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An MBA cohort's use of an enterprise social network for collaborative learning

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ABSTRACT

The rapid pace of social media means that our understanding of the way in which it facilitates the learning process continues to lag. The findings of a longitudinal study of an executive MBA cohort over a period of eight months in their use of the social media application Yammer is presented. Student interaction data was analysed using a form of thematic analysis termed genre analysis (Westman & Freund, 2010) to categorize the various interactions observed. The major data source used to inform this study was a textual analysis of the Yammer user traffic of an executive MBA cohort. Consistent with user behaviour outside of a university context students tended to adapt Yammer to suit their own needs, utilising the tool in a variety of diverse ways over an extended period to support their learning and cohort interactions. Over time the ownership and use of the Yammer site shifted to become student driven and facilitated. The motivations behind the site's use, perceived advantages and disadvantages and changes in usage patterns are documented. The case provides a useful insight into the way in which students used this technology to facilitate their learning goals and how patterns of behaviour changed over time in response to the changing needs of the cohort.

Keywords: Connectivism; social media; MBA; Yammer.

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Introduction

Outcomes attributed to the use of social media have been both wide-ranging and significant with purported effects ranging from societal upheaval and revolution (Bruns, Highfield & Burgess, 2013) to concerns around changing interaction patterns between youth (Rainie & Wellman, 2012). Unsurprisingly, its effect and potential impact has also been noted in educational settings. However, the rapid pace of technological development has naturally led to the adoption and use of social media far in advance of our conceptual and empirical knowledge as to how this technology might contribute to student learning (Brown, 2012). Empirical investigations remain in an emergent phase, with many researchers still coming to grips with what social media actually is, what it is not, and its potential role in an educational context (Hrastinski & Dennen, 2012).

Indeed, one could make the strong argument that we remain without a clear understanding of how these technology types are actually used by students in a higher education context (Benson, Morgan & Tennakoon, 2012; Davis, Deil-Amen, Rios-Aguilar & Canche, 2014). For example, existing studies tend to examine social media use in highly structured scenario's such as assessment (Backer, 2010) group work (Pinto, 2014) or some other mandated use particular to a specific class or unit of study. While a useful starting point, such situations struggle to faithfully capture the way in which students might use social media in the context of their self-directed learning activities. Added to this is the strong emphasis on undergraduate cohorts using "lifestyle" social media tools such as Facebook, with even less attention paid to post-graduate students (Masterman & Shuyska, 2012), a cohort with potentially significant differences in demographic profile, usage patterns and attitudes towards the use of social media in a professional development context. A review of the current literature confirms much of what was observed previously by Hew (2011) with a continued paucity of longitudinal studies examining post-graduate students use of social media. As such this study makes a contribution to the literature by presenting the findings of an eight month study of an Executive MBA cohort's use of the social media application, Yammer.

Social Media in an Educational Context

Some have considered the role of social media technologies (or simply the "social" phenomena) in a higher education context using theories such as social constructivism or variants such as social connectivism (Bell, 2011; Boitshwarelo, 2011). Social constructivism suggests learners engage in processes and activities allowing them to build knowledge based upon their existing knowledge, rather than being a passive recipient in the learning process (Wang, 2011). Further, proponents of constructivism contend that this optimized learning occurs when opportunities for learning are provided through social interaction, observation of others or as a result of dialogue relating to specific problems or topics of focus (Chen & Bryer, 2012). As such, collaboration is seen as an essential element in the generation of meaningful and individualized knowledge (Caballe & Xhafe, 2010).

In the context of social constructivism then the attraction of a technology type such as social media to students and educators becomes obvious. The emphasis of social media on connectivity and the sharing of experiences, knowledge and personal identity lends itself well to the theoretical constructs underpinning the theory (Rambe & Nel, 2014). Thompson (2011) provides evidence of this, highlighting an emerging, increasing preference amongst students for a complex interconnected network of information sources constructed by the learner and reflecting a "*mix of individual and collective, close and distant, formal and informal learning spaces*" (p194). Utilized in

the appropriate manner social media tools potentially provide educators with a suite of dynamic tools allowing students to interact, generate ideas, share content and engage in learning activities that suit their particular learning style, personal situation, lifestyle demands and even geographical location (Guy, 2012).

Unsurprisingly, especially given its market leading status and rapid uptake by the 18-34 year age group, much of the discussion in relation to the use of social media in higher education has focused on the use of FaceBook (e.g. Leitch & Warren, 2011; Munoz, 2010; Tuten & Marks, 2012). Regarded as the most popular and most successful social media application to date, Facebook (FB) was released in 2004 and boasts over 1.3 billion active users at time of publication. The use of FB by educators in exercises such as the handling of student enquiries, as a broadcast tool, and even as an assessment mechanism have all been documented (Foroughi, 2011). Overall however, the findings relating to the utility of FB in supporting teaching and learning in higher education are mixed (Deng & Tavares, 2013; Manca & Raniera, 2013).

Student Use of Social Media: There have been several recent attempts to investigate why undergraduate students might use FB. For example, Cheung et al. (2011) investigated the motivation to use FB by students, however the study looked at generalized everyday use rather than the use of FB for scholastic endeavors. However, they did identify the presence of a strong network effect on the intention to use FB. In short, the more their colleagues were using it, the more likely they were to be. A more focused study by Vivian et al., (2014) tracked the use of FB by 70 students over a 22 week period. Their results confirmed that students were using FB for scholastically related exchanges, with interactions occurring predominantly around content and discussion of "grades" but also identified its use as a procrastination tool. Sanchez et al. (2014) reported similar findings with a survey identifying motivations for FB use including communication, collaboration and material sharing. Their study also observed the presence of negative attitudes towards instructor initiated FB use. Finally, Deng & Tavares (2013) compared the level of interaction and engagement by the same cohort in two different spaces – FB and the formal LMS environment of MOODLE. They observed a student willingness to engage in their "self-organizing communities" via FB, which contrasted with their limited interaction via Moodle. In a very specific instance Amador & Amador's (2014) participants reported positive experiences using FB as a tool for question and answer interactions between student advisors and six students.

However, there are only a limited number of detailed studies documenting how students fully utilize other social media applications in the context of their learning activities, especially outside the classroom environment and/or over a significant period of time. For example, Luo & Gao (2012) examined the use of micro-blogging via a Twitteresque tool (Twiducate) in a structured set of classroom activities. While a useful exercise, the highly structured and directive nature of the activity and the tool failed to capture faithfully the types of behavior typically associated with social media use in the broader context of student life. Vorvoreanu, Bowen & Laux (2012) used Yammer in a large undergraduate course for the last three weeks of a semester but noted a decrease in positive attitudes to the course. This was attributed to the late introduction of Yammer into the course that artificially disrupted established patterns of interaction. However, it is also considered possible that the short timeframe prevented the development and embedding of any new Yammer facilitated interaction patterns. Finally, while Taylor, King & Nelson (2012) found student's perceptions of the use of social media in a teaching and learning context to be positive, they were unable to demonstrate how students actually utilized the technology in facilitating any learning outcomes.

Student Outcomes: In terms of examining the use of FB in relation to student outcomes the research is again nascent and perhaps because of this, also inconclusive

at this point. An early study by Backer (2010) reported an overall positive response from students required to undertake an innovative piece of assessment using Facebook on their smart-phones. In her study students reported increased perceptions of independent learning and felt responsibility as a result of participating in the exercise. In contrast however, a study by Kirschner & Karpinski (2010) around the same time indicated that those students self-reporting higher levels of general FB use (not specific to study) also reported lower Grade Point Averages (GPAs) than those with lower FB use. In their study of students attitudes towards FB Irwin et al., (2012) found mixed results with 51% of students surveyed at the end of a course stating it was an effective learning tool, with 76% recommending its use in future courses. The author's overall assessment was that social media's *potential* was again confirmed, but there was a continued lack of understanding as to how it might be used effectively. On a similarly positive note Callaghan & Bower (2012) found that students did have the ability to transfer their "social media" skills into an educational context, but highlighted the critical, perhaps evolving role of the teacher as facilitator in social media contexts, and the need to actively promote a learning (rather than a social) orientation within a social media environment.

In addition to the above, two recent comprehensive reviews of social media in higher education confirm a lack of knowledge in this area. Hew's (2011) work identified that empirical work has largely focused on student's usage profiles, attitudes towards FB, or the effects of FB on teacher credibility and academic performance. He also identified a limitation of the current body of work was its neglect of the post-graduate cohort, and that studies of a longitudinal nature were also rare. More recently Manca & Raniera (2013) asserted that the educational value of FB has not yet been fully determined. Their review of 23 relevant studies found evidence of student reluctance to use FB as a learning tool, however they did confirm its utility in community building and the facilitation of social relationships in a higher education context. They concluded that educators should not assume that students will always automatically welcome the use of a social media into their learning environment. Further, they suggested greater attention should be paid towards the construction, investigation and implementation of different roles that align with the use of social technologies in a higher education setting.

Social Media Type and Post-Graduate Students

As social media applications have matured, certain applications can be seen to be better suited to particular tasks than others (Murphy & Salomone, 2013). Boateng, Malik & Mbarika (2009) offer a typology indicating that social media applications can achieve one or more functional outcomes including the i) communication of information (*Communicative*), ii) generation of knowledge (*Generative*), iii) provide a vehicle for collaborative publishing, iv) act as a content management space, or v) an interactive hub that allows individuals to share and exchange thoughts, information and ideas. Therefore while it might be useful to talk in general terms about the impact of social media in higher education and student outcomes such as increased engagement and improved learning outcomes, in order to effectively determine the utility of this software type it is important to acknowledge the technology artifact and its inherent functionality (Orlikowski & Iacono, 2001).

This lack of distinction between social media tools is compounded by the fact that very few studies actually examine the way in which students use social media in the

context of their entire student life. As discussed, some have adopted a narrow focus on a specified activity such as an assessment piece or in the context of student enquiries, while others have focused their attentions on a specific application (typically Facebook or Twitter). By their nature these applications are potentially narrow in their scope as defined by Boateng et al. (2009) being typically limited to communicative and/or interactive functionality. In simple terms then, for educators to achieve their intended learning outcomes they must be able to effectively discriminate between various social media applications, understanding their functionality and the ideal contexts in which they might be employed. Therefore choosing the correct social media tool for the desired pedagogical outcome and educational context is important.

In addition to the elements canvased above there are a number of issues directly related to the use of FaceBook in higher education and in particular, in a post-graduate context. Perhaps unsurprisingly, some of those issues are less to do with technical limitations and more to do with public perceptions of FB. The revelations in 2014 that FB had engaged in an "experiment" with a sample of their users without any ethical oversight exemplifies its tense relationship with users (Kramar et al. 2014). Facebook's willingness to push the boundaries in their use of user data has resulted in a degree of mistrust and misgiving's around the applications porosity, security and transparency which has implications for its use in a higher education context.

Other more complex issues arise when attempting to apply Facebook (and to a lesser extent other "lifestyle" social media tools such as Twitter, Instagram and Pintrest) in an educational setting. In particular the debate around having to be a "signed-up" member of FB to engage in any FB study group is an important ethical and equity issue to consider (Hew, 2011). There is evidence to suggest that younger and more social media savvy users perceive the use of FB and other explicitly social or lifestyle applications in an educational context as intrusive, with a perception that joining a Facebook study group forces the blurring of a student's (separate) social life and student life (Madge et al., 2009; Sanchez et al., 2014). Conversely, older or less social media savvy students are perhaps unwilling due to a lack of confidence and understanding of the social media phenomenon. Further, post-graduate and professional students may harbor concerns about the use of a tool that is frequently associated with on-line scandal and indiscretions, fearing that use of the tool may potentially compromise their professional reputation or standing (Willems & Bateman, 2011). Consequently it can be seen that while social tools possessing the functionality native to Facebook do present some benefits to educators, there are a number of salient issues that might prevent the use of FaceBook, particularly in the context of professional or post-graduate education. Instead, it is useful to identify tools with similar functionality, but with a reduced level of integration into students social and lifestyle networks. For example, Riemer, Scifleet & Reddig (2012) document the use of an enterprise specific social media tool in the context of professional services firms, a cohort of users that are likely to have similar demographics to business post-graduate students.

In summary, while the potential for social media to facilitate the aims and objectives of constructivism exists, we continue to have little understanding of how students actually use and incorporate these applications in a higher education context. A review of the literature presents two areas benefiting from a greater focus. One, while

there is a significant amount of discussion as to the *potential* use of social media in a tertiary environment, we have an under-developed knowledge base as to how (in particular) post-graduate students actually utilize and incorporate this technology type into their capacity as students, particularly in an "unstructured", natural use context (Guy, 2012; Masterman & Shuyska, 2012).

Compounding this is the second problem, whereby consistent with Orlikowski & Iacono's (2001) observations researchers to date have had the unfortunate tendency to treat social media as a single entity, with little attention paid to the broad design variations within this particular class of software application and the resulting different usage patterns and learning outcomes (Wodziki, Schwammlein & Moskaliuk, 2012). This is especially true in the case of post-graduate students, a cohort with quite distinct demographic characteristics as compared to undergraduates. Consequently in order to effectively use this technology type in ways that are acceptable for learners and educators a deeper understanding of both the technology in question and the way in which students interpret, use and ultimately benefit from social media in its varied forms is required. Therefore the aim of the study was to examine the everyday usage by post-graduate students of a tool that had the functionality and flexibility of Facebook, but few of the negative connotations associated with it.

Research Aims

Much like McCorkle & McCorkle (2012) this study emerged out of a practical classroom application, with the intent of the author to provide a flexible way in which to communicate and disseminate material to a cohort of Executive MBA students. Yammer was viewed by the Unit Coordinator as an effective way to communicate responses to student queries (by email) that might have also been useful to the rest of the cohort. Rather than use a social network site such as Facebook, the use of Yammer was thought to have the potential to overcome some of the security, privacy and general use concerns posed by Facebook, particularly in the context of executive and professional people reflected in the cohort demographics (Willems & Bateman, 2011).

Yammer is an example of an Enterprise social network, a "Freemium" application specifically designed for organisations. Purchased by Microsoft in 2011 Yammer provides a Facebook style interaction space for companies wishing to establish an internal social network (Riemer et al., 2012). Yammer's functionality allowed the Unit Coordinator with an efficient tool to forward material designed to "push" to those in the cohort that were looking for material to extend their thinking, provide additional examples of theoretical applications or content that followed up on discussions and queries that had emerged in previous lectures or workshops. These included links to appropriate articles of an academic nature, professional publications or contemporary news sites and /or blogs as well as video material. The tool also allowed the Unit Coordinator to post images of theoretical models or diagrams, quick opinion "polls" around a topic area and post calendar reminders of assessment due dates and the like. The tool was used in parallel with the conventional LMS that was mandated by the University to house all of the typical standard resources such as lecture slides, assessment details and set readings. Over time it became apparent to the Unit Coordinator that the way in which the students interpreted and used the site was changing and evolving over time and as such represented an opportunity to longitudinally investigate the use of a social media application by students in a learning and development context. In essence, prior to undertaking a more comprehensive review of the Yammer interactions the research questions posed were:

1. *What were the specific ways in which MBA students utilized a social network (Yammer) in the context of their university experience?*

2. *Were there any distinct changes in MBA student's use of Yammer over the life of the cohort?*

Method

The major data source used to inform this study was a textual analysis of the Yammer site user traffic. The Yammer interaction data was interrogated to determine the primary uses of the site by the cohort and to examine any trends in usage patterns. The Yammer data was analyzed by replicating a process used by Riemer, Scifleet & Reddig (2012) in their study of Yammer in a professional services firm, which utilized a form of thematic analysis termed genre analysis (Westman & Freund, 2010) to categorize the various interactions observed. Yammer interaction data was interrogated to determine the primary uses of the site by the cohort and to examine any trends in usage patterns. The unit of analysis reported relates to initial postings by users, as a review of the comments in response to initial posting were all consistent with the original post. In this approach "genres" are conceptualized as communication patterns that develop over time and are reflective of a particular type of social activity. Consistent with Riemer et al. (2012) each posting was classified according to its collective purpose, as to how the cohort community would have perceived the intent and purpose of the posting. For example, postings might relate to unit assessment, unit content, social activity, "professional" or aspects of university life. Each initial posting was used as an individual data point and clustered into like categories and progressively reviewed to examine whether those clusters could be more narrowly defined while still remaining a conceptually different "intent and purpose" that the collection of postings would reflect. A number of descriptive metrics were also captured including: total number of interactions; interactions per month; interactions per category; and interactions per category per month.

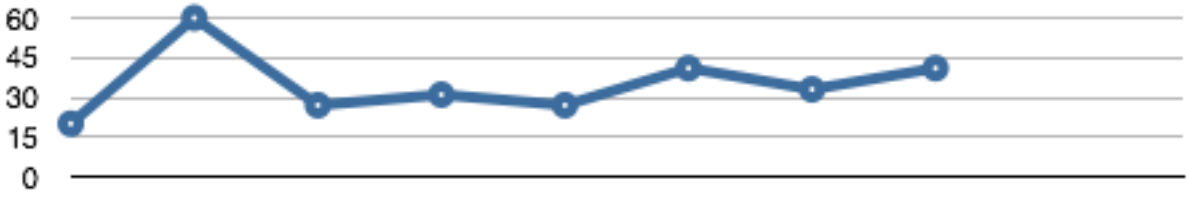
Participants

The participants were enrolled in an Executive Masters of Business Administration (EMBA) program at a large Australian University. The students were a cohort in the classic sense in that over an 18 month period they moved through a set program of units and complete the program together. This study examined the first eight months of their enrolment. Thirty-one students originally made up the cohort with five females, twenty-six males and median age of thirty-seven. The group was professionally diverse with a number of managing directors, financial managers, project managers, senior information technology and engineering professionals as well as experienced sales and marketing managers. At the time the data collection began the cohort had just entered the program and were not known to each other prior to taking the course. While all participants described themselves as having a high to moderate level of computer literacy, none had experience using Yammer prior to joining the course.

Results

In the eight months that were analyzed 320 individual *postings* and a total of 1265 *comments* submitted in response to those postings (mean=3.85 responses per posting) were identified. Of those postings 57 (17.8%) were facilitator postings. Figure 1.0 below indicates that after an initial spike in postings (n=60 per month) in the second month of operation, posting frequency dropped (n= 27 per month) but steadily trended upward from that point as the cohort progressed through their degree (mean = 33.33 per month).

Figure 1.
Cohort Yammer postings per month



Further analysis of the Yammer data identified seven distinct genres that adequately captured the various ways in which the cohort utilized the Yammer site. The unit of analysis reported relates to initial postings by users, as a review of the comments in response to initial posting were all consistent with the original post. The seven main genre's were i) assessment related interactions ii) course content related interactions, iii) general MBA activity, iv) social activity, v) "Work Product" sharing, vi) content & material sharing, and vii) "crowd sourcing" queries.

Assessment related interactions (24%): These interactions were identified as those that specifically related to the course assessment set for the students. Postings in this genre typically related to clarifications around assessment requirements, requests for assessment specific resources (case readings, marking rubrics etc.), and in some instances requests for help. A frequent type of posting concerned the release of results, when they were due and if "*anyone else has had their results back yet?*". This genre accounted for 24% of the total number of postings over the period. An example of a typical exchange is tabled below in Figure 2.0. Interesting to note (discussed in more detail later) is that the query is put to the group, not to the subject facilitator and the following (albeit light-hearted) discussion, appears to come to some form of group consensus as to what is expected from the assessment.

Figure 2.
Assessment genre related posting and discussion

General MBA activity (23%): This genre collectively represented those postings that related to the student's involvement in the EMBA community and aspects of university life that were not directly related to any specific subject they were enrolled in at the time. Examples of postings included in this genre were discussions around "master-class seminars", general administrative matters, EMBA related travel plans, study group announcements and comments relating to the demands and pressures of the EMBA lifestyle. This genre was the second most frequently posted interaction over the time period (23%) and one of the categories that continued to trend upward over the life of the cohort. A slightly humorous example of this genre's postings is presented below in Figure 3 as members of the cohort use Yammer to share feelings as to the pressures faced by the cohort.

Figure 3
Example "General MBA Activity" posting and discussion

Content & material sharing (18%): This genre emerged to reflect the trend within the site for cohort members to share content that was associated with the content and topics they were studying, but not directly related to their required readings or lecture material. Often the material that was shared reflected an attempt to foster an extension of learning, such as posting an interesting article or blog post that had been found during their research, an alternate model, news items or content that put the theory they were learning into a contemporary business situation or an alternate context.

Social activity (16%): Another genre that reported a relatively high frequency were those postings of a social nature. These postings related to activities that involved the cohort but were not related to any scholastic or administrative aspect of their MBA degree. This involved postings such as those notifying the group of social dinner and drinks, humorous cohort related postings and invitations to support or join charitable initiatives that cohort members were involved in. This was another of the genres that reported a general upward trend in frequency over the life of the study (this is discussed in more detail below).

Course content related interactions (12%): Postings consistent with this genre were directly related to course content such as posting queries about required readings, questions as to class activities, workshop exercises and the like. This genre only represented only twelve percent of the total postings which is perhaps reflective of a mature and well maintained university LMS that provides students with all the required subject resources.

"Work Product" sharing (5%): Another smaller, but distinct genre to emerge from an analysis of the postings related to instances where students would post examples of work in progress, or drafts of assessment for their peers to review and make comment on. Examples of work in progress typically were posted in the form of photographs of white-board workings with drafts whereas assignment drafts were shared as PDF files/

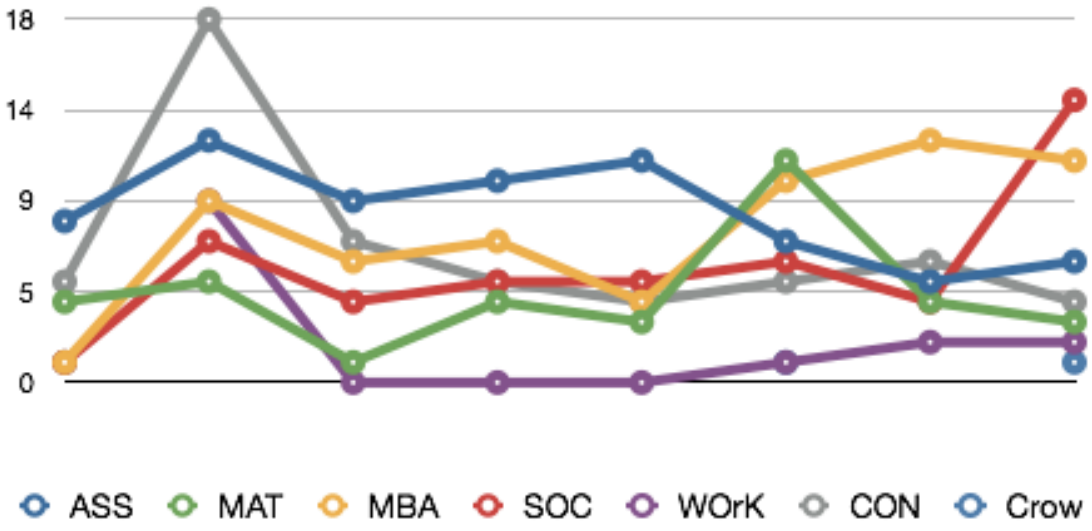
"Crowd sourcing" queries (2%): A small but distinct proportion of queries (2%) related to what are typically described as "crowd sourcing" interactions (Brabham, 2008) where students used Yammer to source information, advice or access to resources with an aim to furthering their own private business interests or professional / job related demands outside of the MBA. An example is provided below in Figure 4.

Figure 4.
Example crowdsourcing query

User Behavior – Lifecycle

While the genre analysis provides a useful insight into the type of uses the cohort used Yammer for it is also useful to consider how the use of Yammer may have changed over time. In the first instance each genre was mapped out per month according to posting frequency, this is represented in Figure 5 below.

Figure 5.
Yammer postings by Genre per month



Postings relating to *Assessment* (ASS) steadily decreased over the period consistent with the idea that the cohort became more proficient and confident in their studies and matured in their approach to undertaking assessment pieces independently. Postings relating to *MBA life* (MBA) increase towards the middle of the year, and along with *Social* (SOC) account for a high proportion of traffic towards the end of the data collection period. A possible explanation for this increase can be explained by the cohort's increasing embeddedness in the course, an increase in MBA related activity organized by the university (professional gatherings, seminars, professional development activities) and a shift in focus away from course content and assessment to other aspects of MBA and university life. The *Material sharing* (MAT) genre on the whole can be seen to decrease over the data collection period with a spike in July, attributed to the cohort having five subjects running concurrently in comparison to the typical three or four. The genres associated with *Work sharing* (WOrK) *Course content* (CON) and *Social* (SOC) all followed similar patterns of posting frequency over the year with moderate to low postings throughout the period. The spike in posting for *Social* in November reflects a shift within the cohort to discussing end-of-year celebrations and gatherings of a social nature at the conclusion of the academic year. Those that stand out in the changing nature of frequency are the *MBA life* and *Social* (SOC) genres. These two increased on average in frequency with the remaining genres (all those typically associated with scholastic type activities) all identified as steadily decreasing over the data collection period.

What the Yammer posting frequency data on its own fails to highlight is the shifting nature of ownership that occurred, particularly in the early phase of the site's use. In a very short period of time the instructor began to "lose" ownership of the site as the cohort increasingly directed and controlled the flow of information within the site. In summary, a time-based analysis of the cohort's overall pattern of Yammer interactions indicated five key phases over the period investigated (see Figure 6.0 below).

Phase 1 (Weeks 1-2) - Broadcast communication and extension of learning: As alluded to already, the origins of the Yammer site were aligned with the Unit Coordinator wishing to utilize an efficient manner in which to answer queries and to quickly build cohort awareness. In the first week of the site the majority of posts were either from the instructor or queries directed to the instructor. Posts were concerned

with clarifying assessment requirements, the provision of additional content or examples of material that had been covered in class previously. As to be expected in this initial phase it was the instructor responding and answering to posts with little or no additional interaction from the cohort.

Phase 2 (Weeks 2 onward) - Cohort Interaction & response: As the previous data has shown (see Fig. 2.0) content and assessment based queries continued with moderate frequency for the eight month data collection period. However, a change that was identified as early as the second week of use were the responses of cohort members to queries posted to the instructor. In the majority of cases the cohort were responding in a more timely manner than the instructor was able to and importantly, with an appropriate and correct answer. In many instances all the instructor was required to do was to confirm the information as correct or in some rare instances provide a clarification or refinement of the cohort response. It was this initial pro-active behavior by cohort members that offered an indication that the use of Yammer may offer students more in the way of a learning experience above and beyond the simple broadcasting of content.

Phase 3 (weeks 3 onward) - Cohort self direction: A number of postings were observed in the third week that were considered especially significant in the evolving nature of how Yammer was being used by the cohort. The first was that while the Yammer site had been specifically set up for the auspices of their "Strategic Management" subject students began posting and discussing other subjects that they were also involved in. At this point it was apparent that any "control" or ownership held by the author as the Strategy Unit Coordinator was quickly eroding and that the cohort themselves were using the site in a manner that best suited their needs. The second significant aspect to emerge was that cohort members began to post drafts of their work up onto Yammer for public comment. This development was unexpected and considered to be a tangible example of the potential learning scenarios discussed in the context of constructivism and connectivism. As the frequency data reported above demonstrates, sharing of work content was not especially frequent over the life of the data collection but the fact that it actually occurred fairly early on, and continued to do so was considered important from a learning and pedagogical perspective.

Phase 4 (weeks 3-4) - Professional - social transition: By the end of the third week and into the fourth week a review of the postings indicated a full range of genres in evidence. While postings up until this point had been largely content and assessment related postings relating to social activities, MBA life and broader, more involved discussions were evident.

Phase 5 (week 12) - Site ownership & continuation: Approximately three months after the site was established a number of cohort members requested that the site be renamed from its original title of "EMBA Strategic Management" to a general EMBA cohort Yammer site. People were concerned that at the conclusion of their Strategic Management studies they would lose the use of the Yammer platform, and expressed a desire to continue the Yammer site as the central communication hub for the cohort through their degree. There were also calls for various other faculty members to be added to the site and encouraged to participate in its use. This was considered significant in that it indicated that for some users at least the space was considered valuable beyond its original context and origins. Another perhaps more important point is that at this juncture ownership clearly transitioned over to the cohort, despite staff members remaining as site administrators. This development (while welcomed) was unexpected as it had not been an intended aim of setting up the Yammer site in the first instance.

Discussion

The enterprise social network tool (Yammer) was introduced into the course as a fairly blunt instrument, as a way in which the Unit Coordinator could quickly and easily "push" content onto those students looking for additional examples and guidance with content and assessment. It was also seen as a way of maintaining contact and developing a relationship with a group that was only seen once every 4-6 weeks. A good example of an enterprise collaboration tool, Yammer allowed the posting of comments, additional content in a variety of formats (video, text, pictures, diagrams) run quizzes or polls and gain responses from students in a synchronous manner. For this purpose Yammer worked extremely well and allowed the sharing of queries and responses for individuals to the entire group - simultaneously reducing the number of queries and building the knowledge and capability of the cohort. However, it was the extent to which the group themselves actually "took ownership" of the Yammer site that was worthy of greater consideration and investigation. As students quickly became more confident with the use of the site they began posting drafts of assessment for comment by the group, would advise each other on queries (often responding quicker than the instructor was able) and posting content of interest and relevance to the unit content that they had found in the course of their research. Initial observations of this user behavior prompted the two research questions of i) *what were the specific ways in which students utilized the Yammer social network in the context of their university experience? and* ii) *were there distinct changes in student's use of Yammer over the life of the cohort?*

In terms of the first research question the data suggests the student's use of Yammer was varied and changed over the course of the first eight months they were together. Seven distinct uses of the site were identified, and while some social activity was to be expected it actually only represented 16% of total interactions. Instead, evidence was recorded of scholarly and academic activity across a number of areas including the sharing of additional (student sourced) material (24%), the peer-review of assessment drafts and knowledge sharing pertaining to course (EMBA activities) (5%). As such the study provides evidence of what de Laat (2011) describes as a distinct move by learners towards networked learning activities facilitated by information and communication technologies (ICTs) with the intent of collaborating and cooperating with other learners, instructors or other learning resources. This study, along with de Laat's (2011) work also reflects the growing recognition that learners can have a high degree of agency in the way in which they construct their social infrastructure to inform their day-to-day actions, as well as their professional standing and development (Sharma, et al., 2010). Evaluation feedback from students within the cohort tended to support these assertions.

> *"Yammer should be an essential part of any cohort type of learning. It acts as an arena of sharing ideas and learnings as well as being a social network which brings the cohort closer together as a group"*

> *"I found Yammer a great way of getting answers quickly from everyone. It helped make me feel supported and helped to get reassurance when I thought I might be off track. Loved the use of it for the posting of articles of interest etc as well."*

> *"Strong collaboration tool, brings the cohort closer together and provides a great forum for exchange of ideas, discussion topics"*

> "*I have found Yammer not just useful for sharing ideas with other cohort members during the unit, improving the formative assignments, but an going learning tool after the formal teaching has finished to explore our learnings against real-world cases as they come up."*

At the very core of constructivism are the principles of learning through experimentation and dialogue (Adams, 2006). Again the data provided here indicates that given the appropriate opportunity and mechanism students will engage in this process via social media. However, it also highlights the alternate role needing to be played by educators with social media applications in a learning context, clearly putting the instructor in a facilitating, rather than a directive role. An important learning for educators is that despite your intent as to how a particular technological artifact may be introduced (depending on the application) students will in all likelihood adapt the technology to suit themselves. That acknowledged, it also confirms that with careful scaffolding students can be guided and encouraged to explore the full range of functionality and use within a particular application (Luo & Gao (2012).

This study also demonstrates that student interaction and collaboration via a social media application can be sustained over an extended period of time, but the nature of that use may evolve or change depending on the needs of the group. It would have been reasonable to expect that after an initial flurry of activity use of Yammer would have dropped, especially once the unit that it was introduced into, was completed. In fact, this was also anticipated by one student as communicated in an unsolicited e-mail:

> *"I would have to say that I wasn't convinced of its benefit or usefulness at first but as time as gone on, the amount of and extent of "interactions" as increased to the point where I am now a convert. It is very reassuring to be able to put a comment or question out there and know that the cohort group will respond (and assist) promptly."*

In response to the second research question therefore two key elements were identified. One, that there were specific phases in the nature of the relationship between the use of the technology and the cohort. One notable observation was the speed by which the students adopted the site. As discussed, within two weeks of use students had transitioned from being passive consumers of material posted by the instructor to engaging, sharing and contributing to the material, the majority of which was scholastic in nature. It was also noted that the way in which it was used varied depending on the needs at any one particular time. The temporal and contextual nature of the tool's use was most evident towards the later part of the time period examined when postings increased significantly while discussing their impending study tour.

An interesting side note, but possibly one of the more valuable insights relates to the nature of the group's interaction patterns prior to using Yammer and its impact on the adoption of new social technologies. Originally it was the intent of the author to capture data from two separate cohorts in their use of Yammer - the "new" cohort reported here in this paper (COHORT A) and an "old" cohort that were some way through the completion of their degree (COHORT B). In short COHORT B had no use for the Yammer site set up for them, with almost no interaction on the site and what interaction there was, being of a social nature. Informal discussions with COHORT B members indicated that as the group had been together for some time they already had established preferred and embedded methods of communication between each

other. Cohort B's existing work-flows and communication processes meant that adopting Yammer at that point was perceived to be un-economical and offered little additional value. This mirrored the authors previous experiences attempting to establish Yammer sites with experienced researchers and academics for project co-ordination. In these instances e-mail was the preferred form of communication and the use of Yammer, despite its numerous advantages over e-mail, failed to be adopted in three separate instances. Both of these instances (albeit anecdotal) contrast heavily with the experience of COHORT A reported here in this paper, where the cohort enthusiastically adopted the technology for a variety of uses over a sustained period. It is possible that the complete lack of established relationships and interaction preferences within the "new" cohort allowed and facilitated the adoption of Yammer to the point od sustained interaction.

In the context of a social media application designed to promote interaction, collaboration and facilitation of communication this study has provided a number of insights for educators wishing to use a tool such as Yammer. The first is that consistent with user behavior outside of a university context users tend to adapt applications such as Yammer to suit their own needs, with clear indications that users will utilize the tool in a variety of diverse ways over an extended period. If guided correctly the study also suggests that such a platform provides a mechanism whereby users can genuinely collaborate, share work, provide peer feedback and collectively raise awareness as to their academic requirements and expectations, all in the one environment. In this instance the Unit Coordinator in the initial phase was active in promoting student work, encouraging sharing of material and supporting student involvement in the use of the tool. However, as was seen here, the role of the faculty member tends to transition towards a facilitating role, rather than a highly directive role. As the group matured the role of unit coordinator changed from one of providing information to one of clarification and timely stimulation of discussion, with the cohort becoming increasingly self-sustaining. As one student in an unsolicited email observed *"I have found Yammer not just useful for sharing ideas with other cohort members during the unit, improving the formative assignments, but an going learning tool after the formal teaching has finished to explore our learning's against real-world cases as they come up. The preparedness of the faculty to try new methods to facilitate learning gives me confidence that my learning is their goal, not just making it easy for themselves"*. It also highlights the utility of a social network tool such as Yammer in a context where students are not co-located , who may be geographically dispersed over large campuses or professionals traveling to class as in this case the use of a dedicated social network appears to drive a higher sense of cohesion in the group, particularly outside of class time. If coached correctly it also provides a mechanism whereby students can genuinely collaborate, sharing work, providing feedback and collectively raising awareness as to their academic requirements and expectations during periods of separation.

Conclusion & Implications

Despite the widespread adoption of social media applications by the general population we are yet to build up a substantial body of work investigating the way in which this diverse software class can, and is being used by post-graduate students in the practice of learning. This in part has been hampered by the tendency to treat "social media" as a singular entity, rather than adequately accounting for subtle, but distinct differences in application functionality, and the subsequent adoption patterns of users. The nature of this cohort was quite specific, working intensely face-to-face and then dispersing for 2-3 weeks at a time before meeting again. As such it is possible that the structural configuration of the cohorts interactions may have driven the patterns observed here. Future research would benefit from work directed

towards a) confirming whether the presence of existing interaction patterns (e.g. email, face-to-face) work to prevent the adoption of social media technologies for knowledge sharing, and b) determining the most appropriate methods to undertake to help users unlearn old approaches to collaboration and adopt new approaches (Dunlap & Lowenthal, 2011).

This second research effort is particularly relevant in an education setting where it is possible that groups of students are already familiar with one or two preferred methods of interaction (e.g. an existing LMS; email) despite emerging technologies offering significantly enhanced learning and interaction opportunities if adopted. Finally, the nature of the data reported here prevented a faithful analysis of the extent to which the Yammer activity contributed to student outcomes and enhanced their learning experience. Anecdotal accounts indicated that students felt that the Yammer application contributed significantly to the cohesion of the group and was a useful forum to share ideas and knowledge. One student observed, *"As cheesy as it sounds, I think it does help the cohort bond together as a cohesive group. We are all busy people, so it helps to have an open forum that doesn't (usually) sink into useless conversation. It is also useful as it allows people to float ideas and bounce different perspectives off each other".* While this sentiment is acknowledged, additional empirical data measuring the relationship between various Yammer interactions types and learning outcomes, and further, what facilitator led interventions within the Yammer environment might produce stronger learning outcomes would be a valuable and profitable research agenda to pursue.

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