

## **Social media in higher education: A look at participatory culture in graduate coursework**

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Article abstract

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# Social media in higher education: A look at participatory culture in graduate coursework

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## Abstract

Society has become fascinated with web-based social media. Recently, aspects of social media environments such as participatory culture, new media digital literacies, and connectivism have been increasingly investigated. However, current university policies often restrict, if not forbid, the use of social networking sites in class. For professors seeking to introduce social media into their teaching practice, these restrictive policies can make it difficult to teach with and about social computing and computer-supported collaborative work. This descriptive paper presents the experiences of two professors who integrated Web 2.0 practices into their respective graduate-level education courses titled Social Computing and Computer-Supported Collaborative Work and Web 2.0 = Pedagogy 2.0? and describes their underlying theories and concepts. Subsequently, the courses' rationales theoretical underpinnings, and teaching approaches are delineated, and implementation strategies are suggested.

## Keywords

social media ; higher education; teaching-Web 2.0 ; technology integration; curriculum

## Résumé

Il ne fait aucun doute que les médias sociaux soulèvent beaucoup d'intérêt au sein de notre société. Dans la dernière décennie, plusieurs chercheurs se sont penchés sur de nombreux aspects relatifs aux médias sociaux, tels que la culture participative, les littératies numériques et le connectivisme. Malgré cet engouement pour les médias sociaux et leur potentiel, les présentes politiques universitaires sont souvent restrictives à l'égard de l'usage des technologies de réseautage social dans la salle de classe. Pour les professeurs qui souhaitent intégrer les problématiques des médias sociaux dans leur pédagogie, les politiques restrictives tendent à contraindre les types d'enseignements qui peuvent être faits avec les médias sociaux comme le travail



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collaboratif en ligne. Dans cette foulée, cet article décrit les expériences de deux professeures qui ont intégré des pratiques pédagogiques qualifiées de « pédagogie Web 2.0 » dans deux cours au cycle supérieur, soit *Social Computing and Computer Supported Collaborative Work*, et *Web 2.0 = Pedagogy 2.0?* Les fondements théoriques et pratiques des cours sont d'abord présentés et sont suivis des méthodes utilisées pour assurer une relation enseignement-apprentissage avec les étudiants. L'article conclut avec des suggestions pour utiliser les médias sociaux dans des cours universitaires.

### Mots clés

médias sociaux; études supérieures; enseignement Web 2.0; intégration de la technologie; cursus

### Introduction

The import and impact of social media are numerous. Growing numbers of researchers and practitioners in and outside the education field are examining the related issues, including information privacy (identity theft, data mining, public-private hybridity), online security (harassment, bullying, cyberstalking), behavioral changes (multiple or fragmented identities, social media addiction), and how we do and do not pay attention to media (continuous partial attention, multitasking). Given that social media are increasingly permeating many aspects of students' personal and professional lives, higher education must cast a critical light on these issues. Yet, despite the pervasiveness of social media, little is known about the integration of social media in higher educational contexts.

Some universities have policies in place to restrict, if not forbid, the use of social networking sites in the classroom. This poses critical problems for professors who want to introduce the issue into their courses. For example, in

2008, Concordia University blocked wired access to Facebook. As Michael Geist notes, the university's move was due to "concerns that the continuing reliability of the Concordia network could be compromised because of spam, viruses and leaks of confidential information related to Facebook use" (Geist, 2008). Meanwhile, according to a CBC article, professors remained divided on the wise use of such social networking sites in the classroom (Bowman, 2009). In this article Bowman cited Carleton Professor Tim Pychyl who claimed that Facebook was like a black hole, while Concordia Professor Ann-Louise Davidson argued that Facebook could be used wisely in the classroom. Such restrictive policies render teaching with and about social computing and computer-supported collaborative work extremely difficult. Yet research indicates that social media environments are the most effective (creatively and critically) when operated within open educational settings. This means classroom environments where students (both individually and collectively) identify the problematic, design the research project, and attempt to solve complex, often ill-structured problems.

### Open Networks

It stands to reason—at least in terms of coherence—that social media, or openly designed participatory environments, would be most effective (creatively and critically) and perhaps most perilous, when operating within open educational contexts. Emerging learning theories such as connectivism and connective knowledge (Siemens, 2005) as well as research initiatives such as The Open Learning Network (<http://www.olnet.org/>), Howard Rheingold's Participatory Media Literacy Project (<https://www.socialtext.net/medialiteracy/index.cgi>),

and Project New Media Literacies (<http://www.newmedialiteracies.org/>) advocate an open networking approach outlined as follows:

Connected learning environments are designed around networks that link together institutions and groups across various sectors, including popular culture, educational institutions, home, and interest communities. Learning resources, tools, and materials are abundant, accessible and visible across these settings and available through open, networked platforms and public-interest policies that protect our collective rights to circulate and access knowledge and culture. Learning is most resilient when it is linked and reinforced across settings of home, school, peer culture and community. (Connected Learning, n.d.)

In open networks, learners work individually and collectively to identify the research question, design a project, and attempt to solve complex, often ill-structured problems. Often referred to as *Learning 2.0*, this approach requires learners to acquire new skills such as transmedia navigation, prosumerism, curation engagement (Jenkins, Puroshotma, Weigel, Clinton, & Robison, 2009), wise public participation principles (International Association for Public Participation), and how to participate as if your presence matters (Jenkins, 2006; Noubel, 2004; Shirky, 2008, 2010). However, actualized learning through self- and group-regulated work using social media can be virtually impossible in higher education settings where restrictions create risks for those who break the rules.

In the first section of this paper, we briefly explain the term Web 2.0. We then examine how Web 2.0 can be integrated into higher education. In the second section, we describe two Web 2.0 oriented courses and explain the

theoretical underpinnings of their design. We conclude with recommendations for professors who would like to start using Web 2.0 technologies in their university courses.

### **What is Web 2.0?**

The term Web 2.0, first coined by Tim O'Reilly in 2005, denotes the emergence of evolving digital architectures as well as the use of these technologies by millions of knowledge producers, who create what is referred to as user-generated content (UGC) (O'Reilly, 2005). Some examples of these technological characteristics are online databases and services, which provide greater access to a larger variety and scope of digital content; simple architecture, which offers user-friendly interfaces; light applications for easy sharing of information via intuitive modular elements; participatory architecture, which encourages users to enhance the application while they use it; and mixable data with mash-up capability.

Web 2.0 is also defined by its social aspects, as it uses collaborative creation of content for and by the many. Content production is unfinished and ongoing, or in a state of "perpetual beta" and reiterative legitimacy built through repetitive linking via phenomena such as social categorization, known as folksonomy or tagging (O'Reilly, 2005). Web 2.0 is further characterized by voting practices and visitation frequency. One of the commonalities of these technological and social practices is that they are mitigated by the collective actions of online user communities rather than individual users (Shirky, 2008). Thus, Selwyn (2011) notes:

This sense of Internet use now being a participatory and collective activity is reflected in the language used to describe social media applications. Social media use is often described in terms of collaboration, conviviality and

creativity. Social media applications are seen to be open rather than closed, bottom-up rather than top-down. Social media users go online to share and rate, mashup and remix, friend and trend. The ways in which the Internet is imagined in 2012 is certainly very different to that of 10 years earlier – hence the coining of the label web 2.0. (p. 1)

### Web 2.0 and Higher Education

An emerging literature of small-scale, empirical studies addresses the learning gains and benefits of social media. For example, Junco, Heiberger, and Loken (2010) demonstrated the positive effect of Twitter use on college student engagement and grades. A recent study by Hung and Yuen (2010) determined that social networking sites can engender “favourable feelings regarding learning experiences” (p. 703). As Selwyn (2011) notes:

Rather than being wholly good or wholly bad for higher education, social media are perhaps best understood in more ambiguous terms when one considers the complex and often compromised realities of the ways students actually use social media within educational contexts and in their wider everyday lives (p. 8).

The literature on higher education and Web 2.0 technologies suggest three ways of examining the potential significance and implications of social media in higher education. First, there is the changing nature of our students. The Net generation is used to networking, using the Internet as a repository of information that they can consult when constructing knowledge, and executing tasks collaboratively (Oblinger & Oblinger, 2005; Selwyn, 2011; Ulbrich, Jahnke, & Martensson, 2010). Second, learning through accomplishing tasks or exploring problems in networks is reflected in the notion of connectivism. The latter is an emerging learning theory

which posits that decisions need to be made on information that might change: knowledge production will change depending on the group, and learners should be ready to make distinctions between valuable information and information that is unnecessary in the present context (Siemens, 2005). Similarly, Downes (2005) argues that, in a connectivist perspective, learners must learn to aggregate massive amounts of information, filter what they think is useful, and create some meaning with this information. Third, with the advent of social media, our conceptualization of the higher education classroom needs to change. As learners co-construct knowledge through social media, they are no longer passive consumers of information, such that learning becomes an authentic participatory process (McLoughlin & Lee, 2010). As Selwyn (2011) notes:

In this sense, tensions remain between those who believe that social media can be used to strengthen and improve the higher education institution in its current form, and those who believe that social media exist to disrupt (and ultimately replace) the university altogether (p. 4).

These three ways of looking at the changing relationship between social media and education support the need to examine the relationship between social media and educational practice. Because the empirical literature on Web 2.0 integration in higher education is relatively sparse, a gap remains between the discourse pertaining to Web 2.0 and evidenced-based (empirical-foundational) research studies.

In an attempt to bridge this gap, we discuss the integration of Web 2.0 related theory and practice within two graduate courses. We subsequently offer suggestions as to how to begin

to integrate social media into higher education coursework. A glossary of terms used in this article is provided at the end of the text.

## Walking the Talk in Two Graduate Courses

### Course One: Social Computing and Computer-Supported Collaborative Work

The first graduate course, Social Computing and Computer-Supported Collaborative Learning/Work, emerges from two different yet interrelated research domains: educational technology and communities of practice. From a theoretical standpoint, educational technology is “the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” (Association for Educational Communications and Technology, 2008, p. 1). Traditionally, educational technologists seek to improve learning and performance by designing instructional and non-instructional interventions. Under this traditional view of educational technology, the work can be done individually or in groups. This approach to group work fosters cooperation between members, but remains somewhat linear –that is, everybody must work toward the same goal. In past decades, some researchers tried to push the limits of group work by exploring different models designed to foster collaboration within communities. The term “communities of practice” (CoP) was coined by Lave and Wenger (1991). Wenger (2006) describes CoPs as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”. According to Wenger, there are three crucial elements in a CoP: 1) the domain, which refers

to the shared interest of the group; 2) the community, or the activities and discussions during which the group builds relationships and learns from each other; and 3) the practice, which includes a shared repertoire of resources that the group uses to solve problems. With some effort, the two domains of educational technology and CoPs can be combined. In terms of course activities, social media tools can become both the bonding agent and the enabler between these two domains, providing a strong framework is used.

### Critical theory via Freire

In the *Pedagogy of the Oppressed* (published in Portuguese in 1968, then translated to English in 1970), Freire (1970) argues for an education that fosters *conscientização*, also referred to as critical consciousness, conscientization, or consciousness raising. Freire despised the oppression he witnessed in education and what it did to students. He saw people feeling so dehumanized that not only did they fear freedom, but they also internalized the image of the oppressor to the point of thinking that oppression itself was normal (i.e., a norm). The oppressed either tend to feel that they must be oppressed (remain in their position) or that they must break out of the shackles by becoming the oppressor (switching positions). However, Freire argued that the oppressed can recognize the causes of oppression, and that they should contribute to the quest for a better humanity. The key question that Freire then asks is: How can the oppressed participate in the pedagogy of their liberation? This participatory appeal becomes even more significant in the case of education based on what Freire calls the “banking concept of education,” by which the students must be obedient. They are to listen, memorize, and repeat. In this receptive mode,

students become collectors and cataloguers of the knowledge that they acquire. They can then present themselves as knowledgeable to those who do not possess this knowledge. According to the Freirian perspective, one way to liberate students is to make education “dialogical,” and to present problems that learners need to solve in order to overcome their stance as oppressed persons.

In line with Freire’s critical, participatory posture, this course was designed to ensure that the students would be faced with and participate within relevant on-line community problems. To become contributors with respect to solving real, in this case on-line problems, the students enrolled in this course were asked to reinvest what they learned in class (theoretical aspects of on-line stewardship) into their on-line community. As evidence of their on-line participation, they had to come to class with the problems they were facing in their on-line community. In addition, they had to explain how they were collaboratively developing potential solutions, as a participant rather than in the position of a knowledgeable expert.

In this course, the role of the professor was to ensure that students knew they had to come up with solutions with others, and that answers were not going to come from the professor. Rather, “results” would come from their own engagement in line within a particular community.

Overall, the *modus operandi* of the course was to look at the production processes of co-creating solutions within a group, to develop awareness of these processes, and to give power over to the learner (so they could take control of their technological stewardship). The foundational claim is that production processes and relevant knowledge development therein have to happen in context.

### **The Underlying Theoretical Rationale for This Course**

The question underlying the course was: How can we, as educational technologists, help design solutions to problems that are relevant for online communities? In this course, co-designing relevant solutions with online communities was grounded in Wenger’s work on CoPs.

How the course worked. To provide students with opportunities to enhance their computing skills and their understanding of educational theory, students were to develop the competency of what is called technological stewardship –that is, offering to help on-line communities facing problems that require concrete technological solutions (Wenger, Smith, & White, 2009). To develop their technological stewardship, students had the choice of participating in an on-line community of practice or of engaging in what is referred to as legitimate peripheral participation, which means to simply lurk within an on-line community of practice (CoP) and observe the domain, the community and its practice (Wenger, 2006).

During the first week of the course, students were encouraged to join online communities with which they shared similar interests, not necessarily in education. Students joined communities interested in various aspects of life, including new motherhood, heavy metal music, jade trading, instructional design, tele-obstetrics, Chinese cooking, pedagogical integration of technology in Ecuador, community theater, immigrant parents, literacy, global peace, and so on. Students were required to keep detailed notes on what occurred in the online communities for at least six weeks. These written reports gave the students a substantial information base from which to begin understanding and designing solutions to various problems. However, according to the principles

of technological stewardship, solutions were not to be proposed from the outside in. Therefore, the students had to design solutions in collaboration with the community. In order not to be seen as experts, the students did not present themselves as tech stewards. Instead, they presented themselves as members of the community who were inquiring into collaborative design solutions.

Using a problem-solving approach to education, students were asked to write a mid-session analytical and reflective report of their activities within the online CoP, in which they demonstrated insight into how problems could be solved from within the community. The idea was to shed light on how the community problems they encountered might be solved from the perspective of a lurker or tech steward. In addition, students offered recommendations for others who might want to become tech stewards in similar communities.

The final assignment challenged students to produce a model of social learning in Web 2.0 and to create a visual representation of the interactions that took place in their community. Students had to justify their own learning according to their interpretation of these interactions.

At the end of the course, the students collaborated on a Pecha Kucha presentation that enjoyed great success at the Education in a Changing Environment 2011 conference in Salford, England. The Pecha Kucha presentation reported the collective experience of the social computing class. The presentation (Davidson et al., 2012) described the research question identified by the professor and the students, analyzed the content as well as the results of the assignments, provided directions for reflection on authentic pedagogy by the students, and of-

fered transferable lessons beyond the specific social computing course. In addition, many of the students who took the course disseminated their coursework at local student symposia and national education conferences.

### **Course Two: Web 2.0 = Pedagogy 2.0?**

Web 2.0 is often discussed in terms of differing relationships, or relationships in which power is said to operate differently, notably more horizontally. These horizontal Web 2.0 relationships are often referred to as horizontal assemblages, P2P, many-to-many, or participatory culture. According to Castells (2010), the network character of Web 2.0 exchanges and interactions “is enacted, as a matter of fact devised, decided on and implemented by social actors” (p. 415). In a networked society, one of the key foci is:

[...] on the user — and specifically on the collaboration among users. These collaborators are now empowered to create content and services themselves, and are literally defining the kind of information that they want on the web and what services they want websites to provide. Content owners now share, socialize, network, and engage in e-commerce as they see fit (Dialogic, 2012).

The principal objective of the graduate course Web 2.0 = Pedagogy 2.0?, was to enact a Web 2.0-like investigation around the question of whether and how the then (2010) emerging term of Web 2.0 might necessitate new educational practice, or a Pedagogy 2.0. Web 2.0 was both the course end and it’s means. The overall goal was to collaboratively inquire as to what changes, if any, were occurring on the Web and to examine if change claims were a matter of degree (change as nuance), or rather, a change in kind (change as a different entity).



Presumably the potentially differing scales of change associated with Web 2.0 practice might invite corresponding scales of change in pedagogy.

### The Course Question

The theoretical underpinning of the course was social constructivism enacted via collective and connective problem posing using generative questions. An appeal to generative questions is often associated within learning approaches such as “active inquiry”, “inquiry based learning” or “open learning”. In active, open inquiry questions tend to play a different role than they typically might usually do : in open, active inquiry questions are not necessarily posed to get answers. According to an article “The Power of Questions” by the Co-Intelligence Institute, active inquiry is not so interested in getting answers and it is certainly not interested in getting the “right” answer. “The main point is that well-crafted questions elicit new awareness and feelings of empowerment. Any answers that emerge are icing on the cake. Often a powerful question changes the questioner, as well.”

One way to portray the enhancement of empowerment via collective problematisation supported by technological open architectures is that of a triple network knowledge ecosystem. According to Community Intelligence Labs (2000) a knowledge ecosystem can be understood as : “a people network of conversations creating a knowledge network of recorded insights and information supported by technology networks of hardware/software that produces value to the organization and its stake holders”. The idea of “technology as actant”- as seen in Connectivism and Actor Network Theory- , is integral to both conception, design and analysis.

This course-related quest towards the producing of value began with providing a single, unexplained, unfounded question: “Web 2.0 = Pedagogy 2.0?” The meaning of this question—whether it was relevant, and how it might be explored—was left entirely up to the students. The only guidelines were that their investigations be based on Web 2.0 applications and principles. Web 2.0 applications are said to facilitate interactive information sharing, user-centered design, and collaboration on the World Wide Web. Web 2.0 type collectives are said to uphold the following principles (Tapscott & Williams, 2008):

- a) Openness, or crowd sourcing
- b) Peering, or horizontal organization, whereby users are free to change and develop productions and make them available to others
- c) Sharing, or freely sharing some ideas (General Public License) while maintaining some degree of control over others (Creative Commons License)
- d) Acting globally, in terms of a global network: “...we have a vital role to play in strengthening the links between community organizations working for human rights and peace, and supporting and shaping the emerging concepts and institutions of global governance” (Charter of the Global Greens, 2001).
- e) To participate as if your presence matters (Shirky, 2008, 2010).

To be coherent with such open, linked, learner centered attributes and principles , the methodological investigative practice suggested to students was that of Participatory Action Research (PAR). PAR involves endeavours to involve all relevant parties in actively examining

t current state of affairs, to articulate what they deem as problematic and to coelaborate a working plan. For exemple, in terms of what might constitute a problem PAR participants “critically reflect on the historical, political, cultural, economic, geographic and other aspects of a given problem” (Wadsworth, 1998). PAR is not research followed up by action: “it is action itself, which is researched, changed and re-researched, within the research process, and by the participants” (Wadsworth, 1998). PAR is not simply an “exotic variant of consultation”, “nor can it be used by one group of people to get another group of people to do what is thought best for them” (Wadsworth, 1998). PAR follows a “genuinely democratic and non-coercive process whereby those to be helped determine the purposes and outcomes of their own inquiry” (Wadsworth, 1998).

### Participant researchers

Twenty-three graduate students (<http://fr.curriculumforge.org/PagesPersonnellesWeb2Péd2Hiv10>) at varying stages of graduate studies in a variety of education programs (most of whom were not studying educational technology, and therefore knew little about Web 2.0) collaboratively addressed the initial course question “Web 2.0 = Pedagogy 2.0?”

### Technologies used

Throughout the fifteen-week course, three main technologies were used:

1. *Wiki*. A Wiki was the main Web 2.0 application used. The students’ asynchronous “wiki work” is located at the following address: <http://fr.curriculumforge.org/Web2P%C3%A9dagogie2Hiv10>
2. *CmapTools*. To organize, analyze, and synthesize Web 2.0 research information, students constructed interactive concept maps using CmapTools. These interactive concept maps are also available on the aforementioned wiki site.
3. *Google documents*. The students’ final collaborative text was produced as a Google document. Google documents allow learners to work synchronously on a shared text. The text was subsequently published online. Additional information on their work is available at: <http://www.netpublic.fr/2010/09/web-2-0-pedagogie-2-0-cours-et-synthese-collective/>.

All the students signed ethics release forms affirming that their collective work could be published under a Creative Commons License.

### Evaluation. For the evaluation, students were asked to carry out two tasks:

- a) *Produce two texts*. Students had to produce a text in which they presented and justified their contribution to the course investigation, and a second text in which they provided individual descriptions of their understanding of and positioning within the problem (their individual answer to the question: Web 2.0 = Pedagogy 2.0?).
- b) *Reflection*. Students reflected on their experience in terms of the highly social constructivist nature of the course during a videotaped interview conducted by their course colleagues. The students’ differing experiences of the course are available at the following address: <http://fr.curriculumforge.org/VideoWeb2P%C3%A9dagogie2Hiv10>

## Lessons Learned

While the rewards of enacting this “Web 2.0 coursework” were noteworthy (extensive concept maps and a 65-page text of this breath and depth would have been impossible for any one or even several students, especially given the time constraints), so, also, were the difficulties. Three difficulties will be briefly outlined –and somewhat addressed below.

First, graduate school demands for individual autonomy in light of increasing calls for collaborative practice (digital or otherwise) are creating tensions. For example, one of the tensions in such collective networking is the often unequal relationship between any given participant and the emerging level of the group, referred to as Holopticism. “Small World Networks,” which are characterized by being both densely and sparsely connected at different scales, offer an interesting starting point to address this issue when operationalizing a collective “working-of-the-net.” Shirky (2008) notes: “You let the small groups connect tightly, and then you connect the groups. But you can’t really connect groups – you connect people within the groups. Instead of one loose group of twenty-five, you have five tight groups of five” (Shirky, 2008, p. 215).

Second, co-elaborative coursework (course design created for-and by-the group) evokes extremely important psychosocial issues. Given the dynamic, destabilizing psychosocial aspects of enacting collective creative processes (again, in terms of both what is to be created, how, why and by whom) should be highlighted throughout the course. Piirto (2010) outlines five core attitudes (Naiveté, Risk-taking, Self-discipline, Group Trust and Tolerance for Ambiguity), seven I’s (Inspiration, Insight, Intuition, Incubation, Improvisation, Imagery,

Imagination) and other core ideas to begin considering how students may -and may not-be experiencing-and able to enhance a creative process.

Third, introducing “horizontal assemblages” in higher education course-work may help bring oppressive and productive - and extremely dynamic - power operations to the foreground. Introducing power analytics, i.e., how power is both exerted and contested, can be examined in terms of Tuckman’s model of the stages of group development. The model focuses on five stages of power analytics: 1) forming, in which participants identify the boundaries of both interpersonal and task behaviors; 2) storming, in which participants emotionally resist group influence and task requirements; 3) norming, in which resistance is overcome, in-group feelings and cohesiveness develop, and personal opinions are expressed; 4) performing, in which group energy is channeled into the task, structural issues have been resolved, and structure can now become supportive of task performance; and 5) adjourning, which entails the termination of roles, the completion of tasks and the reduction of dependency (Tuckman & Jensen, 1977). In short, Tuckman et al. (1977) maintain that a group must pass through these five stages in order to grow and achieve its collective goal.

## Concluding Remarks

The reader should keep in mind that the courses described in this paper are not meant to serve as examples of best practices. However, they were designed with various theoretical ideals in mind, including Freirean pedagogy, participatory action research, and collaborative Web 2.0 work. Students had to become well versed in the use of various technologies

and learn to navigate through their functions with ease. They also had to engage as critical consumers of information, as well as active producers of information. Moreover, they had to engage in creating and maintaining artefacts. In other words, they had to learn how to make their efforts useful to the community that could benefit from them, and how to ensure that what they learned could be reusable and maintained. This suggested, as Shirky (2008, 2010) mentioned, that learners needed to participate as if their presence mattered. This was the only way to create user-generated content, a criteria that O'Reilly (2005) considers to be the most important of Web 2.0.

In addition, the format of our courses was a good fit with the underlying postulates related to exploiting Web 2.0 in higher education. It was a good fit in terms of letting “net generation” learners construct knowledge by consulting the Internet and working collaboratively to execute tasks and solve problems, as stressed by Ulbrich, Jahnke, and Martensson (2011) and Selwyn (2011).

The assumptions were that students should learn through a network. In the first course (Social computing and computer-supported collaborative learning/work), the network consisted of online communities outside the classroom. Students began with legitimate peripheral participation, as suggested by Wenger (2006), and gradually became part of the core group, as active members of the communities in which they exercised their technological stewardship skills, as Wenger, Smith, and White (2009) suggest. In the second course (Web 2.0 = Pedagogy 2.0?), the network itself was studied. This is consistent with the assumptions of connectivism, as described by Siemens (2005). Moreover, both courses required students to filter in-

formation, aggregate it, and decide how to reuse or repurpose it. This is consistent with Downes' (2005) description of connectivism. We noted that when students were deeply focused on their tasks, the use of social media did not disrupt classroom functioning. Instead, it became a medium for meaningful learning, contrary to the concerns raised by Selwyn (2011).

The authors wanted to share their experiences so that other researchers and practitioners might be encouraged to test the potential of Web 2.0 technologies to potentially improve learning. Participatory culture in higher education needs more professors 2.0.

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## References

- Association for Educational Communications and Technology. (2008). Definition. In A. Januszewski & M. Molenda (Eds.), *Educational technology: A definition with commentary* (pp. 1-14). New York, NY: Routledge.
- Balan, S. (2010). M. Foucault's view on power relations. *Cogito*, 2(2). Retrieved from the journal's website: <http://cogito.ucdc.ro>
- Bowman, J. (2009). *Facebook in the classroom, bad idea?* Retrieved July 15, 2013 from: <http://web.archive.org>
- Bystrom, R. (2006, Aug. 16). *Response to "Connectivity ramp, CI, and Jaron Lanier"* [Blog post]. Retrieved August 27, 2013 from: [http://blogofcollectiveintelligence.com/2006/08/06/connectivity\\_ramp\\_ci\\_and\\_jaron\\_1/#more-120](http://blogofcollectiveintelligence.com/2006/08/06/connectivity_ramp_ci_and_jaron_1/#more-120)
- Castells, M. (2010). *The power of identity* (2nd ed.). Chichester, UK: Wiley-Blackwell.
- Community Intelligence Labs. (2000). Retrieved August 28, 2013 from *Introduction to Knowledge Ecology* <http://www.co-i-l.com/coil/knowledge-garden/kd/introke03.shtml#slide7>

- Connected Learning. (n.d.). *Connected learning principles*. Retrieved August 27, 2013 from : <http://connectedlearning.tv>
- Davidson, A.-L., Gallant, T., Naffi, N., Gendron, R., Smith, J. C., & Kearney, M. (2012). *Designing a social computing course through the use of social computing characteristics - the medium is the message* [PowerPoint]. Retrieved from: <http://fr.slideshare.net>
- Dialogic. (2012). *The emergence and empowerment of Web 2.0*. Retrieved from: <http://www.dialogic.com>
- Downes, S. (2005). An introduction to connective knowledge. In T. Hug (Ed.), *Media, knowledge & education. Exploring new spaces, relations and dynamics in digital media ecologies* (pp. 77-102). Innsbruck, Austria: Innsbruck University Press. Retrieved from the author's website: <http://www.downes.ca>
- Downes, S. (2012). *Connectivism and connective knowledge. Essays on meaning and learning networks*. Retrieved from the author's website: <http://www.downes.ca>
- Foucault, M. (1980). *Power/Knowledge: Selected interviews and other writings, 1972-1977* (C. Gordon, Ed.). New York, NY: Pantheon Books.
- Freire, P. (1970). *Pedagogy of the Oppressed*. Translated by Myra Bergman Ramos. New York: The Seabury Press, A Continuum Book.
- Charter of the Global Greens (2001). *Global Green Charter in English*. Retrieved from <http://www.globalgreens.info/globalcharter.html>
- Geist, M. (2008). *Concordia blocking access to Facebook* [Blog post]. Retrieved from the author's blog: <http://www.michaelgeist.ca>
- Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Learning, teaching, and scholarship in a digital age. Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, 38(4), 246-259. doi:10.3102/0013189X09336671
- Hung, H.T., & Yuen, S. C. (2010). Educational use of social networking technology in higher education. *Teaching in Higher Education*, 15(6), 703-714. doi:10.1080/13562517.2010.507307
- Jenkins, H. (2006). *Convergence culture: Where old and new media collide*. New York, NY: New York University Press.
- Jenkins, H., Puroshotma, R., Weigel, M., Clinton, K., & Robison, A. J. (2009). *Confronting the challenges of participatory culture: Media education for the 21st century*. Cambridge, MA: MIT Press. Retrieved from: <http://mitpress.mit.edu>
- Junco, R., Heiberger, G., & Loken, E. (2010). The effect of Twitter on college student engagement and grades. *Journal of Computer Assisted Learning*, 27(2), 119-132. doi: 10.1111/j.1365-2729.2010.00387.x
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Learning Commons. (n. d.). *Supporting student collaboration through the use of wikis*. Retrieved from the University of Calgary Teaching & Learning Centre website: <http://commons.ucalgary.ca>
- McLoughlin, C., & Lee, M. J. W. (2010). Personalized and self-regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology*, 26(1), 28-43. Retrieved from the journal's website: <http://www.ascilite.org.au/ajet>
- Noubel, J. F. (2004). *Collective intelligence, the invisible revolution*. Retrieved from: <http://www.thetransitioner.org>
- Oblinger, D., & Oblinger, J. (2005). *Educating the Net Generation*. Retrieved from: <http://net.educause.edu>
- O'Reilly, T. (2005). *What is web 2.0: Design patterns and business models for the next generation of software* (section 7, Rich user experiences). Retrieved from the author's website: <http://oreilly.com>

- PechaKucha. (2013, June 20). In *Wikipedia*. Retrieved from <http://en.wikipedia.org>
- Piirto, J. (2010). The five core attitudes, seven I's and general concepts of the creative process. In R. A. Beghetto & J. C. Kaufman (dir.), *Nurturing creativity in the classroom* (pp. 142-171). Cambridge, MA: Cambridge University Press. Retrieved from the author's website: <http://personal.ashland.edu/jpiirto>
- Selwyn, N. (2011). *Social media in higher education*. In *The Europa World of Learning* (62nd ed.). Oxford, U.-K.: Routledge. Retrieved from: <http://www.educationarena.com>
- Shirky, C. (2008). *Here comes everybody: The power of organizing without organizations*. New York, NY: Penguin.
- Shirky, C. (2010). *Cognitive surplus: Creativity and generosity in a connected age*. New York, NY: Penguin.
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology & Distance Learning*, 2(1). Retrieved from the journal's website: <http://www.itdl.org>
- Smith, J. D. (2006). *Definition of technology steward*. Retrieved from <http://learningalliances.net/2006/12/definition-of-technology-steward>
- Tapscott, D., & Williams, A. D. (2008). *Wikinomics: How mass collaboration changes everything*. New York, NY: Penguin.
- The Power of Questions. Retrieved August 29, 2013 from *Co-Intelligence Institute* <http://www.co-intelligence.org/P-Questions.html>
- Tuckman, B. W., & Jensen, M. A. C. (1977). Stages of small group development revisited. *Group and Organizational Studies*, 2(4), 419-427. doi:10.1177/105960117700200404
- Ulbrich, F., Jahnke, I., & Martensson, P. (Eds.). (2010). Knowledge development and the Net generation [Special issue]. *International Journal of Socio-technology and Knowledge Development*, 2(4). doi:10.4018/IJSKD

- Wadsworth, Y. (1998). What is participatory action research? *Action Research International*. Paper 2. Retrieved from the journal's website: <http://www.aral.com.au/ari>
- Wenger, E. (2006). *Communities of practice. A brief introduction*. Retrieved from the author's website: <http://www.ewenger.com>
- Wenger, E., Smith, N., & White, J. D. (2009). *Digital habitats: Stewarding technology for communities*. Portland, OR: CPsquare.
- Collective Intelligence (n.d.). In *Wikipedia*. Retrieved August 27, 2013, from [http://en.wikipedia.org/wiki/Collective\\_intelligence](http://en.wikipedia.org/wiki/Collective_intelligence)

## Glossary

**Connectivism:** “The thesis that knowledge is distributed across a network of connections, and therefore that learning consists of the ability to construct and traverse those networks.” (Downes, 2012, p. 9)

**Curation engagement:** How to become invested in collecting, annotating and archiving data for self as well as others.

**Holopticism:** “The link between individuals and the whole -- provide players the capacity to operate in a sovereign, independent way because they know what to do for the sake of the whole and the sake of themselves. Therefore there is not only horizontal transparency (perception of every other participants), but also a vertical communication with the emerging Whole.” (Noubel, 2004, p. 8)

**Learning 2.0:** Notably, interdisciplinary, creative, global collaboration skills that systematically, read architecturally, empower those who have access to the WWW.

**OLnet:** “An international research hub for aggregating, sharing, debating and improving

Open Educational Resources (OER). The aim of OLnet is to gather evidence and methods about how we can research and understand ways to learn in a more open world, particularly linked to OER, but also looking at other influences. We want to gather evidence together, but also spot the ideas that people see emerging from the opportunities.” (OLnet, n. d.)

**PechaKucha:** “A presentation methodology in which 20 slides are shown for 20 seconds each (six minutes, 40 seconds in total).” (Wikipedia, 2013)

**Power:** According to Foucault (1980, p. 98), “Power must be analyzed as something which circulates, or as something which only functions in the form of a chain. Power is employed and exercised through a net-like organization. Individuals are the vehicles of power, not its points of application.” According to Balan (2010), “This way of understanding power has two key features: a) power is a system, a network of relations encompassing the whole society, rather than a relation between the oppressed and the oppressor; b) individuals are not just the objects of power, but they are the locus where the power and the resistance to it are exerted” (p. 35) “Web 2.0” is supposedly created for-by the people (caveat: those with access and digital literacy skills).

**Technology stewards:** “Technology stewards are people with enough experience of the workings of a community to understand its technology needs, and enough experience with technology to take leadership in addressing those needs. Stewardship typically includes selecting and configuring technology, as well as supporting its use in the practice of the community.” (Smith, 2006)

**Web 2.0:** Whether the “Web 2.0” actually exists as a singular entity (as opposed to “Web 1.0”) is not in question here. For the purposes of this text the term Web 2.0 refers to discursive phenomenon whose attributes vary since the terms initial use by O’Reilly (2005) in 1994. To see what are considered some Web2.0 design patterns, consult a list by Christopher Alexander presented on O’Reilly’s web site (O’Reilly, 2005). For a more complete description of Web 2.0 and its uses, see “Learning, Teaching, and Scholarship in a Digital Age” (Greenhow, Robelia, & Hughes, 2009)

**Wiki:** “A wiki is a collection of web pages that can be edited by anyone, at any time, from anywhere.” (Learning Commons, n. d., p. 1)