

# **Mobile Social Media as a Catalyst for Collaborative Curriculum Redesign**

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## **ABSTRACT**

This chapter illustrates the potential of mobile social media to be used as a catalyst for collaborative curriculum redesign. We critique a case study implementing a mobile social media framework for creative pedagogies and draw out the implications of this framework for wider educational contexts. We conclude that an effective mobile social media framework for collaborative curriculum redesign must meet three goals: model the building of learning communities, explore the unique affordances of mobile social media to enable new pedagogies, and establish a supporting technology infrastructure.

## INTRODUCTION

Balsamo (2011) argues that higher education needs a “reboot” in order to engage with new pedagogies relevant to today’s learners and their prospective professions. Such a reboot requires curriculum redesign, and Laurillard et al., (2011) argue that curriculum design should be a collaborative process, and should be regarded as a valid design science (Laurillard, 2012). The challenge of innovation in curriculum design is enabling lecturers to think differently or creatively about pedagogy, content delivery, and assessment, this effectively involves a culture change or ontological shift (Chi & Hausmann, 2003) where the role of the teacher, the learner, and technology are reconceptualised. Hase and Kenyon (2007) note that “people only change in response to a very clear need. This usually involves distress such as confusion, dissonance, and fear or a more positive motive such as intense desire”. Thus some form of catalyst is required to bring about pedagogical change. We argue that mobile social media is such a catalyst (Kukulska-Hulme, 2010) that enables a pedagogical refocus from teacher-directed content delivery to student-generated content and student-generated learning contexts. This refocus can be viewed as part of a continuum of pedagogical change enabled by new and emerging technologies, and the emergence of mobile social media in particular. We illustrate this continuum in table 1.

Table 1: Post Web 2.0 Continuum

1995	2005	2013
• Web 1.0	• Web 2.0	• Mobile
• Teacher	• Student	• Collaboration
• LMS	• ePortfolio	• Connectivism
• Content delivery	• Student-generated Content	• Creativity
		• Student-generated Contexts

We call this pedagogical change timeline the post web 2.0 continuum to reflect the technological developments and their pedagogical affordances from the rise of the Internet, web 2.0, and the virtually ubiquitous uptake of mobile devices such as cellphones. This project was also informed by the researcher's six critical success factors for maximising the potential of mobile social media for higher education (Cochrane, 2014):

1. The pedagogical integration of the technology into the course and assessment.
2. Lecturer modelling of the pedagogical use of the tools.
3. Creating a supportive learning community.
4. Appropriate choice of mobile devices and Web 2.0 social software.
5. Technological and pedagogical support.
6. Creating sustained interaction that facilitates the development of ontological shifts, both for the lecturers and the students.

Smartphones and tablets are powerful computing devices with unique affordances that enable student learning in multiple contexts. These mobile devices facilitate rich- media recording of student activity in the form of images, video, audio, and geolocation data. With multiple built-in sensors and ubiquitous connectivity these mobile devices can be used to rethink collaboration and develop the potential for enhanced engagement and learning outcomes. Large-scale mobile learning research projects in the UK (Attewell, Savill-Smith, Douch, & Parker, 2010) and Europe (Unterfrauner & Marschalek, 2010) have demonstrated that mlearning empowers marginalized learners, and Australian research has shown mlearning is a catalyst for enabling authentic learning (Herrington, Herrington, Mantei, Olney, & Ferry, 2009).

However, while mobile learning (mlearning) is an established field of research (Pachler, Bachmair, & Cook, 2010; Parsons, 2013; Sharples, 2009) there are two

significant gaps in current knowledge. Firstly it is increasingly clear that ‘net-generation’ learners do not automatically apply the functionality of their devices to the attainment of deep learning outcomes (Kennedy, et al., 2007; Sheely, 2008; White & Le Cornu, 2011). More knowledge is required about how to achieve the shifts in conceptions of learning that are necessary for effective use of mobile devices.

Secondly there is a lack of studies on integration of findings from mlearning research into sustainable change in curriculum, policy and infrastructure (Traxler, 2010, 2011). The project aimed to address these gaps by implementing a framework for enhanced learning and institutional change across different disciplines and institutions. The project aims to generate a range of practical strategies for students, teachers and leaders to utilise the affordances of mobile devices for pedagogical transformation and empowering learners.

Thus we argue that the power of mobile learning is in the potential to change entrenched pedagogical cultures rather than focus upon developing mobile accessible content that does not necessarily result in pedagogical change (Cochrane, 2013). Based upon this we have developed a mobile social media framework that was implemented within the communications studies course at the researcher’s university (Table 2).

**Table 2.** A framework for using mobile social media to enable creative pedagogies (modified from (Luckin, et al., 2010))

	Pedagogy	Andragogy	Heutagogy
Activity Types	<ul style="list-style-type: none"> <li>• Content delivery</li> <li>• Digital assessment</li> <li>• Teacher delivered content</li> <li>• Teacher defined projects</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher as guide</li> <li>• Digital identity</li> <li>• Student-generated content</li> <li>• Student negotiated teams</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher as co-learner</li> <li>• Digital presence</li> <li>• Student-generated contexts</li> <li>• Student negotiated projects</li> </ul>
Locus of control	Teacher	Student	Student
Cognition	Cognitive	Meta-cognitive	Epistemic
SAMR	Substitution &	Modification	Redefinition

(Puentedura, 2006)	Augmentation <ul style="list-style-type: none"> <li>• Portfolio to eportfolio</li> <li>• PowerPoint on iPad</li> <li>• Focus on productivity</li> <li>• Mobile device as personal digital assistant and consumption tool</li> </ul>	<ul style="list-style-type: none"> <li>• Reflection as VODCast</li> <li>• Prezi on iPad</li> <li>• New forms of collaboration</li> <li>• Mobile device as content creation and curation tool</li> </ul>	<ul style="list-style-type: none"> <li>• In situ reflections</li> <li>• Presentations as dialogue with source material</li> <li>• Community building</li> <li>• Mobile device as collaborative tool</li> </ul>
Creativity (Sternberg, Kaufman & Pretz, 2002)	Reproduction	Incrementation	Reinitiation
Knowledge production	Subject understanding: lecturers introduce and model the use of a range of mobile social media tools appropriate to the learning context	Process negotiation: students negotiate a choice of mobile social media tools to establish an eportfolio based upon user-generated content	Context shaping: students create project teams that investigate and critique user-generated content within the context of their discipline. These are then shared, curated, and peer-reviewed in an authentic COP

This framework is focused upon cultivating creative pedagogies within the context of the curriculum. The framework is essentially a mashup of several interrelated learning frameworks. The frameworks include: the Pedaogogy-Andragogy-Heutagogy continuum (Luckin, et al., 2010), Puentedura's (2006) SAMR model (Substitution, Augmentation, Modification, Redefinition) of educational technology transformation. and Sternberg, Kaufman and Pretz's (2002) view of creativity involving incrementation (or modification of a current idea) followed by reinitiation (or redefinition). Aligning these frameworks with the unique affordances of mobile social media provides an overall framework for designing new course activities and assessments that leverage new pedagogies. The goal of this framework is to produce graduates "who can think creatively and become active participants of the community of practitioners associated with their chosen field of design" (Cochrane & Antonczak, 2013a, p. 1). This involves an ontological shift, reconceptualizing the role of mobile social media in education, and reconceptualizing the roles of the teachers and learners – moving away from a teacher-focused content

delivery mode towards a student-directed learning paradigm (heutagogy). In this process students move from passive receptors of knowledge to become active participants within authentic professional communities. Our framework resonates closely with a recent manifesto of teaching and learning for the modern age by Ihannainen and Gallagher (2013) as part of a call for vision papers for higher education by the European Commission:

We believe that the greatest learning we can provide is learning that empowers learners to make sense of their own interactions, to compile learning into collages or other assemblies of meaning, to consistently and confidently interact with their peers to negotiate meaning. We believe that the role of teachers is to facilitate trust and authenticity in learning, to help learners create metaphorical constructs to filter meaning, to become comfortable in the use and analysis of multimedia, and to become accustomed to consistent meaning-making. (p127)

Thus the project was driven by a reconception of pedagogy rather than technological determinism. Mobile social media provided the tools for this pedagogical reconception.

## METHODOLOGY

The project followed a three-stage approach, including: establishing a lecturer community of practice (COP), creating a supporting technology infrastructure, and collaborative redesign of curriculum processes, activities and assessments to focus upon the development of student-generated mobile social media eportfolios. A participatory action research methodology (Swartz, 2008) was used to inform the iterative development of the collaborative curriculum redesign. We worked closely with the institution's IT department to establish an appropriate wireless infrastructure to support the use of mobile devices as collaborative tools. This involved not only the provision of adequate wifi coverage but also the development of Mobile Airplay

Screens (MOAs) to enable small screen personal devices such as the iPad and iPhone to become collaborative tools by wirelessly mirroring the screen of these devices to a large (50 inch) moveable screen. These moveable screens could be used by small groups of students or lecturers anywhere on campus that the WiFi network extended to and a mains power connection was accessible. The MOAs were developed in semester 1 of 2013 before the implementation of the Communications studies project (Cochrane, Munn, & Antonczak, 2013).



Figure 1: Mobile Airplay Screen (MOAs)

The lecturer COP was supported by a weekly face-to-face meeting as well as the establishment of a range of mobile social media tools as the basis for the development of personal eportfolios (including: Wordpress blogs and Twitter), and collaboration (including: Google Docs, and a Google Plus Community). These tools also provided a record of the COP activity and were the primary source of data for analysis of the project progress and outcomes.

## **Research Questions**

We were primarily interested in investigating two questions through the project:

1. Could we establish a community of practice of lecturers within the department that would facilitate collaborative curriculum redesign?
2. How can mobile social media be used as a catalyst to introduce new pedagogies and assessment strategies into the curriculum?

## **CASE STUDY**

The communications studies lecturer COP was launched before the beginning of semester1 with the loaning of iPad minis to each of the participating lecturers, the loan of two MOAs to be shared across the four courses, and a workshop facilitated by the researcher overviewing the use of mobile augmented reality as a basis for student projects. Following this introduction, a weekly community of practice meeting was established at a local coffee shop where there was good coffee and free wifi access allowing the lecturers to connect and collaborate using their iPad minis. A Google Plus virtual community was established (<http://bit.ly/GA4kQW>) to support the face-to-face COP and curate the outcomes of the project, including linking to the participants' Twitter activity and Wordpress blogs. Figure 2 illustrates the range of mobile social media tools utilised in the project.



Figure 2: Mobile social media portfolio Apps

These tools were chosen as examples of a range of collaborative tools including:

1. [GMail](#) which provided access to the Google suite of collaborative tools
2. [Wordpress](#) as a reflective space
3. [Twitter](#) to facilitate an asynchronous community
4. [Google Plus](#) Hangouts for synchronous community building
5. [Feedly](#) for collating social media
6. [LinkedIn](#) as a professional portfolio
7. [ResearchGate](#) to create a research portfolio
8. [ScoopIt](#) for curating social media
9. <http://www.autodesk.com/mobile-apps> a suite of mobile 3D modelling Apps

The formation of a lecturer COP exploring mobile social media within the Communications Department focused upon the following outcomes:

- Innovation in teaching and learning enabled by technology, in particular a focus upon student-owned devices to enable the establishment of student eportfolios as a core platform for the Department.
- Exploring the development of collaborative student-generated augmented reality games in an international team-based context.
- The COP also explored the affordances of mobile social media technologies to act as a catalyst for pedagogical change and curriculum design as the Communications.
- The creation of a new eportfolio-based submission system to update or replace the antiquated sFTP system presently in use. The new system enables the use of mobile devices and web 2.0 technologies to enable:
  - Students to provide online feedback on work in progress/summative submissions.
  - Student forums for sharing research and resources.
  - Using social media as tool for documenting and reporting beyond the classroom.
  - Building publicly available portfolios alongside the submission process, to replace the physical end of year show and present an alternative “online exhibition” that invites stakeholders to comment on student work and directions for work before graduation, opening employment opportunities.
- New approaches to classroom interaction - for example the use of MOAs (MOBILE Airplay screens) for enhancing student collaboration via their mobile devices.
- New pedagogies that are appropriate to a 21st Century Post Web 2.0 communications education.

The contexts covered by the project within the School of Communications' Digital Media department and additional papers included: Creative Practice, 3D animation, Honours, Masters in Communication Studies, and Performance Communication. Each of these are outlined in the following sections. While the Communications courses in general utilized a high level of computing technologies the teaching approaches employed prior to the project were located at the Web 1.0 end of the Post Web 2.0 continuum. For example there was no integration of social media within the courses.

### **Creative Practice**

Creative practice is the core Digital Media paper in the Postgraduate Diploma in Communication studies. Two equally weighted assignments were redesigned in line with our research's intended outcomes. The first assignment involved student team development of a m-learning application. The course assessment requirements were redesigned from focusing upon the submission of a written Word report on the development process to the establishment of a team-based project eportfolio using mobile social media such as Google Plus Communities, Blogs and Google Drive. Students were able to use large screen displays or Mobile Airplay Screens (MOAs) in class to collaborate on their App development and preview their development directly from their mobile devices, rather than asking the lecturers permission to use the lectern to present over a class projector using emulation software as they had previously. As the students didn't need the use of the lectern they could take charge of their own learning within the classes as they worked through their assignment. Table 2 shows a comparison of an example of one previous assessment outline and the redesigned outline based upon our mobile social media framework.

Table 2. Assessment criteria for an educational mobile web app.

Previous assessment critieria	Redesigned assessment criteria
<ul style="list-style-type: none"> <li>• Your research on the topic you selected to be taught within a folder named “YOURINITIALS_Research”</li> <li>• A diagram of your mobile web app as a .pdf named “Diagram”</li> <li>• A Mockup of your mobile apps pages as .jpgs or .pdfs named “Wireframe”</li> <li>• Your completed mobile web app and all its components contained in a folder named “WebApp”</li> <li>• Your individual contribution as a .doc names “INITIALS_Contribution”</li> <li>• Your references as a .doc named “References”</li> <li>• Ensure all files are named correctly and contained within a folder labeled “TeamName_Brief4”. Due date for submission of material is the 30th August 2013 no later than 4pm.</li> </ul>	<ul style="list-style-type: none"> <li>• Your research and media for the project must be uploaded to your Wordpress blog and external media embedded or linked to your blog.</li> <li>• Make at least a weekly project progress summary blog post, and attach/embed supporting media to this post.</li> <li>• Use the hashtag #148302a3 to filter blog posts and media for this assignment.</li> <li>• Create a Google Plus Group for scheduling and recording your group meetings and activity.</li> <li>• Create a shared <a href="#">Mendeley</a> library of your references, using APA formatting, and link this to a blog post named "References"</li> <li>• Your final blog post will be a reflection on the project, including a summary of the team and your specific contribution to the team project - this can include a short 1 minute VODCast uploaded to either YouTube or Vimeo and embedded in your blog post.</li> <li>• Due date for the final submission is 30th August, 4pm.</li> </ul>

Table 3 shows a comparison of the change in curriculum activities and assessments, with the original assessment approach situated firmly within a teacher-directed pedagogy, while the redesigned assessment activities move towards student-directed heutagogy.

Table 3. Mobile social media in the Communications curriculum

	Pedagogy	Andragogy	Heutagogy
Activity Types	<ul style="list-style-type: none"> <li>• Teacher defined projects: course requirements, Project scope</li> <li>• Teacher delivered examples</li> <li>• Assignments</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher as guide</li> <li>• Digital identity: Wordpress journals</li> <li>• Student-generated content using</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher modelling use of mobile social media within collaborative curriculum redesign team</li> </ul>

<ul style="list-style-type: none"> <li>• descriptive</li> <li>• Assignment submission via Word reports and PowerPoint</li> </ul>	<ul style="list-style-type: none"> <li>• smartphones</li> <li>• Student negotiated teams in Google Plus Communities</li> </ul>	<ul style="list-style-type: none"> <li>• Student-generated contexts: Authentic mobile App design and development</li> </ul>
Creativity Reproduction	Incrementation	Reinitiation

Students were encouraged to establish their own Wordpress blogs as reflective journals for their semester 2 2013 course, to establish Google Plus Communities for their team-based projects, and share documents via Google Drive. Students then invited their lecturers as viewers and commentators on these sites. This represented a significant reconception of the role of social media for online learning, from a focus upon lecturer created forums on the institution's LMS (Learning Management System) to student-owned social media spaces that the lecturers were then invited into.

One student team extended the use of Wordpress beyond a reflective journal to capture and present all the research and decisions made throughout the assignment. They nominated a team member to capture all the information flowing through the various social media streams and class discussions, then edit and consolidate it into blog posts. The blog was made public so the rest of the team could review and amend posts. The result was a professionally presented, clear and concise report of all research and decisions conducted by the team that they used as part of their submission.

The use of a Google Plus Community (for example see Figure 3) was particularly important to one of the student teams where one of the team members participated remotely on the project updating their progress, sharing project resources with the rest of the team, and scheduling synchronous Google Plus Hangouts while on

holiday in Spain during the majority of the project. This team of 4 students generated 42 posts and 92 comments over the six weeks of the project.

A screenshot of a Google+ community post. The post is from user 'taro kan' (profile picture of a teddy bear) on August 27, 2013. The text reads: "about the reference list, how about everyone make a APA6th style list for personal reference and upload it to our drive, and i will put them together before Tuesday? and what else do we need to submit?" Below the post are two small profile pictures and a '+1' button. The post has been liked by Christopher Grimshaw-Jones and Victorio Burcio-Martin. A 'Hide comments' link is visible above the comments section. The first comment is from Christopher Grimshaw-Jones on August 27, 2013, asking if it's due Friday or next week. The second comment is from taro kan on August 27, 2013, replying that it's due this Friday before 4pm. The third comment is from Victorio Burcio-Martin on August 27, 2013, providing a document link and asking to read carefully. The fourth comment is from taro kan on August 27, 2013, agreeing and asking if Chris will collect the data. The fifth comment is from Christopher Grimshaw-Jones on August 29, 2013, stating he will get on to it after work.

**taro kan**  
Discussion - Aug 27, 2013

about the reference list, how about everyone make a APA6th style list for personal reference and upload it to our drive, and i will put them together before Tuesday? and what else do we need to submit?

+1

**Christopher Grimshaw-Jones**  
Aug 27, 2013  
Is it due Friday or next week?

**taro kan** Aug 27, 2013 +1  
this friday and before 4pm

**Victorio Burcio-Martin OWNER**  
Aug 27, 2013  
Hi, the document with the all the description of the submission list is Assignment\_brief\_3.pdf is in our share folder, please read carefully as there is list of  
Read more

**taro kan** Aug 27, 2013 +1  
yes thats right, Chris will be good to collecting these data. And could you please just upload them as a folder to our drive? And do you want to submit them to artsweb? Like, if  
Read more

**Christopher Grimshaw-Jones**  
Aug 29, 2013  
Ok I will get on to this after work. What is artsweb? Can I

Figure 3: Example G+ Community Post

Google drive's ability to be integrated tightly with Google Plus proved beneficial over other cloud based storage services in this project. As the teams were coding their app there were many assets that needed to be brought together, managed

correctly, and updated in consultation with the team. As files were changed they could be linked back into the Google Plus Community allowing for discussion of file changes and then flagging of issues early. In the case of errors created as a result of these changes beyond the expertise of the students a lecturer could be flagged in the discussion and have a record of previous changes that may have lead to the problem.

The Mobile airplay screens did not work as intended within the computer lab setting. The labs narrow paths between desks and the amount of chairs in the room made it very difficult to move the Mobile Airplay Screens. This often saw them become fixed features within the computer labs at the front of the class where there was adequate room, much like one would expect a class projector to work. As each lab is equipped with a projector a similar result could be achieved simply by connecting an Apple TV unit to the lectern. This defeated the mobile aspect of the device, which was disappointing in this particular scenario. The lack of physical flexibility of the room layout limited the deployment of the MOAs, which were better suited to flexible spaces enabling team collaboration.

The student interaction through the MOAs was weighted heavily towards those with Apple devices such as iPhones and iPads due to the hardware requirements for screen mirroring. The immaturity of Android hardware for collaborative screen-mirroring of mobile devices created a rift or divide in the class as those without Apple devices became passive observers or partnered with an iOS mobile device owning student.

### **3D Animation**

A Google Plus community was established to provide a forum for discussion and peer support for the semester 2 animation paper. This was the lecturer's first

experience of using social media as part of the course, and thus an initially conservative approach was taken to the accessibility of the Google Plus community.

This is a community for sharing ideas about projects, concepts and posting any questions you have about various topics that you have covered in class. Either myself or one of the main lecturers can help to answer any queries you may have. Feel free to help each other out and give your own opinions on topics that may arise either during class or within this community. This is a private community and will only consist of students in your class as well as myself and both main lecturers.

(Google Plus comment, 2013)

Figure 4 shows an extract from a typical post and comments on the 3D Animation Google Plus community.

**Shilo Zhang**  
Discussion - Sep 5, 2013

hey, I am rendering my robert, but it stops at 446 frame and cound't finish till 500 fram? don't know what's wrong =(

+1

**Jacob Nordlund** Sep 5, 2013  
I had a similar problem when rendering my images. You only have 300mb storage on "your account" which stops the rendering when that amount is reached. try saving the files on like the desktop instead.

**Clint Simeti** Sep 5, 2013  
I think Jacob has identified the problem. However, it's always best to render to the "Store" or video drives on the computer (they have the largest storage capacity and aren't connected to a network, they're the actual harddrive inside the computer).  
Show less

**Shilo Zhang** Sep 5, 2013  
Hey thank you, I just saw the comment and I am afraid I don't have enough time to make it. Is it okay if the movie is 16s?

**Clint Simeti** Sep 5, 2013  
It's not a major issue.

Figure 4: Google Plus Community screen shot.

Reflecting on the experience (<http://bit.ly/1eRX55M>) the lecturer noted that while there was significant buy in from the students and a lot of activity generated on the non-compulsory Google Plus Community, students defaulted to using the community to ask their lecturer questions in a virtual help-desk fashion. Although student peers often replied to each other's posts and comments, they were reticent to initiate peer to peer conversations on the community. Strategies for encouraging a

more peer to peer support and collaboration culture around the use of a Google Plus Community for the course in the future include: beginning by establishing social interaction online via sharing information about the participants, lecturers modelling this culture on the community, and assigning an assessment percentage to peer commenting and collaboration to the Google Plus Community participation. One of the limitations of the use of a Google Plus Community within the course is the inability to upload and share 3D models directly within posts, however posts can include links to any web-based content or another repository for students' 3D files. This will be investigated further for the second iteration of using a Google Plus Community within the course.

## **Performance**

The 2013 performance course was relocated into a new building space that incorporated state of the art performance facilities for drama, dance, and live theatre, but no thought had been given to providing an infrastructure to enable presentation and collaboration technologies within this space. Hence the use of three MOAs and iPad minis for the course lecturers enabled this space to be used for students to record their performances, play them back on the MOAs, critique their performance, and view and discuss supporting material in the performance space rather than in a separate classroom space. This project also resulted in the development of a guide to the use of the MOAs that was shared between all of the projects (<http://goo.gl/8xkuU0>). Example lecturer reflections on the use of the MOAs can be viewed at <http://youtu.be/5-CFUufVyU8>. Lecturers quickly evaluated the benefits of utilising wireless mobile devices and the MOAs for screen-mirroring. They recognised the need to think differently about their teaching processes and the types of assessment activities utilised in the curriculum.

We've been using the MOA and the iPad minis in our teaching. Initially we were using it as a presentation device, which has limitations and it is difficult to transfer files to the iPad. For example PowerPoint on the iPad messes up fonts and layouts and embedded videos do not play. However there are other applications of the devices that are quite useful, for example showing videos using GoodReader, and being able to immediately show student videos straight after they are recorded is great. So part of the relevance for our context of performance for screen is that students can use the technology to film themselves doing things and then immediately show the rest of the class and form the basis for a discussion. We are also looking at ways of creating online communities where students can discuss things amongst themselves and present assessments less as written activities than as video blogs of their performance - we're teaching them performance, so rather than writing it down as a journal entry they can express their performance as a combination of written and video reflections. (Lecturer 1, 2013)

I teach a performance communications paper and I've been using the iPad mini and the MOA in my classroom teaching, and it's been fantastic for recording performances and then I could take the iPad mini home and review the performances. My students have also used the MOA for presenting their projects in class. It's also been useful for presenting interviews and discussing these in class. I'm not confident with new technology, but once I had a few practices of connecting wirelessly and knew what I was doing I found it really exciting and I'm now much more confident with it. (Lecturer 2, 2013)

We established regular brainstorming sessions between the researcher and the performance lecturers to cover both technical implementation issues and ideas for new assessment strategies. One of the main technical issues revolved around the wireless connectivity design of the MOAs. The lecturers were used to connecting video cameras via HDMI cables to projectors to record and review student performances. Troubleshooting wireless connectivity issues was initially difficult for the lecturers to conceptualize when there were no wires involved to see how the devices were connected.

## **Masters and Honours students**

A Google Plus community was formed for students conducting research with an interest in Digital Media as a means of providing a forum for discussion and peer support to try to overcome the isolation students often feel when writing a thesis or dissertation. We believed that the community would need little input to thrive, as students desired interaction with each other. Students were also encouraged to start blogs to document their progress and share it with other students. This was an interesting experiment in that participation was entirely optional and students invited were not tied to any particular class or supervisor as with the other social media communities.

The Google Plus community experienced limited discussion or active participation. Without any common mechanism such as assessment integration, or participating in common classes the cohort saw little reason to participate in dialogues using social media. This saw the majority of posts written by a supervisor. This was met with mixed reactions. Many of the students surprisingly reported the community beneficial as the majority of posts contained helpful information on conducting research. Because there was little interaction the knowledge was only flowing one way and the Community served more as a weekly newsletter than a collaborative environment one would expect of a social media platform.

The Google Plus community did have an unexpected positive outcome as both a support tool for students considering enrolment and a marketing tool. New students (Honours or Masters) looking for both supervisors and information on where to start were given invites to the Google Plus community. This allowed for a channel of communication to be opened up with potential students before they chose to enrol. Knowledge on topics such as how to start research, the insecurities we feel as beginner researchers, and links to a few students' blogs documenting their journey

were covered in the community. This allowed supervision staff to aid potential students with minimum of effort by simply directing questions to community posts dealing with the subject. This helped secure enrolments in two ways. First potential students felt more confident in enrolling. Secondly students commented they felt the staff were engaged with their ideas before even enrolling, which they perceived as high motivation and competency levels from the academic staff.

A small portion of students reported the Google Plus community as a pointless activity, one even light heartedly posted a meme of a dog using a computer with sarcastic captions. When these students were asked why they felt negatively or indifferently, many responded that they had enough social media in the form of Facebook, Twitter, or similar and did not feel any desire to participate in another social network. Of the students expressing indifferent or negative responses it was noted that they were all coming to the end of their research projects, while those who valued the community still had a considerable amount of time remaining.

Wordpress's adoption among this eclectic cohort of students conducting research experienced limited use and very little interaction. The general consensus among students was one of doubtful questioning about the benefit of an additional blog to the material being written and presented regularly to a supervisor. Students were advised maintaining a blog would allow other students to comment and provide another avenue of feedback, however this was met with scepticism. Students believed that no one would read their blogs, and even if they did they would not receive feedback.

One student decided to try Wordpress and regularly posted her research's progression. As part of an agreement she has with her employer, regular updates on her research are required. This provided a strong motivating force to start a blog as a

means of evidencing progress. The blog had many unexpected positive outcomes for this student. It allowed many stakeholders including businesses in the field, researchers with similar interests and potential interview participants an open and honest portal into her research. In total 80 people now follow her blog. Through this stakeholders can submit feedback and help refine her research. The process of reporting her progress to an audience has also provided motivation to keep a steady and regular pace with her work.

## **DISCUSSION**

The communications study project led to the development of several new pedagogical and assessment strategies for the curriculum that will be applied in 2014. These include:

- Establishing a student Blog as the core element of an eportfolio within one of the compulsory first year papers
- Introducing Google Plus communities as supporting student discussion forums
- Purchasing iPad minis for the lecturers
- Purchasing a set of MOAs for the performance space
- Providing students with a recommended minimum specification for purchasing their own mobile devices

The COP also established the beginnings of a culture of scholarship and reflective research around teaching and learning within the department (Cochrane, Antonczak, Guinibert, & Mulrennan, 2014; Cochrane, Antonczak, et al., 2013).

## **SAMR and heutagogy**

As has been found with many mobile learning projects, the biggest impact of the first iteration of a project was with the lecturers' personal productivity.

The iPad has allowed me to make more productive use of my down time (particularly when sitting on public transport for a couple of hours each day). I've been able to monitor student problems and progress via the Google+ app. I've been able to review/re-write lecture notes and to view video tutorials whilst on the move. Although I haven't incorporated apps like Layar (augmented reality) and Autodesk 360 (collaborative 3d design) into my teaching, seeing them or at least even knowing about them (via the iPad/Apps Store) opens up the possibility that I may be able to incorporate them into my work in some way in the future. (Lecturer G+ Post, 2013)

I love how the iPad and social media tools enabled me to interact with my class any time from anywhere. Rather than being tied down to office hours or class times, I could answer questions or initiate discussions on a more frequent basis using tools like Google+. I especially liked how I could do this on the bus on the way to work. It reclaimed an hour or two of my day (depending on traffic) that was unproductive, that I can now spend on other areas like research. I also quite enjoy the iPads portability when combined with online learning services like lynda.com or technology news feeds through Google+ or Scoop.it. Being a lecturer of digital media you have to always keep up with the new developments in this rapidly changing field or be left behind. The iPad combined with these services provided a way of getting daily doses of this information in times that were often spent unproductively, such as commercial breaks, waiting for meetings to start, waiting for the bus, etc. (Lecturer, 2013)

This equates to substitution and augmentation of current practice on the SAMR framework scale. However there was also evidence of modification and redefinition of process and practice achieved through the project, illustrated by the integration of Google Plus communities for supporting collaboration and coordination of student team projects, facilitating responsive formative feedback from their lecturers on project progress, and the use of mobile devices and MOAs within the performance courses facilitating live recording and feedback upon student performance and technique. The integration of mobile social media into the courses also enabled a conceptual shift from a focus upon teacher-delivered content towards more flexible student negotiated projects and student-generated content.

The outcomes of the project illustrated three major factors impacting the success of the integration of mobile social media within the curriculum: modelling the

building of learning communities, exploring the unique affordances of mobile social media to enable new pedagogies, and establishing a supporting technology infrastructure.

### **Modelling the building of learning communities**

The project provided lecturers with several new experiences that modelled the establishment of learning communities: 1. A weekly face-to-face discussion at a local café where the participants utilised their wireless mobile devices to collaborate, 2. The use of Wordpress.com blogs as learning journals and 3. The establishment of a virtual Google Plus community. The use of student-owned Wordpress.com blogs and Google Plus communities were consequently integrated into two of the three courses in the project, resulting in a simple yet effective strategy for building learning communities for these courses.

Using WordPress to capture student progress worked very well. In the group context it provided a forum where the students could collect their ideas, thoughts, and progress... In future we will be rolling this out in a number of classes. I can see the creation and maintenance of a word press site by students could easily replace activities like class presentations and provide a space for not only practicing critique but receiving it too. (Lecturer blog post, 2013)

As a tool in class I was very impressed by Google+. It was implemented in Creative Practice and provided a great digital meeting spot. Both teams used it extensively with very little encouragement needed. Both teams seemed to enjoy Google+ as it afforded them a simple way to keep in touch. A great example of this is one student was not present for a month of classes. He was able to keep in touch with his team in the class and ensure that his team was on track and contribute. For the other students they used this ability to delegate tasks and both ask for and give feedback throughout the week, rather than having to wait for class to roll round. Also as a lecturer this was a handy tool for distributing knowledge quickly. (Lecturer blog post, 2013)

Creating a refocus upon building learning communities throughout the courses required a significant change of culture, which was easier established in undergraduate students rather than with post graduate students. For supporting

teamwork in undergraduate classes it worked very well, however as an informal meeting space for grouping postgraduate researchers it did not work as well. Thus we established that building a new culture within the curriculum requires staging and scaffolding across the length of the course, and must start in the first year of the course and be built upon in the subsequent years of the course. Consequently the curriculum is being rewritten to implement the establishment of student eportfolios using student-owned Wordpress.com blogs as an assessed activity within the first year of the course, followed by the exploration of student-generated content using mobile devices in second year, and the use of Google Plus communities to support student negotiated team projects in the third year of the course. This culture will then flow on to postgraduate students, as many follow on from the undergraduate course.

### **Exploring the unique affordances of mobile social media to enable new pedagogies**

The project focused upon implementing collaborative curriculum redesign and development of technical expertise within communities of practice, facilitated by an expert ‘technology steward / academic advisor’ (Cochrane, 2013). In this process the teaching staff were equipped with mobile devices and learnt how to use them effectively while re-thinking and re-conceptualising pedagogy and assessment strategies within their own specific teaching contexts (see for example: (Cochrane, Sissons, & Mulrennan, 2012)). Providing the lecturers with iPad mini’s and MOAs to experience and use throughout a semester provided them with an experience as a learner using these tools. Previously their experience of mobile social media had been limited by their experience of the relatively immature Android and Windows Mobile tablet ecosystems (at the time of the project). The integrated infrastructure developed around the use of iOS devices, MOAs, and the depth of iOS social media Apps

provided the lecturers with a broader realisation of what was possible to achieve using mobile social media.

### **Establishing a supporting technology infrastructure**

We collaborated with IT services to develop an appropriate infrastructure that enables personal mobile devices to become collaborative tools. This involved establishing a robust and speedy campus wireless network, along with more flexible protocols for access and widespread availability, as these requirements are critical success factors for m-learning. The framework has highlighted the importance of a collaborative approach, where the pedagogical aspects drive the development of infrastructure (Salmon & Angood, 2013). Working with ICT Services we have enabled the existing network to be more ‘mobile friendly’ in terms of supporting different devices and operating systems. We have also designed and produced mobile presentation and screen-sharing MOAs that can be used in a variety of formal and informal learning spaces to promote collaborative uses of mobile devices by teachers and students. While we attempted to be platform agnostic and produce a framework utilising mobile social media that could be implemented on either iOS, Android or Windows mobile devices, in reality a robust wireless mobile screen-mirroring solution is still hardware dependent. After experimenting with the current capabilities of iOS, Android and Windows mobile devices we chose to support the more mature iOS ecosystem when developing the MOAs. However while iOS devices can seamlessly screen-mirror to our MOA (Airplay) infrastructure, it is still possible for Android devices to stream media wirelessly to the MOAs via Airplay, and Windows 8 devices can screen mirror via Airplay using third party solutions such as Air Parrot. While the lecturers were initially pro Android for its user-configurability, they “ate humble pie” and became convinced of the affordances of iOS devices for usability

and collaboration via a robust screen-mirroring infrastructure that could not be matched by Android devices.

Both the tablets [*iOS and Android*] came with devices to wireless connect them to either the classes projector or the Mobile Airplay Screens (MOAs) we had on loan. These were the apple TV and a Sharecast dongle Both devices connected with ease and I never had any problems with the connections dropping on either. The problems with both devices connecting was highlighted when students wanted to connect. The all share cast works on a pairing system that takes a minute or two to setup initially. Once a device is paired all it needs is to be plugged in and a switch flicked on the Samsung tablet and the device connects. This system made it so much easier to connect than apple devices so long as you only ever want to use one device. The pain with this system is that as soon as someone else wants to connect it requires the device to be paired to their device which is slow. It also does not remember previously paired devices so you need to constantly be pairing it. This hindered the class joining in with their own devices. *In comparison the Apple TV was much better for collaboration as once setup on a students device they could jump on or off as they pleased.* The problem with the airplay was it involved checking you were on the right WiFi network and sometimes required telling the device to “forget” other WiFi networks in order to work. Of the two I felt Apple provided the best solution for collaborative classroom sharing of mobile devices by a significant margin. (Lecturer blog post, 2013)

Beyond screen mirroring, we made sure that the social media tools that we chose were supported by Apps across all three major mobile OS's.

## FUTURE RESEARCH DIRECTIONS

We have presented the application of our mobile social media framework for creative pedagogies within the context of transforming a communications studies curriculum. In order to test the transferability of this framework into other contexts we have also been implementing this framework in a number of related contexts within our University (Cochrane & Antonczak, 2013b; Cochrane & Rhodes, 2013; Cochrane, Sissons, Mulrennan, & Pamatatau, 2013; Cochrane & Withell, 2013). In the future we would like to explore the transferability of this framework in other higher education institutions.

One of our identified keys to supporting this framework is developing an appropriate technology infrastructure, which raises the issue of cost. While providing a robust and adequate wifi infrastructure to support the increasing demand of wireless mobile devices is now part of institutional IT budgets, providing cost effective solutions for enabling collaborative learning environments around student-owned mobile devices is often neglected. We achieved this by the development of MOAs. This was an in-house designed system driven mainly because of needing a more cost-effective and agile solution than commercially available systems. Our MOA stands were designed by one of our Product Design students at a cost of \$500NZ per stand, and by specifying a fifty-inch plasma full HD screen connected via an AppleTV and audio via optical connection to a mounted iHome iW1 audio system kept the total price per MOA under \$3000NZ, which was significantly cheaper than any commercially available system.

While we did explore offering Android wireless mirroring capability to the MOAs, the immaturity of available Android screen-mirroring solutions made this impractical. In the future we will continue to explore alternative cross-platform mobile wireless mirroring technologies, such as the emerging Chromecast from Google, and Crestron's development of AirMedia. As mobile devices represent a rapidly developing and changing technology the implementation of our mobile social media framework will require constant redesign of activities and assessments enabled by the affordances of new mobile social media technologies. In particular the developing arena of wearable computing such as Google Glasses and smart-watches represent the potential for new and innovative pedagogical strategies and activities.

## **CONCLUSIONS**

Here we draw out the key principles identified by the communications case study supporting the development of a mobile social media framework for collaborative curriculum design. In summary the case study illustrates that an effective mobile social media framework for collaborative curriculum redesign must meet three goals: model the building of learning communities, explore the unique affordances of mobile social media to enable new pedagogies, and establish a supporting technology infrastructure. Our framework (Table 2) maps a pedagogical shift from teacher-directed content to student-directed learning onto the types of activities and assessments that can be facilitated by mobile social media to realise this pedagogical reconception. By utilising the relatively simple SAMR technology adoption framework we can scaffold lecturers and students in moving from merely substitution of current practice onto new technologies towards redefining practice with mobile social media. This is a unique journey for every different educational context, which can be supported by the establishment of communities of practice of lecturers and academic developers enabling collaborative curriculum redesign. As in the communications studies case, this is an on-going journey of discovery by all of the participants.

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## KEY TERMS AND DEFINITIONS

**MOA** = Mobile Airplay Screen

**Heutagogy** = Student-directed learning

**COP** = Community Of Practice

**WiFi** = Wireless Ethernet

**SAMR** = Substitution, Augmentation, Modification, Redefinition. A technology adoption framework

**Google Plus** = Google's social network