Post Web 2.0 Media: Mobile Social Media

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ABSTRACT
In this paper we explore the outcomes of a mobile community of practice (MOBCOP) reified in the development of a mobile social media framework that we have implemented in the creation of a new mobile social media minor within the faculty. The domain of the MOBCOP was a year-long investigation of the potential for mobile social media to act as a catalyst for new pedagogies. The context of MOBCOP was an invited group of Bachelor of Graphics Design lecturers interested in investigating the implications of mobile social media for collaborative curriculum design. MOBCOP comprised six lecturers and an academic advisor as a technology steward. We argue that the resultant mobile social media framework developed from the MOBCOP experience is potentially transferable to a range of educational contexts. We illustrate the implementation of our mobile social media framework within the development of a new media minor that explicitly integrates the unique technical and pedagogical affordances of mobile social media, with a focus upon student-generated content and student-directed learning (heutagogy).

Author Keywords
Heutagogy, Collaborative curriculum design, Communities of practice

INTRODUCTION

The term Web 2.0 was coined by O'Riley (2005) and helped define the social media revolution. However in the intervening years we have seen the exponential growth of mobile Internet connectivity, and burgeoning mobile application ecosystems, to the point where mobile subscriptions to the Internet out-numbered laptop and desktop computing connections in 2010 (mobiThinking, 2012), and over 750000 mobile Apps are now available in the iTunes Store (for example). Over 80% of the world's population now own a mobile phone, whereas less than 15% have access to an Internet connected desktop or laptop computer (International Telecommunications Union, 2011). This has issued in the era of post Web 2.0 defined by mobile social media (Cochrane, Antonczak, Gordon, Sissons & Withell, 2012;Jackson, 2012). However, higher education is still dominated by a Web 1.0 pedagogical paradigm that is characterised by teacher-delivered content, usually within the password-protected confines of an institutionally-hosted Learning Management System (LMS), leading to what Herrington, Reeves and Oliver (2005) describe as 'digital myopia'. The situation is perpetuated by a lack of examples of theoretically informed transferable frameworks for implementing mobile social media in education (Rushby, 2012; Wingkvist & Ericsson, 2011).

Mobile Social Media

The rise of mobile social media provides a powerful tool for enabling learner-generated content and collaboration. In defining mobile social media we are interested in leveraging the affordances of student-owned mobile devices (such as smartphones, wireless handheld computers such as the iPod touch and the iPad) alongside the collaborative and user-generated content affordances of social media. We have previously argued that mobile social media provides unique opportunities for new and emerging pedagogies (Buchem et al., 2012; Cochrane, 2012; Cochrane & Bateman, 2013). Kearney, Schuck, Burden and Aubusson (2012) proposed a useful pedagogical framework for mobile learning based around authenticity, collaboration, and personalisation. However while they focused upon the affordances of mobile devices they fail to address the critical issues of the disruptive nature of mobile (Sharples et al., 2009), pedagogical design (Herrington et al., 2009), and integrating mobile learning within formal learning environments (Laurillard, 2007).

Reconceptualizing Pedagogy

Kukulska-Hulme (2010) describes mlearning as a catalyst for pedagogical change. However, pedagogical change must be an explicit element of curriculum design or else we perpetuate the no significant difference phenomenon inherent in comparative technology enhanced learning research (Reeves, 2005). A reconception of pedagogy is required around how mobile social media pedagogical frameworks can harness the concepts of learning theories such as social constructivism. We have found the concept of the Pedagogy-Andragogy-Heutagogy (PAH) continuum (Luckin et al., 2010) useful as a measure of pedagogical change from the delivery of teacher-directed content to a refocus upon enabling authentic student-directed collaborative learning (heutagogy). Luckin et al., outline the concept of the PAH continuum in Table 1. Luckin et al., argue that heutagogy need not be solely the domain of doctoral research, but can be applied to any level of learning.

	Pedagogy	Andragogy	Heutagogy
Locus of Control	Teacher	Learner	Learner
Education Sector	Schools	Adult education	Doctoral research
Cognition Level	Cognitive	Meta-cognitive	Epistemic
Knowledge production	Subject understanding	Process negotiation	Context shaping

Table 1. The PAH continuum (from Luckin, et al., 2010, p78)

The concept of heutagogy (student-directed learning) resonates with the graduate capabilities that we value – such as creativity, critical thinking, and the ability to work successfully either in teams or independently as needed.

Communities of Practice

We have found that scaffolding conceptual shifts in the role of lecturers and students for pedagogical change can be achieved by the sustained engagement of a community of practice of lecturers who support one another as they investigate the potential of mobile social media within the context of their curriculum (Cochrane, 2012). Communities of practice is a social learning theory proposed by Lave and Wenger (1991), and further developed by Wenger (1998) who has continued to explore the way social media can nurture and enable COPs (Wenger, White & Smith, 2009). Key concepts in COP theory are: the domain of interest, legitimate peripheral participation, the production of boundary objects as an outcome of the reified activity of COPs that can be used to broker the activity of the COP into other contexts, and technology stewardship.

Reconceptualizing Curriculum Design

Laurillard (2012) calls for curriculum design to become a collaborative process: "The basic argument is that a 21st century education system needs teachers who work collaboratively to design effective and innovative teaching, and digital technologies are the key to making that work" (Laurillard, 2012, p1). Balsamo (2011) also argues that education needs a paradigm shift "from a paradigm of "teaching" to one of "learning"" (Balsamo, 2011, p134) utilizing innovative technologies. Bruns (2008) argues that social media enables a pedagogical refocus upon student-generated content. These ideas resonated with our experiences and led us to approach curriculum design as a collaborative process with the goal of enabling student-directed learning within authentic experiences enabled by mobile social media (Cochrane, Antonczak and Wagner, 2012;Buchem, Keegan and Camacho, 2012).

RESEARCH METHODOLOGY

In our exploration of mobile social media we utilized a participatory action research methodology (Swantz, 2008). We were interested in institutional change – specifically the application of new pedagogies, and the development of principles to facilitate this change. A mobile community of practice (MOBCOP) was established consisting of six lecturers and the researcher as a technology steward during 2012. The participants were all lecturers within the Graphics Design department, and each participating lecturer was supplied with an iPhone 4S, and an iPad3 and were allowed to keep these as their own devices.

Research Questions

The MOBCOP focused upon mobile social media, in particular collaborative mobile film making was guided by the following research questions:

- How can mobile social media be used as a catalyst for reconceptualising pedagogy, from teacher-directed paradigms to student-directed heutagogy using student-owned devices within the context of authentic collaborative projects.
- What is the potential for collaborative student-generated mobile video to create digital stories in an international team-based context.
- What are the affordances of mobile social media technologies to enable authentic learning contexts for Graphics Design.

Data Collection and Analysis

In this paper we focus upon the experience of the MOBCOP lecturers as they collaboratively explored and developed mobile social media curriculum design principles. All of the seven participants of the MOBCOP created mobile social media eportfolios for recording their journey, consisting of a Wordpress blog as a hub for curating a range of mobile social media such as YouTube, Vimeo, Bambuser, and Picasaweb. Participants were also expected to become active members of social networks such as Twitter, Google Plus, and LinkedIn. Google Docs was utilized extensively for collaboratively designing new course projects and assessments. Participant mobile social media project outlines, final reflections and reports are collated on the MOBCOP group Wordpress site at http://mobcop.wordpress.com. Data collection and analysis were achieved by utilizing RSS feeds from participants' social media portfolios. Emergent themes

were identified and discussed during face-to-face workshop sessions with all the participants, who were tasked with creating projects for their students utilizing mobile social media in the second semester of 2012. The MOBCOP was loosely structured around a series of weekly participant facilitated discussions and investigations of a selection of mobile social media tools, negotiated by the interests of the participants. These included:

- An overview of social media
- An introduction to Twitter
- An introduction to Blogging
- An introduction to Google Plus Hangouts
- What is RSS – how to manage social media
- Social video via YouTube and Vimeo
- Mobile livestreaming via Bambuser
- Mobile eportfolios via Behance
- Collating and curating mobile social media via Storify.com

RESULTS

This section details the most significant outcomes of the MOBCOP project wth respect to mobile social media curriculum design. Student feedback on the redesigned curriculla and activities is the subject of other papers (Cochrane & Antonczak, 2013).

MOBCOP Outcomes

The MOBCOP was a significant transformational journey for the participants, and their experiences are the subject of a separate paper. In this paper we focus upon two of the significant outcomes of the MOBCOP. The activity of the MOBCOP was reified in the development of a series of mobile social media projects that were integrated into each participant's teaching practice during semester two of 2012. This then led to pitching, scoping, and collaboratively designing a new media minor within the faculty, developed by the MOBCOP participants.

Designing a New Media Minor

A direct outcome of the MOBCOP experience was the collaborative development of a new media minor for integration within the department. The minor was modelled on our developing concept of a mobile social media framework for enabling heutagogy, and consists of four papers across three years of the bachelor of design programme designed to scaffold a move from teacher-directed pedagogy to student-directed authentic experiences. This minor explores the potential of twenty-first century mobile social media with a focus upon understanding the way mobile social media platforms reconceptualize the practical processes of storytelling, teamwork, adaptability, collaboration, user content creation, critical thinking, networking and delivery into an evolving and changing technological future. The following sections outline the new media minor.

Paper 1: Introduction to Mobile Social Media

An introduction to the fundamental concepts, critical contexts and processes that underpin the first year of the course by extending the adoption of mobile social ePortfolios to establishing student-generated content. In this paper students explore the unique affordances of mobile social media and create ePortfolios that will become the foundation of their learning journey throughout the three years of the course.

Paper 2: Mobile Social Media Collaboration

A critical exploration of contemporary mobile social media to build student collaborative video projects. In this paper students' build upon their mobile social media portfolios established in the year 1 paper to become mobile social media content creators, collaborators and critics. This learning experience is achieved through the development of student focused projects within national collaborative projects throughout New Zealand, incorporating teams based at AUT, Unitec, Massey University, and other potential national partners.

Paper 3: Contextual Affordances of Mobile Social Media

This advanced educational opportunity provides for students the investigation of the contextual affordances of mobile social media. In this paper students build upon their mobile social media national project established in the year 2 paper 1. Through practical application to a series of projects and media, international collaboration, critical and analytical skills are enhanced in a social media context. This is achieved via the development of team-based projects within international collaborative context throughout New Zealand, and international partners.

Paper 4: International Community of Practice
Research, analytical, critical and creative capabilities are developed and refined in this student-generated project. Critical frameworks, collaborations, teamwork, intercultural competencies are explored to situate the research in relevant theoretical and professional contexts. Issues of mobile social media are examined within an international community of practice. Presentation skills are developed to position the research outputs in the setting of a body of work and project timeline and critical dates are negotiated between students and lecturers.

Designing for Mobile Collaboration and Connectivity

Key to enabling the unique affordances of mobile devices is establishing a robust connectivity backbone. Another outcome of MOBCOP was the roll-out of increased wifi coverage across the teaching and learning spaces that the MOBCOP participants used in order to enable wireless connectivity for the participants to teach and interact wirelessly with the presentation systems within these environments, and also to enable their students to connect, collaborate, and interact via their own mobile devices. Thus the researcher worked closely with the University's Information Technology (IT) services to design a wifi and classroom connectivity solution for enabling wireless screen-mirroring from mobile devices. A second AUT-Test wifi network was established to test the impact of enabling Airplay screen mirroring and wireless streaming media from mobile devices to classroom projection systems. Wireless connectivity to video projectors was achieved via either the installation of AppleTVs in classrooms, or the installation of the Airserver App on lecturers laptop computers that could then be connected via VGA or HDMI to classroom audio/video (AV) systems. This enabled the flexibility to present and interact from anywhere in these spaces, rather than the lecturer having to stand at the front of a classroom and present from a fixed desktop or laptop computer. This also enabled students to connect and share their work wirelessly from anywhere within these spaces as well. Significantly, wireless screen mirroring enabled lecturers to think differently about content-delivery and interaction processes – whereas they previously tended to default to PowerPoint slide presentations, with mobile wireless screen mirror they could show and interact with any application live in realtime. Thus the MOBCOP participants were encouraged to bring the use of mobile social media live into the learning experience of the classroom, for example: Twitter streams, Google Plus Hangouts, Live video streaming via Bambuser, using Evernote and Prezi instead of PowerPoint, and reviewing students eportfolios in class.

MOA
Building upon the work done around the development of mobile collaborative workstations by Mitchel et al., (2010) at Queensland University of Technology (QUT), we developed MObile Airplay screens (MOAs). Whereas Mitchel et al., created mobile Computers On Wheels (COWS) for flexible student collaboration workstation and presentation systems, we created wireless presentation systems with no attached dedicated computer. Rather students can mirror the screen of their mobile device (iPhone, iPad, or Samsung Galaxy device) to the MOAs which require only an Airplay enabled wifi network and power to create a moveable collaborative workstation and presentation system. This turns a student-owned mobile device from a personal small screen productivity tool into a group collaboration tool. The goal of the MOAs is that students can work in several groups in a single learning space, creating their own flexible collaborative learning environment, rather than focusing upon the large presentation mode that classroom projection systems tend to perpetuate.

DISCUSSION

In this section we draw out the implications of our experience and research for other educational contexts.

Enabling Mobile Collaboration

We explicitly encouraged the MOBCOP participants to move beyond the use of PowerPoint presentations in their lectures to interact live with mobile social media tools, and thus to model the educational use of these tools to their students. This was a new experience for their students, who were accustomed to lecturers previously requesting that they turn off their mobile phones during classes. This represented a significant reconception of the role of mobile social media, from a purely social domain to a set of empowering collaborative educational tools. This is perhaps best summed up by one of the participating lecturers final video reflection: https://vimeo.com/53726227.

> *The small size of the iPhone means I will probably have it on me at all times, as such, I am more likely to capture a moment on photo or video, which I then sync to the cloud so that I can watch it on the larger screen of my iPad. Most of the apps that I have been using in my MOBCop lesson are also applicable to the iPad. This can be seen in my class lesson about Mobile app carriers and how they can help enable us to achieve great things. This video can be seen at - https://vimeo.com/user13878060/videos... benefits of this project were to understand the big picture of the device, the apps that can work from it, and how these can cause beneficial change in multiple areas of our program including different kinds of digital publishing over the next few years. (Lecturer blog post, 2012)*

Lecturers appropriated new presentation and interaction tools such as Evernote, Bambuser, Vyclone, and were empowered by the flexibility enabled by wireless Airplay screen mirroring, illustrated by one of the participants presenting their final MOBCOP report wirelessly from their iPhone to an audience of the Universities senior management team http://youtu.be/sdzifOaGMeE. This also led to the development of a portable prototype mobile wireless presentation system (MOAs) as shown in Figure 1.

Figure 1. Mobile Airplay Screen.

Developing a Mobile Social Media Framework

From previous mlearning projects the researcher identified six critical success factors (CSF) for mobile social media integration in education (Cochrane, 2012):

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.

Applying these critical success factors to the concept of the PAH continuum within the context of our MOBCOP mobile social media projects has led to the development of a framework for mobile social media integration within design education, which was used to inform the development of the new media minor. We outline a generic version of this mobile social media framework in Table 2 and discuss how this framework was applied to the development of the new media minor, and can be applied to other learning contexts beyond Graphics Design.

	Pedagogy	Andragogy	Heutagogy
Locus of Control	Teacher	Learner	Learner
Course timeframe and goal	Initial establishment of the course project and induction into the wider design community	Early to mid-course: Student appropriation of mobile social media and initial active participation	Mid to end of course: Establishment of major project where students actively participate within an authentic community of practice
Cognition Level	Cognitive	Meta-cognitive	Epistemic
Knowledge production context	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. These are then shared, curated, and peer-reviewed in an authentic COP
Supporting mobile social media affordances	Enabling induction into a supportive learning community	Enabling user-generated content and active participation within an authentic design COP	Enabling collaboration across user-generated contexts, and active participation within a global COP
Critical success factors	CSF 1,2,3	CSF 4,5	CSF 5,6
Ontological shift	Reconceptualising mobile social media: from a social to an educational domain	Reconceptualising the role of the teacher	Reconceptualising the role of the learner

Table 2. A framework for using mobile social media to enable a move towards heutagogy.

This mobile social media framework was used in the development of the new media minor. This involved a collaborative process between three of the MOBCOP members, using Google Docs to synchronously and asynchronously brainstorm, justify, and critique course goals, pedagogical strategies, and assessment activities. Much of this was based upon the participants own mobile social media experiences throughout the MOBCOP, and informed by the researcher's literature review (Cochrane, 2013). The resultant four papers are outlined in Table 3 as aligned with the mobile social media framework.

Paper	Credit & Level	Cognition level	Assessment activities	Critical Success Factors	Conceptual shift	PAH alignment
Paper 1, Year 1: Introduction to mobile social media	15 Level5	Cognitive	Personal digital identity building and student-generated content	CSF 1,2,3	Teacher modeled	Pedagogy
Paper 2, Year 2: Mobile social media collaboration	15 Level6	Meta Cognitive	Collaborate in a team-based project as content creators	CSF 1,2,3	Teacher guided	Andragogy
Paper 3, Year 2: Contextual affordances of mobile social media	15 Level6	Epistemic	Establishment of an international team project	CSF 4,5	Student negotiated	Andragogy to heutagogy
Paper 4, Year 3: International community of practice	15 Level7	Epistemic	Active participation within a global professional community	CSF 5,6	Student directed	Heutagogy

Table 3. Developing a new media minor based upon our mobile social media framework

The four papers scaffold a shift from teacher-directed pedagogy in the first year of their university course, to student-directed authentic collaborative projects (heutagogy) in the third and final year of their Bachelor of Graphic Design course. Thus the new media minor will serve as a vehicle for pedagogical change within the curriculum, facilitating conceptual shifts for students as they move from largely passive recipients of knowledge to active participants within a

student-directed learning community. The role of the lecturer is also reconceptualised over the length of the new media minor, from an initial . However, the role of the lecturer is critical in designing authentic learning experiences and actively modelling collaboration and critique of mobile social media, bridging the formal and informal learning experiences of their students (Laurillard, 2012; Herrington et al., 2009). Mobile social media is used as a catalyst for these conceptual shifts within the curriculum. While the context of the MOBCOP experience and research has been Graphics Design, the application of our mobile social media framework is not limited to this one context. We have applied iterative versions of this framework within a variety of contexts, including: Product Design (Cochrane and Bateman, 2013), Journalism (Cochrane, Sissons, Mulrennan and Pamatatau, 2013), and an international collaboration comprised of five different courses in five countries, Ireland, UK, Spain, Germany, New Zealand (Buchem, Cochrane, Gordon, Keegan and Camacho, 2012). Future aims of our research include comparative analysis and critique of the implementation of our mobile social media framework within varied educational contexts.

CONCLUSIONS

To conclude, this paper covered three key points. The first point is the potential for mobile social media to be used as a catalyst for reconceptualising pedagogy, from teacher-directed paradigms to student-directed heutagogy using student-owned devices within the context of authentic collaborative projects. We established that MOBCOP was a catalyst for pedagogical change by scaffolding conceptual shifts in the role of lecturers and students. Indeed, lecturers and students began to use their mobile phones during classes not only to share their knowledge but also to learn from one another. Furthermore, using their mobile device as a communication tool during class, or beyond it, encouraged a higher level of participation in the learning community from the participants. Secondly we illustrated the potential of collaborative student-generated mobile video to create digital stories in an international team-based context. We argued that the MOBCOP was reified in the development of a range of mobile social media projects for students, and new forms of classroom interaction using mobile social media such as live video streaming, mobile eportfolios (for example Behance), and collaborative mobile video production. We also explored the affordances of mobile social media technologies to enable authentic learning contexts for Graphic Design, which led to the development of a moveable collaborative workstation and presentation system enabling a flexible collaborative learning environment. Thirdly, the MOBCOP experience ultimately led to the development of a mobile social media framework that formed a catalyst for creating a Mobile Social Media minor focusing upon understanding the way mobile social media platforms enable a reconceptualisation of the practical processes of storytelling, teamwork, adaptability, collaboration, user content creation, critical thinking, networking and delivery within a post Web 2.0 world that is defined by mobile devices. The MOBCOP journey has just started and, while it is still at its early stage, it has had some significant outcomes which can be further refined, and the transferability of the mobile social media framework into other educational contexts other than Graphic Design can be explored.

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