Digital literacy and e-citizenship skills: A case study in applying web 2.0 tools

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Abstract: Higher education institutions are now seeking to provide learners with a more customized, engaged, personalised learning experience. To prepare "citizen 2.0", it is vital to use the digital communicative tools and digital media that are in use today. In this case study webs 2.0 tools and scenarios for learning are used in learning tasks to connect learners. The context for the study is "social informatics". Social informatics explores the impact of informatics on society in areas such as e-government, e-leaning and e-law and deals with the social, cultural, philosophical, ethical, legal, public policy and economic issues relating to information technologies. The unit incorporates multiple advanced digital social tools where students can share ideas, communicate and co-create content to enable them to engage fully within a learning community and to develop digital literacy and e-citizenship skills.

Context of higher education

Today's learners need to be equipped with skills to survive in future digital participatory global economy (Meijas, 2005). To prepare the future citizens 2.0, it is vital to use the emerging digital tools that may shape future communication, collaboration and engagement with government, commerce and society (Richards 2010). Social identity processes and the means by which people formulate their outlook and relationship with the world, have changed. The concepts of digital citizenship and citizenship 2.0 are relevant in this digital age. For example, young people may feel a greater desire to embrace issues that are connected to lifestyle values rather than conventional civic participation and voting activities. Currently, social networks and digital media are increasingly oriented towards social and participatory activities (Bryant, 2006;Lara and Naval, 2009). With information technology people gain new abilities and ways to participate and express themselves in a networked society –often called digital empowerment to increase the competence of individuals and communities to act as influential participants in the information society (Makinen, 2006). Future citizens will 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 while developing digital literacy skills (Moll & Krug, 2009).

Context of the study

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. The unit 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". To create a definition of Gov 2.0 would be too confining and limiting, which goes against the spirit of Gov 2.0 itself and not within the scope of this paper. However, for the purposes of the paper the description of Gov 2.0 provided on the Australian "Government 2.0" Google group's site is used (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)"GOVERNMENT 2.0 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 while developing digital literacy skills.

Digital citizenship and citizenship 2.0

The definition of digital citizenship is 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. "Digital citizenship" which 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 (Insert reference). Digital citizens practice conscientious use of technology, demonstrate responsible use of information, and maintains a good attitude for learning with technology (ISTE 2007 cited in Richards 2010). Social communication technologies like web 2.0 offer new channels for contacting officials, discussing issues, and mobilizing, then the network externalities or the benefits of bringing people together online exceed the satisfaction gained by the individual participants - creating what economists call "positive externalities" or spill over benefits.

Westheimer and Kahne (2004) suggest three types of citizens: responsible, participatory and justice-oriented. They also stated that these three categorisation are not necessarily mutually exclusive, but it was 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 participate in the 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 to the cause of it. They question and change established systems and structures when they reproduce patterns of injustice over time (Westheimer & Kahne 2004, p.240-242).

The set of participatory and pro-active activities around civic engagement (aka citizenship 2.0) as demonstrated through initiatives like *Craigslist* (a list of crime in Chicago), *FixMyStreet* (citizens reporting on problems in their neighbourhood), *10 Downingstreet*(UK PM's effort to create citizen petitions), mySociety.org (facilitating public civic movement), *TheyworkForYou* (enlisting public servants and grants expenditure), *Patient.co.uk*, which patients can use to record their experiences & rate health services are changing the way we perceive and engage with government making government more open, transparent and participatory. In addition, the informal, citizen created content is unleashing and evolving new knowledge as individual citizens develop as authors, content creators, thought leaders, filmmakers, blog diaries etc (Carnaby 2009). This questions the established protection and preservation practices for digital assets by information professionals in memory institutions. As the potential of these tools becomes more evident in this emerging and changing digital environment, it is equally important to prepare students with the skills needed to understand web-based communication platforms, and how to become collaborators rather than mere information disseminators, along with the need for civic engagement in a community of like minded peers (Lave & Wenger,.1991).

Use of social media for social and digital citizenship

Social media integrated with constructivist pedagogy 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 the table below. As the literature review reveals, there is a gap in studies conducted at Australian tertiary institutions. This research aims to fulfil that gap. Building on the work of Lara & Naval, (2009) & Bennett et al, (2008), we identify the social and civic competencies of citizen 2.0 and align these skills with Web 2.0 tools that have the affordances to support pedagogies and instructional strategies to support development of these skills.

- **Table 1:** The four dimensions of social and citizenship competence in teaching & learning

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, the 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 learning information sharing; participatory media creation democratic environments; content creation; authentic assessment; self and /peer assessment; process based and inquiry learning file sharing	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

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Digital citizenship, social technology and instructional strategies

Richards (2010) framed instructional activities for grooming the three types of digital citizenship with web 2.0 tools. Similarly, Lara & Naval (2009) articulated a framework for gaining civic and social competences using power and the participatory potential of web 2.0 tools.

Web 2.0 Applications

Blogs   Wikis   RSS/Content aggregators   Microblogs
Social bookmarking   Social Networks
Documents sharing   Multimedia sharing
Idea generation & voting Professional networking

Social and citizenship competence

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, the cultural and natural patrimony and the sustainable Development

–learning a new course of action

Instructional Strategies

Project management
Peer teaching
Case solving
peer-2-peer learning
WebQuest
Work-integrated learning
Collaborative learning
Collective Intelligence
Learner-centred instruction
student generated Content
Blending learningg
informal learning
Mobile learning
Personalisation
Community of learning
Self-regulated learning
distributed intelligence
Experiential learning

Figure 1: Web 2.0 applications and instructional strategies to promote of the social and citizenship competence in teaching & learning (Adapted from Lara & Naval 2009)

Teachers facilitate learning by providing personalised learning with a suite of web 2.0 tools integrated within institutional LMS (e.g. Moodle) and by scaffolding, collaborating and coaching students as needed. Figure 1 depicts the strategies and tools adopted to teach digital literacy skills ie self-regualted learning, community of practice, and experiential learning. Students generate content in pairs or groups to produce micro-content, podcasts and vodcasts to share topics and ideas from the course schedule to peers. This approach of two-way interaction: peer-to-peer (Frydenberg 2006) and the outside world serve 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 creates 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 dynamic digital tools to become participatory and justice oriented citizens.

Conclusions

The pedagogies adopted to support and scaffold civic engagement favor interactive, networked activities often communicated through participatory media such as videos shared across online networks Frydenberg, (2006). At the practical level, online environments may offer an expanded notion of civic behavior and thereby extend the interests of many students for whom citizenship holds little appeal. In this way, citizenship skills may be learned in conjunction with literacies that enable participation in global networks. For example, knowledge, expression, content creation, organization and action skills have value as lifelong learning skills and as media literacy skills. With respect to what kinds of engagement experiences are available online, it is clear that digital media and web networks offer great potential for reinvigorating youth participation (Iyengar and Jackman, 2003)

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