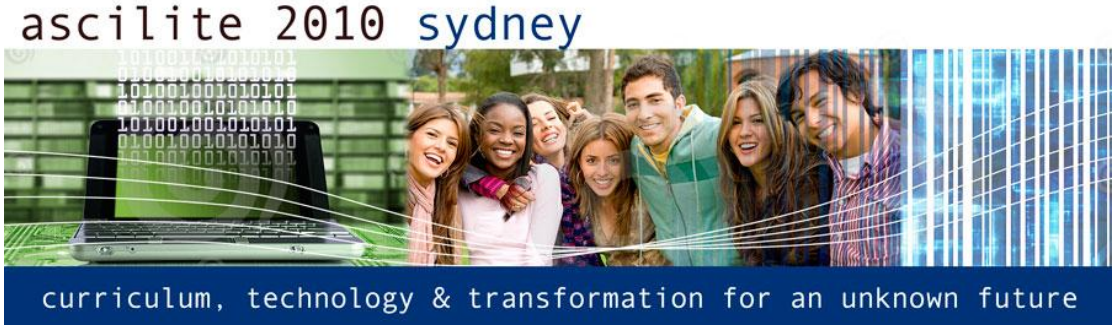

Using digital tools to connect learners: Present and future scenarios for citizenship 2.0

Sultana Lubna Alam
Faculty of Information Sciences and Engineering
University of Canberra

Catherine McLoughlin
Australian Catholic University

With the adoption and integration of mobile and digital tools of the web 2.0 era, along with the scope and uptake of diverse and expanding social media, the higher sector education landscape is transforming itself. This is manifested in moves towards a participatory, interactive learning paradigm where students learn through social networks and by participation, collaboration and immersion in digital spaces to seek, share and create knowledge for self-realisation. Students now expect to assume greater control by becoming co-creators of content and by producing rather than being mere consumers of predetermined resources. Worldwide, higher education providers are now seeking to provide learners with a more customized, personalised learning experience. Students also need to become "citizens 2.0", with the capacity to participate fully in the social and political activities of their communities. In this work-in-progress paper we portray scenarios for learning using a range of digital tools to engage learners and develop critical digital literacy skills. These scenarios are situated in a tertiary level unit called "social informatics" which investigates areas such as e-government, e-learning and e-law and deals with the social, cultural, philosophical, ethical, legal, public policy and economic issues relating to information and communications technologies. The design of the learning environment incorporates multiple participatory digital social tools where students can share ideas and co-create content to enable them to engage fully in the knowledge society. Recommendations for design of future spaces for development of digital citizenship skills are presented.

Keywords: Digital citizenship, citizen 2.0, web 2.0, pedagogy 2.0, Gov 2.0

Current context of higher education

The appeal and integration of Web 2.0 technologies and applications worldwide is an undeniable fact (Lee & McLoughlin, 2010). Higher education providers worldwide are now seeking to provide learners with a more customized, personalised learning experience. In the current world of ubiquitous mass social media, it is Web 2.0 tools that provide an excellent vehicle for making global connections. The critical question becomes what can be done promote effective learning using Web 2.0 tools. It is also essential that these tools be adapted into higher education to benefit learners and accommodate to their needs in a more powerful way. The authors of this paper have designed an instructional model that can be used to guide users to utilize Web 2.0 tools to improve learning and performance in the area of citizenship 2.0.The transmissive model of teaching is being replaced with blended e-learning approaches, while the need to make the curriculum more relevant and engaging is imperative (Tapscott, 2009). The technological, social, and communicative norms of digital natives (e.g. netGen) and

changing nature of digital information assets are transforming the way we think about creativity, innovation and pedagogy. A number of researchers refer to the changing landscape as *pedagogy 2.0* and learning *2.0*, (Downes, 2006; McLoughlin & Lee, 2009) and signal greater use of the affordances of social tools to enable connectivity, communication, participation, and the development of dynamic communities of learning. Taking a broad view of the affordances of web 2.0 – sharing, collaboration, customization, personalisation etc, has also given rise to a number of alternative paradigms of learning e.g. personal learning environments (Atwell, 2007) and heutagogy, both of which are focussed on development of self-regulatory skills among students (Conole & Oliver, 2007).

Today's learners need to be equipped with skills to survive in a digital participatory global economy (Meijas, 2005). As new digital tools and applications emerge daily, learners need a growing awareness of the range of tools available and how the open source movement is an expression of the efforts of people worldwide to connect and create. Learning is no longer an internal, individualistic activity, but is collaborative and social, and spans the formal learning agenda of educational institutions with the personal learning goals of students and with learning communities beyond the classroom. Wikis and blogs for example are being used as a collective intelligence knowledge base for communication on social and political issues (Richards, 2010). As Tapscott (2009), puts it: "the global economy and the digital age require new abilities – it's not what you know that counts anymore, it's what you can learn (p. 127)".

The digital citizen: Citizen 2.0

The concepts of digital citizenship and citizenship 2.0 are particularly relevant in the context of globalisation and the knowledge economy. The most recent technology standards for students published by ISTE enshrine a major category for digital citizenship (ISTE, 2007). "Digital citizenship" is now being dubbed as "citizen 2.0" and in the simplest terms it refers to the ability to participate in society online and to use technology appropriately. Digital citizenship represents capacity, belonging, and the potential for political and economic engagement in society in the information age (O'Brien, 2008). Digital citizens practice conscientious use of technology, demonstrate responsible use of information, and maintain a positive attitude to learning with technology (ISTE 2007 cited in Richards, 2010). The affordances of the recent raft of web 2.0 technologies - sharing, collaborating, networking, customising and personalization enable new forms of civic participation which are changing existing social relations (Punie & Cabrera, 2006). Social communication technologies offer new channels for political engagement, contacting officials, and discussing issues. The network effects or benefits of bringing people together online exceed the satisfaction gained by individual participants - creating what economists call "positive externalities" or spill over benefits.

Signs of progress proliferate that innovative social networking tools now being developed are increasingly oriented towards social and participatory uses, with microblogging being used for information sharing, information seeking, resource sharing and friendship building worldwide (Ebner, Lienhart, Robs & Meyer, 2010). One example that serves to illustrate this is the political protests that occurred in Iran in June 2009 surrounding a controversial election. The Iranian government tried to control information by blocking media coverage and TV. As commercial media outlets were gagged, individuals began to use blogs, wikis and twitter to deliver daily reports to the outside world. The microblogging posts provided an immediate news source to a worldwide audience, and showed the power of social media tools in supporting citizen journalism and expression of human rights issues. This example shows that through social media people can demonstrate socially responsible actions and ways to participate and express themselves in a networked society – often called digital empowerment. Web 2.0 social tools therefore increase the competence of individuals and communities to act as influential participants in the information society (Makinen, 2006). Future citizens will increasingly engage, communicate, collaborate, vote, access services and thus participate in civic activities using digital tools as governments around the world embrace web 2.0 (aka government 2.0) (Chang & Kannan 2008; Gibson et al. 2009; Government 2.0 Taskforce Report 2009; Tapscott, Williams & Herman 2007). It is vital to use the participatory web to develop social and citizenship competence among students "to better address changing youth identities and that recognize online environments as credible sites of learning" (O'Brien, 2008, p. 126.) To prepare citizen 2.0, it is appropriate to use current and emerging digital tools that may shape future communication, collaboration and engagement with government, commerce and society (Richards 2010).

Perspectives on the skills of citizenship 2.0

Definitions of digital citizenship are being reshaped by the participatory, connected networked web 2.0 technologies and the challenges we face in preserving digital information assets in this new citizen-created content environment. A number of different perspectives are emerging that are relevant to this study of how to embed citizen 2.0 skills in web-based tertiary level studies. Westheimer and Kahne (2004) suggest three types of citizens: responsible, participatory and justice-oriented. They also state that this categorisation is not necessarily mutually exclusive, but it is important to make them distinct. The *personally responsible citizens* acts responsibly in his/her community by, for example, picking up litter, giving blood, recycling, volunteering, paying taxes and staying out of debt. A *participatory citizen* actively participates in civic affairs and the social life of the community at local, state and national levels. Participatory citizens need to understand how government and community organizations work, and they need to understand how to plan and lead meetings. The *justice oriented citizen* is one who pursues social justice, does not simply respond to a problem, and instead works to find a solution. Questioning and challenging established systems and structures when they reproduce patterns of injustice over time are activities that characterise an active citizen (Westheimer & Kahne 2004, p.240-242).

Bennett et al (2008) divide citizenship into two paradigms based on distinctive groups: *Dutiful citizens (DC)* who are older citizens continue to feel obligated to be actively involved in public movements and *Actualizing Citizens (AC)* who are younger digital citizens prefer personalised formulations oriented towards individual rights and more passive monitoring of the political environment. Actualizing citizens possess unique learning styles (e.g. preferences for interactive project-based peer-to-peer networked information sharing, participatory media creation) that may help young citizens to find meaningful ways to engage with the institutions of the government leveraging online environments (Bennett et al 2008).

One of the moral and ethical obligations we face as educators is to prepare learners at every age and level to become responsible global citizens and one of the opportunities we have is to model use of digital media in a socially responsible way, and maintain a participatory and inclusive attitude in pedagogy and in learning environment design. Participatory citizens also need to know how government and community organizations work, and how they can engage in active social issues and justice oriented behaviours (Westheimer & Kahne (2004). Hence a challenging issue is that while educators talk about developing graduate skills and generic attributes in our students, digital citizenship skills among university graduates are not often the subject of discussion and course design. Some generic and graduate skills like information literacy, ethics, professionalism that we have embedded in our courses could be said to foster the skills of responsible, participatory citizenship. However we do not explicitly educate future graduates to be justice oriented citizens nor do we accommodate *Actualising Citizen* learning styles to promote civic learning (Bennett et al, 2008). Our curriculum may embrace the traits and tenets of a personally responsible citizen (aka 'good' citizen) by teaching students how to be honest, responsible, have integrity, behave ethically and be law-abiding. However, in typical decontextualised approaches to teaching domain knowledge, university teachers may ignore important influences like social change, political movements and government policy on efforts to improve society (Richards, 2010, Bennett et al 2008). Teachers often focus on compliance with rules and regulations but fail to question established structures and customs using critical reflection and action. University courses need to take more responsibility in facilitating citizen 2.0 competencies. The higher order skills like critical thinking synthesizing and evaluation can assist students to become participatory as well as justice oriented citizens. O'Brien (2008) ponders whether we have failed to consider the implications of the online environment for citizenship education, in general, and digital citizenship, in particular. The communicative power of social software tools offers a means for individuals and groups to address matters of social concern and, thus, contribute to an online democratic commons (p.133).

Schools and tertiary courses across all disciplines are embarking on the process of empowering students with the digital tools necessary to become involved (if they choose) in real social change and democratic processes (Lundy, 2010). The set of transformative activities around civic engagement as demonstrated through initiatives like Chicagocrime.org (uses a mash-up service to list reported crimes in Chicago), FixMyStreet.org (citizens reporting on problems in their streets in a mash-up service), mySociety.org (facilitating public civic movement through democracy and transparency websites), Patient.co.uk (patients can use to record their experiences & rate health services) - are changing the

way we perceive and engage with government, making political, social and citizenship issues more open, transparent and participatory. In addition, the informal, citizen-created content in blogs is unleashing and evolving new knowledge as individual citizens become active as authors, content creators, thought leaders, filmmakers, and bloggers etc (Carnaby, 2009). As the potential of these participatory tools becomes more evident in the current dynamic digital environment, it is increasingly important to allow students access to web-based communication platforms, and to equip them for civic engagement. It is our intention as researchers to incorporate these insights, attitudes and skills into the design of the learning environment for the social informatics unit that is the focal point of this paper.

Exemplars of social media for social and digital citizenship

Social media use for citizenship 2.0 has been demonstrated by a number of studies that use digital tools to connect learners. Of relevance to the present study several have been listed in table 1 below. The examples show how internet based channels and social media are providing opportunities for multi-modal communication and engagement in a range of socio-political issues and activities. As the literature review reveals, there is a gap in studies conducted at Australian tertiary institutions. This research aims to fulfil that gap.

Table 1: Examples of social and digital citizenship in teaching & learning

Study/Reference	Level of instruction/Country	Social media technology used/suggested	Description of citizenship for teaching & learning
Lara & Naval (2009)	K-12/Spain	Web 2.0 applications e.g. wiki, blogs, RSS, social networks	outlines a framework for Web 2.0 applications and instructional strategies for the encouragement of the social and citizenship Competence
Richards (2010)	Middle school/US	Micro blogging (e.g. Twitter), Wiki (e.g. Wikipedia) and social networks (e.g. Ning)	explores three types of citizenship, recent web 2.0 citizen-driven initiatives and provides a framework for instructional design to promote citizenship types.
Westheimer & Kahne (2004)	12th Grade /US		describes good citizenship embodied in education programs in US by listing examples of instructional designs from their research study. Authors devised three types of citizenship relevant to curriculum: personally responsible, participatory & justice oriented citizens.
Bennett, Wells & Rank (2008)	School education/US	Online environments, social networks	divides citizenship into two paradigms: dutiful citizens and actualising citizens (AC). Describes in detail the need for embedding civic learning for young citizens in online environments using AC learning styles.
O'Brien, J. (2008).	K-12/US	Online virtual community space	articulates a visionary online virtual laboratory for democracy that enables young children to participate and engage in online civic activities and to learn how to act in civic society.

Digital citizenship, social technology and instructional strategies

In this section we draw together and integrate a number of instructional strategies to support digital citizen competencies. Richards (2010) framed instructional activities for scaffolding the three types of digital citizenship skills with web 2.0 tools. Lara & Naval (2009) articulated a framework for gaining civic and social competences through adoption of the potential of web 2.0 tools (Conole & Oliver, 2007) and a set of instructional strategies. O'Brien (2008) emphasises the importance of virtual spaces in the Internet as opposed to a brick and mortar approach to citizenship. Using these three broad frameworks in order to achieve social, cognitive and attitudinal competencies for the three types of citizenship, we outline a framework with four dimensions for designing curriculum: 1. social and citizenship competence, 2.online web 2.0 applications, 3. learning and activity design and 4.instructional strategies (see Table 2 below). This framework includes a new dimension to Lara & Naval (2009)'s model – "learning and activity design" which are preferred methods of learning for actualising citizens (Bennett et al, 2008). For example, a wiki can be used for a project-based learning activity using instructional strategies such as collaborative work and project management to build knowledge and comprehension for digital citizenship.

Table 2: The four dimensions of social and citizenship competence in teaching & learning (Adapted from Lara & Naval, 2009 & Bennett et al, 2008)

Social and citizenship competence	Online web 2.0 applications	Learning and activity design	Instructional strategies
Conceptual (knowledge & understanding) • Knowledge and comprehension • Critical reflection • Receiving & producing information *Procedural (skills):* • Technical skills improvement • Communicating • Accepting and practicing social rules • Widening social networks *Attitudinal (values & dispositions):* • Considering of a set of values • Respectful behaviour with the environment, cultural and natural patrimony and sustainable development • Learning a new course of action	• Blogs • Wikis • RSS/Content aggregators • Microblogs • Social bookmarking • Social networks • Documents sharing • Multimedia sharing • Idea generation & voting • Professional networking	• interactive project-based peer-to-peer networked information sharing • Participatory media creation • democratic environments • Activities for content creation • Authentic assessment, self and /peer assessment • Process based and inquiry learning	• Project management • Peer teaching • Case solving • Peer-2-peer learning • Work-integrated learning • Collaborative learning • Learner-centred instruction • Student generated Content • Blending learning • Informal learning • Mobile learning • Personalisation • Reflective learning • Community of learning • Self-regulated learning • Experiential learning

Background to Social Informatics

The context of the present study is a university level unit on Social informatics which explores the impact of informatics on society in areas such as e-government, e-learning and e-law and deals with the social, cultural, philosophical, ethical, legal, public policy and economic issues relating to information technologies. Social informatics is a third year undergraduate elective and postgraduate elective unit for information technology students at ABC University. This unit explores the impact of informatics on

society in areas such as e-government (AKA government 2.0), e-learning and e-law. Topics deal with the social, cultural, philosophical, ethical, legal, public policy and economic issues relating to information technologies; and the many implications of design choices made by information professionals. The learning outcomes are related to the development of students' ability to analyse and evaluate the impacts of various technologies on people, organisations and society. In addition students are expected to develop their capabilities in digital citizenship skills, project organisation and management, teamwork, information collection and analysis, through experiential learning projects. Through activities that are collaborative and authentic, students will be equipped with necessary civic skills to use digital tools to participate in civic engagement in this digital age. This is a research-led, work-integrated learning unit that aims to create a dynamic curriculum to enable students to participate in the emerging domain of government 2.0. The following sections outline the design of the learning platform for the unit, pedagogy for the citizenship 2.0 learning environment including learning tasks, support and resources.

The learner-centred pedagogy adopted offers students a unique opportunity to use the affordances of social software tool in innovative ways to create user generated knowledge for the emerging domain of "government 2.0". For the purposes of the paper the description of Gov 2.0 provided on the Australian "Government 2.0" Google group's site is adopted (Gov 2.0 Australia 2009):

> Government 2.0 is not specifically about social networking or technology based approaches to anything. It represents a fundamental shift in the implementation of government - toward an open, collaborative, cooperative arrangement where there is (wherever possible) open consultation, open data, shared knowledge, mutual acknowledgment of expertise, mutual respect for shared values and an understanding of how to agree to disagree. Technology and social tools are an important part of this change but are essentially an enabler in this process (Gov 2.0 Australia 2009).

In designing the learning environment, the incorporation of multiple advanced digital social tools allow students to share ideas and co-create content to enable them to engage fully in experiential learning (Smith, 2001) while developing digital literacy skills.

The learning platform for Social Informatics

Roles of teachers & students

Current literature around learning and pedagogy 2.0 and university 2.0 (Lee& McLoughlin, 2010) portrays different roles for both students and teachers. Current transmissive pedagogy is being challenged so that learners become more active participants and learning is a participatory, social process supporting life goals and needs. Teachers are expected to provide mentorship and guidance to create an environment for communication, creativity, collaboration, connectivity with peers and the outside world while also co-creating dynamic online units of study that are customized and personalised.

Recent conferences on web 2.0 and government 2.0 (Web 2.0 expo 2009 and Gov 2.0 Expo 2010) have coined the idea that 'Government 2.0 as a platform' meaning social web 2.0 tools provide a platform for collaboration, participation, customization and personalisation for government (O'Reilly, 2009). The platform dynamic can be seen vividly in the recent success of the Apple iPhone. Apple built a framework that allowed virtually anyone to build applications for the phone; leading to an explosion of creativity with more than 50,000 applications appearing for the iPhone is less than a year. We might ask: *"How do university courses become an open platform that allow learners to co-create content in an open collaborative environment leveraging both internal and external networks"?* One approach would be to envisage 'Learning 2.0 as a platform' that would cast teachers as designers of learning and communication activities. In the present study student and teacher roles are articulated as collaborators and facilitators of learning and communication, linking learners, communities and ideas while promoting personalisation, creativity, connectivity and learner-generated micro content leading to joint knowledge creation.

Design of the learning platform

As Don Tapscott (2009) said: "don't throw technology into the classroom and hope for good things. Focus on the change in pedagogy, not the technology. (p. 148)". He added further, "there should be choice, customization, transparency, integrity, collaboration, fun, speed, and innovation in their learning experiences." Such recommendations for learning environment design are being realised by evolutionary new uses for the same technologies based on radical and transformational ideas for teaching and learning practices. The unit *Social informatics* will be setup 'as a platform for learning & communication'- in which web 2.0 tools like twitter, blogs, wikis, and social bookmarking tools will be integrated within the existing LMS (i.e. Moodle). This platform leverages the affordances of web 2.0 (McLoughlin & Lee, 2008) to provide students with a dynamic collaborative learning environment. The students as learners are expected to collaborate with external digital information communities and networks and with each other to share established knowledge and generate new ideas. Learners will contribute to course content which will be sourced from these same external sources. The course will thus use both formal and informal learning by providing a flexible learning and communication platform as shown in figure 2. The learning platform will support student learning experiences and promote lifelong learning by connecting students with outside world using digital tools like web 2.0 for civic engagement. The course curriculum will be setup as a wiki so that learners can contribute. The teacher sets up the learning and communication platform and work as a collaborator and facilitator rather than a traditional instructor (see figure 2).

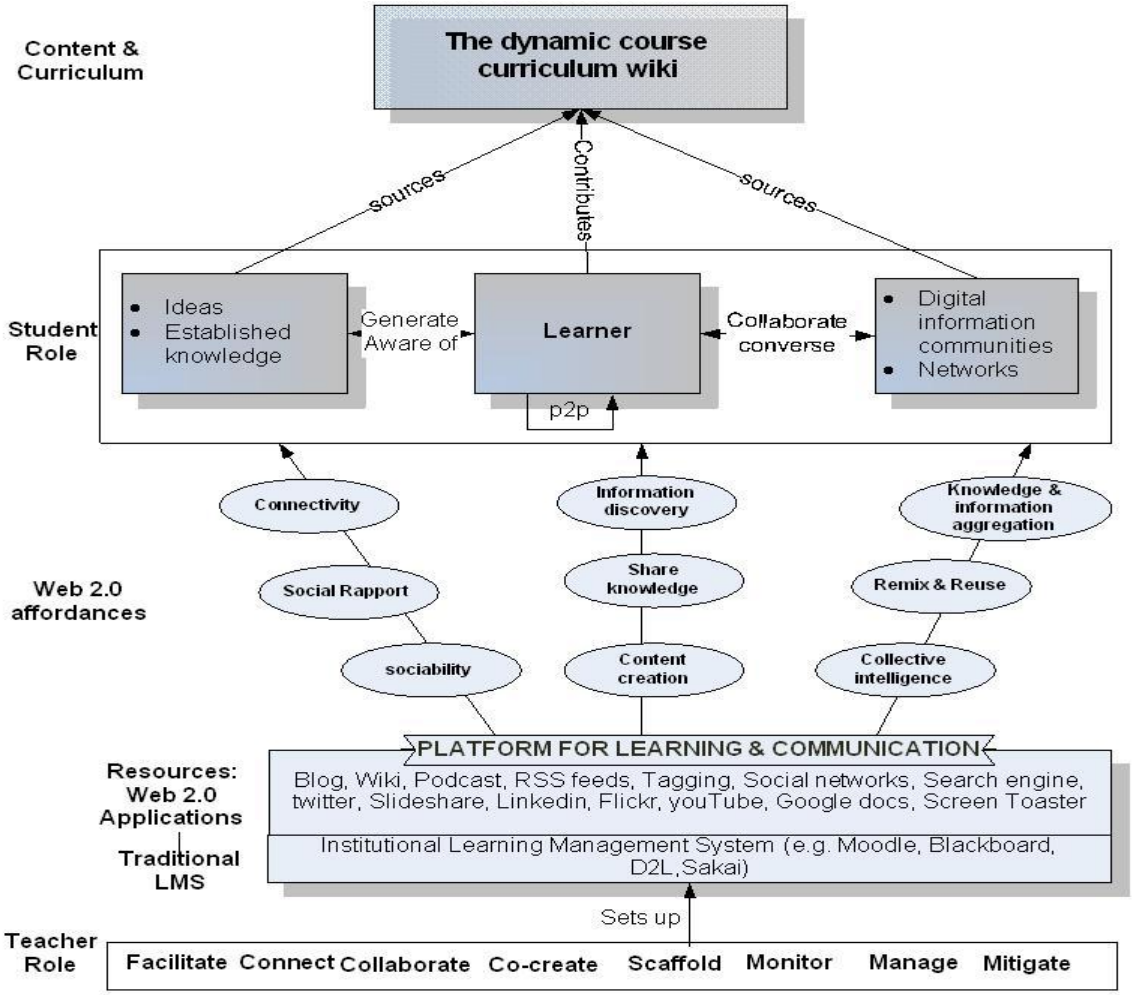

Figure 2: The learning platform architecture for Social Informatics

In this model, students are active, creative learners who constantly engage in two-way communication with their peers and with information networks and communities to generate new ideas and contribute micro-content to the course curriculum wiki. To enable this, students will use the affordances of social software and a dynamic set of web 2.0 applications leveraging the network power of the web. Learning is facilitated by utilising a suite of web 2.0 tools integrated within institutional LMS (Moodle) and by tutor scaffolding, collaboration and peer-to-peer learner activity. There are authentic assessment tasks integrated within real government related research (e.g. analysing campaigns using social media) giving a taste of work-integrated learning complemented with weekly participation using these web 2.0 tools, set readings, dynamic readings generated by learners. Figure 2 presents a visual overview of the learning platform.

The idea is to use technology e.g. a suite of tools rather than a particular technology giving learners choice to engage in meaningful tasks using multiple media types in order to achieve relevance and clarity. Using technology innovatively can pave the way for creating content within a peer-to-peer formal and informal learning environments (Boettcher, 2006, Dron, 2007), and the unit *Social Informatics* is based on this model. Students generate content in pairs or groups to produce micro-content, podcasts and vodcasts to share topics and ideas selected from the course schedule in order to share with peers. This approach of two-way interaction, peer-to-peer learning and experiential approaches (Frydenberg, 2006) linking to real world contexts serves three purposes:

- students are given an opportunity to demonstrate their understanding of the course topics through production of micro-content for their peers
- students develop knowledge in an emerging field like government 2.0 and create a knowledge repository for future students in this course and information networks
- students in this process will gain necessary skills to engage in civic activities using digital tools to become participatory and justice oriented citizens.

Table 3: Designing the e-learning environment

	Learning Tasks	***Learning Supports***	***Learning Resources/Tools***
Authentic	Tasks that are contextual, meaningful, ill-defined, involving collaborative effort and are perceived as having real world relevance outside the academic setting e.g. : • Students individually/in pairs research Gov 2.0 issues in real-life setting • Students in groups/ in pairs create vodcasts/ podcasts on course content • Students individually/in pairs present seminars on relevant topics to contribute major ideas	Support for students to build expertise and knowledge through authentic activities e.g.: • Variety of project briefs, presentations and information helping to describe project needs • Tutor advice JIT or as needed and formative assessment • Presentations by industry professional • Availability of industry experts on relevant topic as contacts	A variety of authentic resources to provide a range of perspectives e.g.: • Government 2.0 sites & usage • Links to Social media and online engagement sites & tools • Membership/participation in online information networks • Using Twitter, blogs etc to connect to professionals
Self-directed	Tasks that encourage knowledge discovery, dissemination, reuse of digital content having value to peers and own personal life: e.g. • Sharing news, links, resources relevant for course material • Gaining & engaging with digital tools e.g. blog, twitter etc	• Tutor modelling and scaffolding • Library support, • Online support • 'How to's for web 2.0 tools • Synchronous and asynchronous support tasks	• Online resources - slides, templates, videos and URL's • Aggregation of student-generated data • Use of Twitter, blog, wiki, RSS feeds, debates & discussions, YouTube, Flickr, Slideshare, Screentoaster

	• Generating new ideas and participating		
Reflective	Tasks that encourage reflection and provide feedback: • Weekly entries/posts for self and peer assessment (Intra) • Reflective focus group	• peer assessment sessions • Online communication, comments, feedback and discussion with tutor and peers	• Online archives for students to view their own and peers' contributions e.g. the subject wiki, blog, twitter feeds etc

Relevant theoretical background pedagogy change

As promoted by Scardamalia& Bereiter, (2003), Lave & Wenger, (1991) and Pavola & Hakkarainen (2005) the pedagogical emphasis is on the knowledge creation process, rather than subject content and places the onus on students to be active in the inquiry process. The learning environment has a strong focus on learner activities, rather than offering "excellent" online resources prescribed by the teacher. Our approach is in contrast to traditional didactic methods of teaching in higher education institutions, which emphasise subject specific content and the transfer of knowledge from lecturer to student, which must often be memorised for examination purposes. Kolb's theory of experiential learning is also adopted to enable the learners engage with course materials (Smith, 2001). Learning supports or scaffolding are also designed to guide learners and provide feedback on their progress.

Through a broad review of the literature, it was found that the three elements of self-regulation, reflection and authentic context are the central tenets of instructional design needed to create learning that can develop students' citizenship skills (Bennett et al, 2008). These strategies provide a framework for developing suitable learning activities that in turn determine the required learning resources and supports needed for an effective learning environment. On the basis of this framework, learning tasks are designed with a focus on self-regulation, authenticity and reflection (Table 3) and considered the learning needs of actualizing citizens (Bennett et al, 2008) as outlined in Table 2. To meet the learning outcomes, learning supports and resources were aligned and designed.

Conclusion

This work-in-progress paper looked at the design of pedagogy for a university unit to run in August 2010 for embedding social and e-citizen competencies among learners using a set of digital tools of the new e-learning age. It has carefully articulated theoretical underpinnings of the design rationales of the unit's pedagogy to adapt current social technologies to transform curriculum to meet the current and future needs of our learners. It has looked at integrating a suite web 2.0 tools with the existing LMS to create a "learning 2.0 as a platform.

The next steps are to evaluate the design through data collected from multiple sources like student logs, Twitter feeds, focus group, reflections, and student satisfaction data with the following research questions in mind:

1. Does the use of social media foster collaborative knowledge creation in the unit? If yes, how? What processes are apparent?
2. How is the depth of understanding about digital citizenship through the use of social media (e.g. twitter)? (before and after the unit)
3. Does students' participation show evidence of engagement?

Our design and pedagogy embraces the traits and tenets of a personally responsible citizen (aka 'good' citizen) by teaching students how to participate meaningfully – to develop skills of digital citizenship and demonstrate responsibility, integrity, ethics and respect while also having a critical approach and be able to engage in learning in a way that shows collective responsibility (Scardamalia, 2002). Educators often disregard important influences like social movements and government policy on efforts to improve society (Richards, 2010, Bennett et al 2008). Tradit ional pedagogy has a strong focus on developing attitudes of compliance and loyalty but may fail to encourage students to question established structures and customs using critical reflection and action. University courses can and

should take more responsibility in facilitating citizen 2.0 skills. The higher order learning outcomes like critical thinking, synthesizing, knowledge creation and evaluation can assist students to become participatory as well as justice oriented citizens. As O'Brien (2008) comments the failure to consider the implications of the online environment for digital citizenship, is a great loss and it undervalues the tools of the current Web 2.0 era and the future or web 3.0 era that is emerging. The Internet offers a means for individuals and groups to address matters of social concern and, thus, contribute to an online democratic commons. As the potential of social participatory media becomes more evident in the current dynamic digital environment, it is essential to prepare students with the skills needed to operate in a web-based world, to become collaborators rather than mere information disseminators, and to embed the needed skills for civic engagement in our pedagogies (JISC, 2009). It is our intention as researchers to incorporate these insights, attitudes and skills into the design of the learning environment for the social informatics unit and to evaluate the success of the unit by engaging students in authentic forms of assessment. The creation of appropriate activities will ensure that students are exposed to the potential of inline social networks for social and civic participation, while also ensuring that they develop the technological and communicative skills needed for employment and participation in lifelong learning. Following our initial study, we anticipate developing a robust instructional design model in collaboration with other universities in Australia in order to fully prepare students for the digital society of tomorrow.

References

Attwell, G. (2007). Personal Learning Environments – the future of eLearning? eLearning Papers, 2. http://www.elearningeuropa.info/out/?doc_id=9758&rsr_id=11561

Bennett, W.L., Wells, C. & Rank, A. (2008) Young citizens and civic learning: two paradigms of citizenship in the digital age. Report from the Civic learning online project

Boettcher, J.V. (2006). The rise of student performance content. Campus Technology, 28 February. Retrieved 11 February 2007, from http://www.campustechnology/article.aspx?aid=40747

Bryant, T. (2006). Social software in academia, EDUCAUSE Quarterly, 29(2), 61-64.

Chang, A & Kannan, P 2008, Leveraging web 2.0 in Government, Industry research paper, http://www.businessofgovernment.org/article/leveraging-web-20-government

Carnaby, P (2009) Citizen-centric content, digital equity and the preservation of community memory. World library and information congress:75th IFLA general conference and council, 23-27 August 2009, Milan, Italy http://www.ifla.org/annual-conference/ifla75/index.htm

Cogan, J & Derricott, R (1988) Citizenship for the 21st century: an international perspective on education

Conole, G. & Oliver, M., eds. (2007). *Contemporary perspectives in e-learning research: themes, methods and impact on practice.* The Open and Flexible Learning Series. London, UK: Routledge.

Downes, S. (2005). E-learning 2.0. ELearn, October. http://www.elearnmag.org/subpage.cfm?section=articles&article=29-1

Dron, J. (2007). Designing the undesignable: social software and control. Educational Technology & Society, 10(3), 60–71.

Ebner, M., Lienhardt, C, Rohs, M & Meyer, I. (2010). Microblogs in higher education- a chance to facilitate informal and process oriented education? Computers & Education, 55,92-100

Gibson, A, Courtney, N, Ward, A, Wilcox, D & Holtham, C 2009, 'Social By Social,: A practical guide to using new technologies to deliver social impact.'.

Frydenberg, M. (2006). Principles and pedagogy: The two P's of Podcasting in the Information Technology classroom. In D. Colton, W.J. Tastle, M. Hensel & A.A. Abdullat (Eds.), *Proceedings of ISECON 2006*, v23 (Dallas) (§3354). Chicago: AITP. http://isedj.org/isecon/2006/3354/ISECON.2006.Frydenberg.pdf

Gov 2.0 Australia 2009, Google groups site, http://groups.google.com.au/group/gov20canberra?hl=en-GB

Government 2.0 Taskforce Report 2009, Engage: Getting on with Government 2.0, 22 December 2009, http://www.finance.gov.au/publications/gov20taskforcereport/index.html

JISC (2009) Higher Education in a Web 2.0 world http://www.jisc.ac.uk/publications/documents/heweb2.aspx

Lara, S. & Naval, C. (2009) Educative proposal of web 2.0 for the encouragement of social and citizenship competence. In G. Siemens & C. Fulford (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 47-52). Chesapeake, VA: AACE.

Lave, J. & Wenger, E. (1991). Situated learning: legitimate peripheral participation. Cambridge, England: Cambridge University Press. https://doi.org/10.1017/CBO9780511815355
Lee, M. J. W., Chan, A., & McLoughlin, C. (2006). Students as producers: second year students' experiences as podcasters of content for first year undergraduates. In Proceedings of the 7th Conference on Information Technology Based Higher Education and Training (pp. 832-841). Sydney, NSW: University of Technology, Sydney.
Lundy, K. (2010) Open submission to the National Curriculum Consultation. http://www.katelundy.com.au/2010/04/22/open-submission-to-the-national-curriculum-consultation/ Makinen, M. (2006). Digital empowerment as a process for enhancing citizens' participation. E-Learning, 3(3), 381-395.
McLoughlin, C. & Lee, M.J.W. (2009). Pedagogical responses to social software in universities. In S. Hatzipanagos & S. Warburton (Eds), *Handbook of research on social software and developing community ontologies* (pp. 269–284). https://doi.org/10.4018/978-1-60566-208-4.ch023
McLoughlin, C. & Lee, M. J. W. (2007). Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era. In *ICT: Providing choices for learners and learning. Proceedings ascilite Singapore 2007*.
Lee, M.J.W. & McLoughlin, C. (Eds) (2010). *Web 2.0-based e-learning: applying social informatics for tertiary teaching*. Hershey, PA: Information Science Reference http://www.ascilite.org.au/conferences/singapore07/procs/mcloughlin.pdf
Mejias, U. (2005). A nomad's guide to learning and social software. The Knowledge Tree: An E-Journal of Learning Innovation, 7. http://knowledgetree.flexiblelearning.net.au/edition07/download/la_mejias.pdf.
Moll, R. & Krug, D. (2009) Using Web 2.0for Education Programs on Global Citizenship: Addressing Moral and Ethical Issues, http://nl149.policyalternatives.ca/sites/default/files/uploads/publications/Our_Schools_Ourselve/13_Moll_Krug_using_web_2.pdf
O'Brien, J. (2008). Are we preparing young people for 21st-century citizenship with 20th century thinking? A case for a virtual laboratory of democracy. Contemporary Issues in Technology and Teacher
O' Reilly, T. (2009) Gov 2.0: Promise of innovation. In Gotze, J. & Pedersen, C. Eds. State of the eUnion: Government 2.0 and onwards. 21Gov.net
Osimo, D 2008, 'Web 2.0 in government: why and how', Institute for Prospectice Technological Studies (IPTS), JRC, European Commission, EUR, vol. 23358.
Paavola, S. & Hakkarainen, K. (2005). The knowledge creation metaphor – An emergent epistemological approach to learning. *Science and Education, 14*, 535-557.
Punie, Y. & Cabrera, M. (2006). The future of ICT and learning in the knowledge society. Luxembourg: European Communities. http://www.eenet.org/upload/File/Vision%202015/ThefutureofIctandlearningintheknowledgesociety.pdf
Richards, R. (2010) Digital citizenship and web 2.0 tools. MERLOT Journal of online learning and teaching. Vol6(2), June 2010
Scardamalia, M. (2002) Collective cognitive responsibility for the advancement of knowledge. In B. Smith (Ed.), Liberal education in a knowledge society (pp.67-98). Chicago: Open Court.
Scardamalia, M. & Bereiter, C. (2003). Knowledge building. In J. W. Guthrie (Ed.), *Encyclopaedia of Education* (2nd ed., pp. 1370-1373). New York: Macmillan.
Smith, M. K. (2001). 'David A. Kolb on experiential learning', *the encyclopaedia of informal education.* http://www.infed.org/b-explrn.htm.
Tapscott, D. (2009) *Grown up digital: how the web is changing your world*. McGraw Hill US
Tapscott, D, Williams, AD & Herman, D (2007), Government 2.0: Transforming Government and Governance for the 21st Century, New Paradigm's Government 2.0: Wikinomics, Government and Democracy Program.
Westheimer, J. & Kahne, J. (2004). What Kind of Citizen? The Politics of Educating for Democracy. *American Educational Research Journal. Summer 2004,41(2)*https://doi.org/10.3102/00028312041002237

Acknowledgements

This paper was written with the support of the ASCILITE community mentoring program.

Author contact details:
Sultana Lubna Alam
Faculty of Information Sciences and Engineering
University of Canberra
Email: Lubna.Alam@canberra.edu.au

Catherine McLoughlin
Australian Catholic University

Please cite as: Alam, SL & McLoughlin, C (2010). Using digital tools to connect learners: Present and future scenarios for citizenship 2.0. In C.H. Steel, M.J. Keppell, P. Gerbic & S. Housego (Eds.), *Curriculum, technology & transformation for an unknown future. Proceedings ascilite Sydney 2010* (pp.13-24). https://doi.org/10.14742/apubs.2010.2048