decisions in connecting with others. They argue that that when making connections with other professionals, the key is to be able to identify and to understand the work of others in relation to one's own work. Assessing the value of the connection allows the user to assess the connection for use in the future, or for now. The credibility of the connection – who follows them, who do they follow? Is also added to this by Jessen and Jorgensen (2012). These are conscious decisions that are made by professionals, and both Case Studies verified that these linear steps were followed when following new people or organisations. Not all thought processes and choices in Social Media are linear however. Not all are rational, and not all have the same motivation.

Case study B reports using her Twitter-based PLN for support, encouragement, assistance with assignments, networking, employment opportunities, information access, and socialising, among other uses. Interestingly these are all ways campus-based students interact. However on Twitter, nobody is in charge, all contributions are accepted equally, and users can interact in their own time when convenient to them. This last point is a strength of online study – for the mature-age student with family and work commitments, lectures and tutorials and access to the library can be scheduled in to suit (Attwell, 2007; Smeaton and Davis, 2014). These decentralised, dynamic and democratic networks emphasise the value of sharing, supporting and collaborating with members of the profession (Downes, 2006).

Case study A recognises Twitter as a tool, and intends to use this tool as long as it is useful. She utilises Twitter as a filter, valuing the professional opinions of her PLN she no longer reads blogs, unless directed to specific posts by her network. The successful use of Twitter has also allowed Case study A to cut back on the use of other social media, instead diverting her energy into those which have the most professional value. As found by Mulatiningsih, Partridge and Davis (2013), Case study A continually refines her network over time, and uses her PLN as her main channel for professional development (Mulatiningsih, 2013: 3, 10).

#PLN to #Friendship?

As with social networks that form organically on campus, despite what is reported in the bulk of the literature, friendships can emerge and can flourish on Twitter. These friendships play a valuable role in the supportive community of peers one needs to continue with and succeed at study (Stone et al, 2013). Tweet-ups allow face-to-face meetings, for those in the same city, or for those travelling. Of particular interest here from the Case Studies is a small group of librarians who interact on Twitter.

Some members of this small group of six have met face-to-face at conferences, however some were introduced through a common contact, our Case study B. These six librarians are at different stages of their career, and are employed by different categories of library. Special, Public and Academic libraries are represented, as well as a student. They are all geographically dispersed with one in Canberra (ACT), one in Melbourne (Vic), one in New South Wales, one in Queensland, one in Adelaide (SA), and one in Wellington (NZ). Apart from their library careers, they also have music in common. Twitter allows them to support one another, share and collaborate in music, using Soundcloud to upload their finished covers of songs. Friendships within the group have flourished, and all have supported one another in work, personal life, study, and musical growth. No one person convenes the group, all members are equal, and all can interact as much or as little as they choose.

This sub-group within Twitter was realised initially through personal interaction within the professional community. Twitter provides a common tool for conversing that all participants use regularly. Strong ties between users resulted in the formation of this support group, recognising areas of interest outside of the Library profession. Given the geographical spread of the members of this group, social media allowed the group to form, allows the members to interact, and strengthens the ties between them, as reported by Eysenbach (2013). Anderson (2014) also contends that online communities are created for and by practitioners when meeting face-to-face is not possible. Experience tells us this is not always the case. Many's the time online communities have sprung up at conferences and act as a modern version of the in-class note-passing of school days. Anderson identifies several factors that link likeminded professionals. These include: shared interest in an area; drawing on experiences; interaction and to record lessons learned. It should of course be noted that these are seen across all professions, not just librarianship.

In the example of the Case Study, these likeminded professionals have developed a new way of interacting and recording, one which motivates each to improve and one which allows them friendships within the profession which they may not have previously had access to.

Case study A believes that the shared love of music and the willingness to take risks and share failures and successes binds this musical group, and highlights the authenticity in the connections that can be made on Twitter. She also reports that for her the group and others like it show trust in the PLN. Case study B credits this group specifically with supporting her emotionally through the final stages of her Master's degree. Not having a peer group of students in her online course, the messages of encouragement and support, links to relevant research, 'virtual' introductions to other Library professionals, and of course musical tributes, all assisted her in finishing her degree and graduating. Indeed photos of her graduation were posted to Twitter as in the past they would have been uploaded to Facebook friends, to share the moment in real time with her support network.

This connection goes beyond the relationships identified by Borgatti, Everett and Johnson (2013): friendships and advice-giving communication or a simple acquaintanceship as seen in large networks (such as the majority of Twitter followers) who follow a path best described as 'six degrees of separation' (after Milgram, 1967). This connection has implications for online studies and should be explored.

#Mentors within the #PLN

Whilst Cook and Pachler (2012) argue that social networking augments pre-existing social relationships, both case studies report that Twitter has been able to create and foster strong ties and strong relationships. This indicates that there is considerable potential to use Twitter in informal, professional, work-based learning (Cook and Pachler, 2012). Indeed this is argued by Rajagopal et al (2012), who found that networks change and evolve with the *intentional* actions of professionals. This intentional action is measurable with Twitter, with users choosing to consciously comment on, engage with, follow, unfollow, retweet, and favourite content, allowing the user to remain in touch with the network. These active measures optimise the learning environment of Twitter, and create rich layers within the PLN, each serving its purpose (Rajagopal et al, 2012; Loureiro-Koechlin and Butcher, 2013).

The intentional action was confirmed by Stone, Hewitt and Morelli (2013: np), who found that: "peer-mentoring programs and specific study groups delivered via social networking tools do … have the potential to engage students both academically and socially." Further, they concluded that effective use of social media can play a highly significant role in supporting online students and in making them feel part of a learning community. Willemse (2013) found that professional librarians use Twitter to form supportive relationships with other professionals that contain elements of mentoring. The case studies support these findings.

These learning communities have been found to have a strong collaborative component within Twitter. Mulatiningsih, Partridge and Davis (2013) found that Twitter provides an opportunity to learn from collaborative networks. Interacting and conversing within these collaborative networks has been found to support peer mentoring alongside the PLN (Willemse, 2013). Although Twitter is a public sphere, it is only one of several online tools used for mentoring, with Skype, email and direct messaging also mentioned. Willemse argues that in the context of social media, a redefinition of mentoring is required. Many researchers note that Twitter is used by many Librarians, however no research was found that looks at why amongst the information profession, Twitter use is so prevalent.

The size of these online communities however should be mentioned. At any one time there are millions of users logged in to Twitter. In order to get the most from these communities of practice, one must be able to read and be read by, followers who share your content. While early research argued that the more 'others' with whom an individual maintains supportive ties, the more positive the association with measures of happiness, mental health and well-being (Haythornthwaite, 2002: 172), more recently researchers have recognised quantity and quality are very different. Borrowed from the science of anthropology is 'Dunbar's Number': the maximum number of strong ties any individual can maintain. This number is approximately 150 (Loureiro-Koechlin and Butcher, 2013). The case studies both follow far more than 150 users on Twitter, however through the use of hashtags and lists, they both interact personally with much more manageable numbers, not unlike 'Dunbar's Number'.

#Meaningful?

Communities and extended communities have been shown in the literature to provide social support (Attwell and Torres, 2010). Although joining a community often entails phases: a stage of observation, joining in, maintaining one's presence, and disengaging (Eysenbach, 2013; Loureiro-Koechlin and Butcher, 2013), the musical sub-group identified in the case studies illustrates that theory cannot always describe the behaviour of group members. As described by Loureiro-Koechlin and Butcher (2013), successful online communities such as

these rely on sociability, functionality and usability, all of which are facilitated by Twitter, and all of which are accessible to mature-age, online students.

CONCLUSION

Back in 1993 where this paper began, Rheingold questioned whether public discussions could be carried on long enough and with sufficient human feeling to form recognisable webs of personal relationships in cyberspace. I hope that he is on Twitter now. Baym (1998) acknowledged the role of online communities, however questioned whether they served as a substitute for offline community in any meaningful way (Baym, 1998: 294). Online communities in 1998 bore very little in common with those we see today, so perhaps Baym can be forgiven for these views. The pace of change surrounding online interactions makes researching this area challenging, but not impossible. Awareness of human needs and wants and their impact on success will not change however the way that we use available technology to meet those needs will inevitably need to be upgraded.

There is a need for further research into the role social media can and does play for mature-age students, new to a professional area of practice. Gaps in the extant literature regarding what constitutes a mature-age student, why people access social media as students, how communities are formed and how they benefit the profession require further investigation.

For the case studies, Twitter was accessed to gain an insight into the profession, to feel part of a community, to learn, to engage and to be supported. Over time these networks have been refined to align with their areas of interest. Twitter networks have been described as a series of smaller groups of professionals, each chosen to support various areas of professional practice as well as friends and colleagues who encourage eachother and even sing to eachother when needed.