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Emerging Pedagogies

Helen Keegan

Imagine surveying the media, information and cultural industries in the mid 1980s...The scene would resemble a large sandy beach, with crowds organised around a very few large boulders. These boulders were the big media companies... Now imagine the scene on this beach in five years' time. A few big boulders are still showing, but many have been drowned by the rising tide of pebbles. Some of the pebbles they drop are very small: a blog post or a comment on YouTube... A bewildering array of pebbles in different sizes, shapes and colours are being laid down the whole time, in no particular order, as people feel like it. (Charles Leadbeater, 2009)

Over the past decade, the rapid growth of Web 2.0 has led to a fundamental shift in the relationship between audiences and the 'big boulders' of traditional broadcast media. Nowadays, the audience can themselves be producers, with the ability to publish and share their own 'user generated content' (UGC) through personal devices. The rules have changed: traditional gatekeepers are no longer in full control of the media that reach society in the way that they were in a pre-digital age. We are witnessing a democratisation of production processes, leading to new forms of consumption and participation. Online social networks enable the rapid, seemingly instantaneous spread of media across networks and varied demographic groups who are able to create new meanings through remix, re-appropriation and the re-circulation of media to new audiences (Jenkins et al., 2008). In an age of social networking and a culture of 'produsage' (Bruns, 2008), we can be active participants in both the media and the message. The rise of social media – specifically, the cultures, platforms and practices that characterise the social web – has implications for all.

Social technologies have not only disrupted the traditional media and publishing industries, but as a system for disruptive innovation the Internet has also led to major upheaval in our conceptions of knowledge and learning (Brown, 2000; Davidson 2011; Naughton 2012). In Higher Education, social media are facilitating new pedagogies based around networks, openness and collaboration. These approaches to learning and teaching are challenging traditional models of education, not only in the way that we conceptualise the curriculum and the roles of educators and learners, but also through challenging the structures of institutions themselves (Davidson and Goldberg, 2009; Wiley and Hilton 2009; New York Times 2012). The support for 'open and social' is gathering pace, as witnessed through the adoption of Web 2.0 technologies and increasingly networked educators and learners (Couros, 2010; Conole and Alevizou 2010) and the rise of the open educational resources and practices, including support for open access, open research and digital scholarship (Morgan and Carey 2009; Neylon, 2009; Weller 2011). Learners are also collaborating through online social spaces – not only consuming, but also producing and sharing their own media and learning artefacts. Whether focused solely on participation in networked learning environments or, more broadly, as connected digital citizens, media literacies are crucial for optimal participation in a networked society (Rheingold and Weeks, 2012).

Media education is a broad, overarching term for a set of practices and theoretical understandings that allow us to read and interpret the media. Often conceptualised and operationalised around production, language, representation and audience (Buckingham,

2003) media education is seen by its proponents as a core component of the school curriculum and is further developed in later-years schooling and Higher Education as Media Studies, a discipline in its own right. While traditionally Media Studies has mainly focused on the ‘boulders’ of the dominant media of the broadcast era (mainstream television, film, newspapers), Media Education 2.0 – in analogy with Web 2.0 – includes emerging practices based on participation in networked publics. While the idea of ‘Media Education 2.0’ is not uncontroversial (Buckingham, 2010), and media literacy is itself a contentious term (Livingstone, 2004), for the purposes of this chapter I shall draw on the work of Jenkins et al. (2006) in supporting the development of specific skills and competencies in order to contribute to a participatory culture.

The cases presented here adopt a practice-focused approach to media education as supported by Burnett and Merchant (2011), who suggest that existing paradigms of critical media literacy are limited in their ability to address the complexities of fluid social media spaces. In each case, practical examples are used to highlight methods for the development of critical media literacies and skills in participatory media production, consumption and critique – particularly in recognition of inequalities in participation (Buckingham, 2010) and the importance of ‘the development of skills valued in the modern workplace, and a more empowered conception of citizenship’ (Jenkins, 2006: xii). Rather than being Media Studies students in the strictest sense, the learners I describe here are based in a science and engineering faculty. Many are fairly conservative in their attitudes towards creativity and media studies in general, as the study and use of social media is seen as departure from the disciplinary norm. One of the objectives of the courses outlined in this chapter is to open the learners up to new ways of seeing and develop their understanding and appreciation of social media production and consumption from a range of disciplinary perspectives. Much of this work involves a considerable degree of perspective transformation (Mezirow, 1978), both epistemological and ontological. The case studies presented here highlight examples of transformation through media education with a particular focus on social and mobile media and devices.

Firstly, **networks and openness**: the use of Twitter hashtags will be demonstrated as a powerful tool for moving beyond the traditional ‘module’, developing learner confidence and autonomy in participation in social media networks by encouraging learners to share their work openly through online social spaces. Such openness allows serendipitous learning and negotiated curricula to emerge, and blurs the boundaries between disciplines, education, industry and tutor / learner roles.

Secondly, **production/consumption**: the development of multimodal literacies through mobile / networked user-generated content production will be outlined. Centering on mobile phone filmmaking, I shall describe an ongoing research study into a series of learning activities that require video-engineering students to switch roles and ‘technology genres’ (medium specificity), challenging their core disciplinary assumptions in order to help them to learn more about the changing context in which they will practice.

Finally, **identity and transmedia literacies**: I shall discuss the introduction of Alternate Reality Gaming into an undergraduate audio / video engineering programme, where mystery and intrigue are the drivers for collaborative exploration into digital identities and digital cultures. Using a range of online (and offline) social and mobile platforms, learners become players in an alternate reality game, leading them to drive their own curriculum and developing a deep understanding of issues around digital identity and participatory culture.

Education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. (Paulo Freire, 1996).

Networks and Openness – Twitter Hashtags

Some of the core characteristics of new media pedagogies are dependent on participation in social networks. Connections through social media platforms allow learners and educators to perform and publish openly and to aggregate and syndicate their work on a ‘global stage’. While the affordances of what is commonly (although not uncontroversially) termed as Web 2.0 have been explored and celebrated for nearly a decade, one of the most interesting elements in recent years has been the emergence of the Twitter hashtag as a course identification tool for connecting learners and sharing resources on Twitter. Twitter is a microblogging platform that allows users to post ‘tweets’ of up to 140 characters; hashtags are used to define keywords and topics on Twitter, and through clicking on a hashtag the user can see who else is tweeting about the same topic and join the conversation. While much hashtag research has focused on political debate (Bruns and Burgess, 2011) and other major, real-world events (Becker et al. 2011; Segerberg and Bennett, 2011), from an educational perspective, hashtags are equally powerful in their capacity to enable learners and educators to connect with others, share ideas and build personal learning networks.

Hashtags open up the processes of knowledge creation and sharing, not only through sharing information through hyperlinks and ‘retweets’ (boyd et al., 2010), but also through more focused activities such as ongoing conversations (for example, *#phdchat*, *#edchat*) and collaborative note-taking (Parry, 2011). They allow groups to remain in constant ambient connection through *push* technologies, sharing and responding to resources at any time of day or night, whether in real-time or though following the hashtag asynchronously in order to track discussion and co-curate resources. What makes hashtags so powerful is the immediacy of the Twitter search mechanism, allowing learners to instantly locate and connect with others who share their interests and passions. Communities of interest are formed which develop into ‘affinity spaces’ (Gee 2004), through which we begin to see the everyday realisation of Illich’s ‘learning webs’ as envisioned in *Deschooling Society* (1971) and approaches to learning which have been described as rhizomatic (Cormier, 2008) and connectivist (Siemens, 2005), leading to learning that is both emergent (Williams et al., 2011 and 2012) and self-determined (Blaschke, 2012).

Hashtags have an interesting effect on traditional courses both as defined by institutions and as experienced by learners and educators. When a course or module becomes defined by a hashtag (for example, *#ds106*), that course often moves beyond the conventional boundaries of the semester and assessment, challenging received notions of knowledge chunked into units which are completed when the final assessment is submitted. Hashtags can take on a life of their own, becoming a community identifier. Increasingly, when the ‘official’ course ends, the hashtag – or rather, the community centred on that hashtag – does not disappear, as members are able to sustain communications easily over time. Interested ex-students then follow current course hashtags and join the conversation, thus becoming informal mentors for current students.

The following examples offer some insight into how Twitter and hashtags are used, and the opportunities that have arisen through opening up both the modules and learners' assessed work to the outside world. These learners have diverse interests and motivations, but as undergraduate broadcast engineering students hoping to enter the broadcast / media industries after graduation, the emphasis is placed on developing professional online identities and networks that connect them to their chosen industry.

Industry experts (2009)

In a cohort where the students were both unfamiliar and uncomfortable with Twitter, two members of the group had 'eureka moments' when their work was found and promoted by well-known industry leaders. The group had recently started blogging, but were not convinced of the relevance of the activity to their future careers. In the third week of the module, one member of the group posted a review of a well-known audio application, while another posted a critical reflection on copyright and the licensing of digital music. In each case, their writings were discovered, praised and shared by two experts: these industry figures were a) the CEO of the company who had created the audio application, and b) one of the leading experts in music industry law worldwide. They came into the timetabled session the following week full of excitement, and their experiences were crucial in motivating the rest of the group. They no longer engaged with social media because they had to (for assessment purposes), but because they were motivated by having their voices heard by potential future employers. Through gaining recognition way beyond the confines of the traditional module, they were empowered through a real sense of self-efficacy.

Negotiated curriculum (2011)

In this case, the group had been following a musician (@solobassteve) on Twitter who is well-known for his use of social media, and they had also been given assigned readings based on the work of Nancy Baym, a scholar well-known for her work on music, musicians and the internet. I attended a conference in the US, during which time I tweeted using both the conference hashtag (#ir13) and the module hashtag (#psvtam). While attending a presentation by Baym, I tweeted a picture of one of the slides, which centred on the musician @solobassteve. The group #psvtam saw this, and the instant connection between their studies, Baym's research, @solobassteve and the link between #ir13 / #psvtam had a powerful effect. They began to follow the conference hashtag avidly, some requesting I send them further references and links. Upon my return to the UK, some of the students tweeted me asking if they could find out more about networks: 'not computer networks – the kind of networks that you do'. Thus followed a Twitter exchange where we openly negotiated a new topic for that week. I then spent the day selecting materials and producing a presentation that was uploaded to Slideshare at 10pm the night before the session. After tweeting the presentation, and alerting some well-known individuals to their inclusion in the following day's session using the @reply convention, one responded, 'this sounds interesting – can I join in?' By 10am the following morning, this person was skypeing into class, sharing his ideas with the group. At the end of the session the overwhelming response from the group was 'wow, that really was social media'. This kind, spontaneous act, which arose as a result of Twitter and networks, was a key moment for the group. Reminiscent of Cormier's work on the Community as Curriculum (2008), it brought the curriculum to life, and their lived experience of connectivity was a powerful motivator.

Research survey response (2012)

An MSc cohort, many of whom were resistant to the idea of developing social media literacies as they wanted to focus on acoustic and video engineering, were working on research projects. One of the group developed an online survey for her project on 3D cinema. A reluctant tweeter, she shared the link with the group using the module hashtag. This was then retweeted with the tags *#stereoscopic* and *#3D*. Within twelve hours, there were nearly 100 responses to the survey. This contrasts markedly with prior cohorts pre-Twitter, who would rarely get more than 50 responses to a survey within a month. Furthermore, the hashtags caught the attention of a specialist online magazine, which then published an article on the project. The impressive survey response and magazine promotion happened within a few days, which was an effective – and most importantly, lived – example of the power of social media networking.

These examples are characterised by serendipity and opportunity. The speed with which information can pass through Twitter, along with the serendipitous nature of hashtags as connectors (Kop, 2012; Buchem, 2010) often leads to opportunities which become ‘eureka moments’ for learners who are unconvinced / unconfident about participating in the space. Whether through gaining a rapid and unprecedented number of research survey responses through using a specific hashtag; a leading expert commenting on a blog post found through a tweet; a major industry manufacturer promoting a student post that again was found through a tweet; or a recognised creative practitioner connecting with the group over Skype due to a serendipitous tweet, such moments are both authentic and empowering for learners. Each of these real-life examples led to genuine transformations regarding self-efficacy in each case.

Nevertheless, there may also be negative consequences of ‘affective networks’ (Dean, 2010) if learners do not possess the necessary social media literacies to participate effectively in these online spaces. Connecting through Twitter and hashtags allows us to connect with peers and experts and engage in 24/7 knowledge sharing and networked learning, but in order to do so successfully, learners must master specific literacies in relation to the anatomy of a tweet, also adding value through comment and curation (boyd et al., 2010). While this can be empowering for those who engage with the platform and gain followers and recognition (social capital), social networks can also be undemocratic and exclusionary (Buckingham, 2005: 85) for those who lack the skills or the confidence to participate. There is a danger that while those who master the medium benefit considerably others may get left behind. For this reason there has to be serious consideration given to the ethics of assessment in these spaces, particularly in relation to the performance of identity in an unfamiliar and public space.

Production / Consumption – Mobile Phone Filmmaking

While mobile learning and mobile literacies have been well-documented (Kukulska-Hulme et al., 2009; Facer et al., 2004; Merchant, G. 2012), and mobile film aesthetics are being explored and theorised (Baker et al., 2009), there is a paucity of research into mobile devices as tools for production which challenge conventional media industry practice, and what this might mean for learners’ identities as future media practitioners.

For the past four years, mobile phone filmmaking has formed part of an undergraduate module in Social Technologies and Digital Cultures (Keegan and Bell, 2011). The learners are studying video production, but, as they are based in a science faculty, the emphasis has traditionally been placed more on video engineering than narrative and aesthetics. In reality, many of these learners will enter an industry which is in a state of flux due to the rise of user-

generated content and constant technological shift. The aim of the mobile phone filmmaking projects is to encourage the learners to rethink not only their practice, but also their values: does the use of high-end equipment necessarily mean high quality? They are encouraged to develop alternative filming techniques using small mobile devices, enabling them to position the cameras in places they would not normally be able to access with large and / or high-end cameras. At the same time, they are operating within constraints of the medium such as pixelation (although as camera phones improve, this becomes less of a concern) and differences in frame rate and file-type between devices.

These constraints have led to a deeper understanding of visual storytelling and short-form content viewed through the eyes of the everyday consumer and creator. It could be argued that creativity has been commodified by 'big media' (the boulders), and often our learners equate creativity with high production values such as those achieved through the use of professional HD cameras and high-end equipment. Contrasting this with 'everyday creativity' (Gauntlett, 2011) and ideas from the 'good enough' movement (Engholm, 2010), where production values are overruled by the importance of content and context of use, the learners are being introduced to new aesthetics through the production of digital media. Such discontinuities can be challenging for the learners, yet at the same time discontinuities in both the learning process and aesthetics have led to genuine transformations in practice (Lanzara, 2010). Through exploring the legitimacy of using personal devices as creative tools, they become more comfortable with the idea of rule-breaking and challenging conventions.

The mobile phone filmmaking projects have run through several iterations focusing on multimodal production across mobile devices using YouTube, Flickr, Twitter, blogs and wikis (for a fuller description of earlier iterations see Keegan and Bell, 2011). In the following example, I shall describe the further development of networked media literacies through a transmedia experience, where the learners became participants in an Alternate Reality Game.

Identity and Transmedia Literacies – Alternate Reality Gaming

Alternate Reality Games (ARGs) use online and offline worlds as platforms for transmedia, interactive narratives which unfold according to players' actions. ARGs are of particular interest in education, due to their potential for active learning, collaboration, group problem-solving, and use of new media technologies (Whitton, 2009). In this project, the main driver was curiosity: how far would learners go in driving their own learning when mystery and intrigue are embedded into the curriculum?

The main reason for developing an ARG was to try to bring curiosity back into learning in an increasingly assessment-driven, consumer-led HE culture. We decided to develop a transmedia experience for undergraduate Audio Technology students who were taking a module in Social Technologies – in effect the ARG would *be* the module, rather than a taught topic *within* the module. Participation would not be assessed, but those who chose to participate would hopefully be motivated to engage with much more content than they were required to, in order to pass the assessment for the module.

Planning for the ARG commenced in February 2011, well in advance of the game commencing at the beginning of the autumn semester. During this time, various ideas were explored in relation to the overall narrative, and how this could be used to lead learners to explore issues around digital culture and transmedia intertextuality (Kinder, 1991). We felt

that some kind of event was needed at the culmination of gameplay as a reward for the players (learners). We approached the BBC and they agreed to broadcast our students' mobile phone films on the BBC Big Screen in Manchester City Centre at 11am on 9 December 2011. (9.12.11.)

In July 2011, we set up a fake online identity across a range of online platforms. This mysterious character would then communicate with the students through Twitter (initially). There were four main themes to the module / ARG: curiosity, collecting ideas, connecting and 'getting your work out there'. These themes were introduced to the group through a) the module manifesto, and b) the co-puppetmaster / media producer who delivered a guest lecture at the beginning of the module.

The 'rabbit-hole' (entrance to the game) was a sequence of numbers – 91211 – sent to the home addresses of ten of the students at the beginning of the semester. These numbers were actually the date of planned game reveal and BBC broadcast on 9.12.11. Through sending these numbers to some of the group, we hoped to make the learners curious. They began to ask one another about the numbers, and upon finding that other members of the group had received the same letter they did indeed begin to wonder what these numbers represented. However, some of the group were concerned about what was going on, especially as a strange character on the internet had made contact with some of them, asking if they had received the numbers.

This was an ethical problem, not only because ARGs necessarily involve a degree of deception (Andersen, 2011) but because at this stage three of the students became quite paranoid. As not only their module tutor, but also their programme leader and personal tutor, I was playing multiple roles and did have a pastoral duty and a trust relationship with the group. At this point, we did consider ending the game.

However, in an attempt to put their minds at rest and save the game, I sent an email to the students to explain that we had made contact with our mysterious character and while I did not fully understand what was going on myself, I knew enough about this person to know that we had nothing to worry about and it was leading us somewhere 'amazing'. This allowed us to reassure the students without giving anything away. Interestingly, the learners then began to engage with our mysterious character. Above all, they wanted to know who this person was, and why had he chosen them?

They began to exhibit learning behaviours that were highly active, social and autonomous, and through exploring content on the various online platforms that belonged to our character – all of which we had 'planted' – they consumed far more content than they would have done ordinarily, especially as they were not being assessed. They began to set up Google docs to crowdsource clues and ideas from any piece of communication they had with our character. They began to make cryptic mobile phone films to try to confuse him, as he had done them. They were actively learning through collaboration, problem-solving, media consumption and production.

Because players themselves drive an ARG, as puppetmasters we were not in full control of the direction of the game and had to change the plot according to their actions. The overall narrative was actually driven entirely by the students, who became so obsessed with the mysterious character that we did not (need to) go as deeply into the narrative we had planned.

After twelve weeks of transmedia game play; solving puzzles and cryptic clues, many of which were embedded in videos, images and books; responding to subliminal messages which were released over several months across various online and offline platforms, they finally worked out where they had to be and when – they even had a password. They just did not know what for, or why.

On the 9th December 2011 the students made their way to Manchester City Centre, where after following a series of Foursquare check-ins (which held clues) they were led to a hidden QR code. Upon scanning this code, a number was dialled. They gave the password ‘pebbles and boulders’, and at this point the person who answered the phone hung up. They then received a text message that simply said ‘turn around and look at the screen’. Their response to seeing their films on the big screen was wonderful. However, they were still concerned about our character. Where was he?

At this point, we revealed that their entire module had been an alternate reality game. We explained that in prior years we had studied ARGs and transmedia storytelling, but this year we had decided to immerse them *in* a transmedia mystery to try to deepen their understanding by learning through experience. We also explained that we wanted to make them deeply curious, to see how far they would drive their own learning away from the confines of assessment. We gave them a de-briefing document to take away and digest, hoping that they would not feel negatively about the experience.

Thankfully, once they had recovered from the initial shock, their response was extremely positive. Some of the most active and enthusiastic players remained obsessed over every twist and turn, and spent that weekend poring over the collection of online media (blogs, videos, images, tweets, and readings) in order to join the dots and work out how the ARG had been constructed. In essence, they consumed all of the content (which was essentially the module) all over again, away from assessment. Through post-ARG intertextual readings, they were further developing their understanding of transmedia intertextuality (Kinder, 1991) purely driven by curiosity. Many of them blogged their experience in glowing terms, claiming that the ARG had transformed their thinking. Their commitment and motivation were overwhelming, and they felt that they had been part of something very special. To hear them reflect on the module and recognise how their prior experiences and expectations may have stifled their innate sense of curiosity in an educational setting, is testament to the initial hypothesis that introducing mystery and intrigue into the curriculum could bring back the sense of curiosity that leads to genuine engagement and deep learning. Several of the students felt that it had been a ‘life-changing’ experience, which had transformed not only their view of education, but also their perspective on the world around them.

However, while the ARG was largely a success in terms of group participation, not all students engaged fully as they were highly assessment-focused and saw this mysterious character as a distraction, while others were simply not interested. Although disappointing in some respects, this did reflect the typical pyramid of participation (Brackin, 2008) and it was interesting to observe group dynamics as the active and enthusiastic players became engrossed. Those who participated in the ARG went far beyond what was expected in the module, driving the curriculum and finishing their assigned work well in advance in order to solve the mystery that was unfolding. They became active readers of transmedia at a deeper level than those who remained solely focused on the assessed work. They developed considerable literacy and fluency in the flow of content and storytelling across media, along with a more nuanced understanding of issues around identity, authenticity and ethics in an

online environment. They had also developed their skills in curation, communication and collaboration in a new media environment, through participating in live web-broadcasts, collaborating on Google Docs and co-producing media artefacts in response to our mysterious character.

Those who did not engage with the game during play did have their interest piqued when the ARG was revealed (the content in the debriefing document was largely based on previous years' lecture notes), and some expressed regret at not having fully participated. While ARGs are commonly criticised for failing to engage all, which could be argued to be an ethical issue in an educational context, in this case our ARG was not assessed. Even taking into account the few who did not engage, the group as a whole benefited from questioning identity, meaning and motivation – particularly their own, with regard to what drives them in a formal education setting.

Conclusion

In this chapter I have described three scenarios where students developed new media literacies based around networks, produsage, identity and transmedia. Learning to learn, learning to un-learn: these projects encourage students to break away from institutional and disciplinary boundaries, developing a range of media literacies and having a transformative effect on the way they participate as media producers and consumers on the mobile web. Following the new media literacies proposed by Jenkins et al. (2006), the scenarios presented in this chapter (hashtags, mobile filmmaking, ARG) map on to the following skills:

- **Play:** the capacity to experiment with one's surroundings as a form of problem solving
- **Performance:** the ability to adopt alternative identities for the purpose of improvisation and discovery
- **Appropriation:** the ability to meaningfully sample and remix media content
- **Collective Intelligence:** the ability to pool knowledge and compare notes with others toward a common goal
- **Judgment:** the ability to evaluate the reliability and credibility of different information sources
- **Transmedia navigation:** the ability to follow the flow of stories and information across multiple modalities
- **Networking:** the ability to search for, synthesise and disseminate information
- **Negotiation:** the ability to travel across diverse communities, discerning and respecting multiple perspectives, and grasping and following alternative norms

By challenging their assumptions about digital media, identity, professional practice and the public / private sphere, learners have accepted alternative approaches and new ways of seeing, developing their social media literacies and an openness to rethinking their practice as a result of technological shifts. Through engaging with industry experts on Twitter, and exploring UGC from the 'big media' perspective through mobile filmmaking and alternate reality gaming, these learners have developed a more nuanced understanding of participatory culture and situated their professional practice within the increasingly convergent space between the 'boulders' of broadcast media and the 'pebbles' of new media spaces.

In considering the learners described in this chapter, it is important to acknowledge that they are not Media Studies students. They are based in a science and engineering faculty that is characterised by high-end technology and a positivist disciplinary culture. However, when

they begin their professional careers many of these students will enter the broadcast industry: an industry which is being transformed due to digital, networked technologies and the democratisation of production. Furthermore, the continued use of social media is likely to open them up to multiple viewpoints and epistemologies in ways which were not possible (or even desirable) in traditional practice of disciplinary silos in the academy. The rise of digital networked technologies is leading to increased recognition of interdisciplinarity and interdisciplinary studies (Burnett, 2011; Balsamo, 2011) and in this respect Balsamo's conception of 'Designing Culture' is of particular interest as she calls for technology to be treated as a post-disciplinary topic, alongside the transformation of universities through an 'epistemological reboot'. In a time when social media is impacting on our experience of the world, we need to rethink media education in Higher Education and focus on cultivating contextual, multiple media literacies (Kellner, 2004) in *all* Higher Education disciplines in order to develop graduates who have the skills and competencies to develop professional online networks and participate fully in a digital, networked world.

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