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Promoting connections through Community Equity

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Abstract

Following on from previous work (Johnson, 2008a, 2008b), this paper explores a central construct of the 2001 definition of networked learning, 'promoting connections'. A significant percentage of higher education students do not engage with information technology which stymies their acquisition of working knowledge of IT and digital literacy and hampers their ability to benefit from programmed networked learning opportunities. The author's journey to explore Community Equity (Reiser, 2009a) as an answer to this challenge is briefly described. The system has not been used in higher education yet, its commercial origins are belied by the fact that the software is open source. Community Equity, or CEQ, is proposed as a system that could help to incentivise and measure networked learning in the context of group-based learning in higher education. CEQ plugs into the Atlassian Confluence enterprise wiki platform and counts primary activity, such as sharing a Web link, authoring a blog post or contributing to a wiki. Various proposals have been made concerning how usage data, or analytics, might benefit learners. By contrast, CEQ also takes account of whether the primary activity sparks secondary activity, such as visiting, responding to, and rating the primary activity. It is also possible to include activity from 3rd party social networking sites. Personal CEQ scores for 'Contribution Equity' and 'Participation Equity' are displayed confidentially to individual students, and their own ranking is also shown alongside a top-ten leader board which is visible to all. This is clearly in advance of the metrics normally available through Virtual Learning Environments (VLE). It offers to motivate engagement in a variety of ways that include 'game-based', 'psycho-social' and economic motivation.

Further work is required to explore student responses to CEQ: whether assessment credit would be required to secure engagement from all students, or whether merely publishing the CEQ scores is sufficient to make networked learning activity a routine part of their daily lives.

The possibilities afforded by CEQ allow us to ask further questions about networked learning as defined in 2001, since, for example, neither CEQ nor the definition make any claims about the *quality* of the connections or that which travels along them.

This paper is presented in the hope of stimulating debate and developing ideas around these and other related questions central to the theory and practice of networked learning.

Keywords

Networked Learning, Promoting Connections, wiki, collaboration, problem-based learning, learning analytics, social capital, engagement,

Introduction

Networked Learning has been defined as:

Learning in which information and communications technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources. (Goodyear & NLinHE Team, 2001 p.9)

This definition has proved durable and useful over the last ten years. However, as I have sought to operationalise this definition, my own experiences, and those of others in the nursing literature (McVeigh, 2009; Moule, Ward, & Lockyer, 2010), indicated there was a fundamental flaw, a strong assumption implicit in the definition: student engagement. Trowler defines student engagement as:

... concerned with the interaction between the time, effort and other relevant resources invested by both students and their institutions intended to optimise the student experience and enhance the learning outcomes and development of students and the performance, and reputation of the institution (Trowler, 2010, p. 3)

I argued previously (Johnson, 2008a) that the construct ‘promoting connections’, within the definition of networked learning, was open to an interpretation which encouraged consideration of why a student would give time and effort to engage with ‘networked learning’. I wanted to shift the focus from ‘*If you build it they will come*’, to ‘If you build it, why should they come?’, ‘How will you ensure they all do?’, and, ‘What will characterise these people when they *have* engaged and become “Networked Learned”?’ This paper picks up from these themes, to ask, ‘what constitutes networked learning activity?’ If it were possible to authentically specify and capture networked learning activity, could it also be measured and could this measure incentivise engagement?

One common but blunt measure of activity is the ‘hit count’ which merely indicates that a user has clicked on the particular hyperlink. The Blackboard™ virtual learning environment’s access reports are scarcely more than this, giving no indication of how the student has engaged with the target of the link in question. Recently, many learning technologists have turned their attention to how usage data can be harvested or ‘mined’ in more sophisticated ways to enhance learning. Social Network Analysis (SNA) featured prominently at the last Networked Learning Conference: Dawson, Bakharia, & Heathcote (2010), for example, offered a method of data visualisation so that tutors can evaluate the effectiveness of their learning design, and identify students at risk of becoming isolated. Fritz (2011) has created a “Check my activity” (CMA) tool for Blackboard, which allows students to compare their own activity with a summary of their peers’ activity in order to provide a point of reflective learning. In early spring 2011, Athabasca University hosted the ‘1st International Conference on Learning Analytics and Knowledge’. In this new and ill-defined area, as often happens with nascent technologies, the ability to record and measure outstrips our ability to identify and refine the best ways to use all the data at our disposal (Duval, 2011).

One step on from merely re-cycling use-data is to deliberately bring activity *and* rating data into the equation. For example, www.dbeelife.com offers users the facility to score each other’s contributions through a 5 level scoring system. The aggregate score is published as part of the users’ profile. Community Equity (Reiser, 2009a) is more sophisticated again in that it records all network activity by users and allocates differential scores to calculate an individual’s social value to that online community.

My path to Community Equity

For ten years I have sought to engage nursing and midwifery students in the meaningful application of information technology within their studies. Governments, employers and regulatory bodies, such as the NMC (Nursing and Midwifery Council), require students to graduate with sophisticated information technology skills. In spite of expectations associated with the ‘net generation’ rhetoric, of students arriving at University as ‘digital natives’, we still find them needing guidance on key academic skills, including those directly related to using information technology (C. Jones, Ramanau, Cross, & Healing, 2010; National Union of Students, 2010). It is unclear how the ‘new literacies’ (Lankshear & Knobel, 2006) some students bring with them to university complement the digital *and* academic literacies required of them in higher education: ‘highly competent users of digital technology may struggle to transfer those skills to their study’ (JISC Executive, 2009). Furthermore, there is the reality of non-engagement with learning and e-learning in particular (Johnson, 2008b; Moule et al., 2010; Selwyn, 2007) and the irony that the very students who most need to take advantage of learning opportunities for increasing their information fluency are those least likely to do so. IT knowledge is ‘working knowledge’ if anything is (Goodyear, 2002). Students need to participate in order to gain and maintain any level of IT fluency (Martin, 2002).

Neil Selwyn (2003) espoused a stratified approach to student non-engagement with IT: making engagement unavoidable because core processes were embedded within IT systems; even recognising and accepting that the status-quo may be difficult to change. Pitched somewhere between those extremes is an intervention, called ‘Health on the Web’, that requires students to form groups which then compose a wiki-page on a health-related topic of their choice. In September 2010, I blogged about what I felt was missing from the wiki platform that

students normally used (Learning Objects CampusPack Wiki). I proposed that attribution, aggregation, and peer assessment were areas which required attention in order to encourage engagement (Johnson, 2010):

- 1. Attribution.** When a wiki is used for group-based collaborative writing, authorship information is either very basic or hard to find and collate. I had observed that students were de-motivated to participate because their individual contribution is merged and lost within the work of their peers, unless they adopt a deliberate strategy to identify their work. I wanted a system that would make individual contributions apparent with ease within the context of a group presentation. This chimes with the recent ferment around ‘microattribution’ (see Fenner, 2011; Kelly, 2011) or nanopublications (see <http://nanopub.org/>) but these concepts are being discussed within a research impact and publication context.
- 2. Aggregation of networked learning activity for assessment.** Since students were strategic in targeting their learning upon what was going to bring them credit towards their degrees, I wanted to reward *participation* within the wiki, not just the final product of that participation, since participation is key to developing working knowledge in IT. Likewise, markers, when assessing contributions to a wiki, have limited information to gauge each student’s input. The evidence is often limited to hit counts, number of lines written and the page histories, which can be clumsy to look through. This inefficiency is a significant obstacle to up-scaling educational use of social media.
- 3. Peer assessment.** The CampusPack Wiki allows rating and commenting on a *page*, but not on the contribution of the individual authors. According to Ryberg and Georgsen (2010) problem-based learning, and other types of group-based learning, hold promise for engendering digital literacy, because they ‘provide good settings for engaging with digital literacy practices’ (p89) ‘...that feature processes of enquiry, and with a focus on critical knowledge production and dissemination, rather than the acquisition of a given body of knowledge’ (p93). However ‘freeloading’ is a problem as awkward in education settings as it is prosaic on the wider Internet, due to the divergent cultures of each (Dohn, 2009). This is an issue which students have to grapple with as part of a deliberately student-centred learning experience. Taking a positive angle, it prepares them for the kind of issues that teams everywhere have to deal with, not least when working in healthcare settings. However, within Higher Education, programme managers need to assure the quality of the learning experience and, without objective evidence, it can be difficult to intervene to deal with group members who refuse to engage. One option is to factor-in some kind of peer assessment for group-working elements of the activity, making group members more accountable to each other. But that can also be fraught with problems such as coercion, subjectivity and variability between groups, including the obvious strategy of group members agreeing to award each other top marks. Even if the peer assessment is anonymous, the breakdown of marks would immediately reveal any non-compliance with the agreement to give full marks. This could have dire consequences for future group cohesion. Furthermore, if this peer assessment is carried out at the conclusion of the group’s project, apart from being too late to have any remedial effect upon the individual’s performance, the recourse peers can mete out in terms of punitive marking feels more like an act of revenge: not an attitude we want to engender within an ostensibly egalitarian pedagogy!

Daly and Pachler (2011, p. 86) observe that the *collaborative* meaning-making pedagogy which underlies the use of wikis within a chronically individualistic assessment context creates an uncomfortable tension: trying to reward the group’s process *and* outputs while recognising variations between each group-member’s contributions. Dohn (2009) explicates these tensions in greater detail, showing how incompatible Web 2.0 ‘practice logics’ are with those of education: As mentioned already, free-loading is not a problem for Web 2.0 practice, so long as *someone* participates. The *quality* of content is not an issue in Web 2.0 practice because, if it matters enough, *someone* will come along and improve it eventually. The *purpose* of building content in a Web 2.0 context is to provide something of sustained use to a community of users, whereas, within education, the purpose of content creation is assessment. Dohn argues that attempts to circumvent these ‘practice logics’ merely reinforces the sense of their persistence. But this has not stopped her from continuing to design online collaborative activities to enhance learning for her students. Community Equity may help with the first of these tensions in providing a way to accurately account for and acknowledge an individual’s contribution to their online community.

Why Community Equity?

Andrew Frayling (@SpericalN), a colleague in Cardiff University’s central Web team, considered my requirements and recommended Community Equity, or CEQ (Reiser & Diamond, 2011). CEQ was developed to calculate an individual’s social capital within an enterprise social network, and was successfully implemented in

SunSpace, of Sun Microsystems, Inc. In 2008 SunSpace hosted over 200 communities and 16000 users (Sun Microsystems, Inc., 2008).

CEQ captures activity data within Atlassian's Confluence wiki platform (Reiser, 2009a). An individual's Community Equity is reported as two scores: Contribution Equity and Participation Equity, calculated by combining:

- Primary activity in creating content (creating and updating, attaching files, tagging, sharing bookmarks)
- Secondary activity this content attracts (views, rating, commenting, tagging, downloading, quoting)
- Responses to content created by other members of the social network (rating, commenting, tagging, re-use).

In addition, to mitigate 'information overload' and encourage ongoing involvement, the value of content within the system can be set to depreciate over time. CEQ also measures tag use, but not just in terms of occurrence: 'tag equity' is inherited from the activity related to content which has that tag.

CEQ can also include activity data from other social networking sites, such as ATOM and RSS feeds, Twitter and Facebook. A recurring debate within learning technology has been whether to insist that students use their institution's systems, or offer services within their personally preferred 3rd party platform. Many nursing students are Facebook users, but Moule et al. (2010) found that they prefer to keep the University out of their private online world. Indeed, online social networking activity may contribute little to formal learning as such (Madge, Meek, Wellens, & Hooley, 2009). However, students may be willing to adopt another social networking service, such as Twitter, and reserve it for networked learning. Twitter is particularly interesting because it is still possible to 'tweet' using simple, convenient SMS text messaging, even in clinical areas where access to the Internet for nurses is limited (Gilchrist & Ward, 2006). Furthermore, using a tool that is detached from University IT systems means that students can take these practices and networks with them into their working lives after they graduate.

These activity statistics are combined and published to the community through embedded widgets. For example, a real-time 'top-ten' list of individuals is visible to all and the current user's score and ranking is shown privately to them, whether they are on the 'leader board' or not. For a fuller treatment of CEQ's architecture, see Peter Rieser's presentation on slideshare (Reiser, 2009b).

Promoting engagement through published metrics

There is nothing essentially new in the tactic of seeking to engage students through publishing some measure of their activity. It features in Randy Pauch's 'Last Lecture':

One other big success about the ETC is teaching people about feedback [puts up bar chart where students are (anonymous) listed on a scale labelled "how easy to work with"] -- oh I hear the nervous laughter from the students. I had forgotten the delayed shock therapy effect of these bar charts. When you're taking Building Virtual Worlds, every two weeks we get peer feedback. We put that all into a big spreadsheet and at the end of the semester, you had three teammates per project, five projects, that's 15 data points, that's statistically valid. And you get a bar chart telling you on a ranking of how easy you are to work with, where you stacked up against your peers. Boy that's hard feedback to ignore. Some still managed. [laughter] But for the most part, people looked at that and went, wow, I've got to take it up a notch. I better start thinking about what I'm saying to people in these meetings. And that is the best gift an educator can give is to get somebody to become self reflective. (Pausch, 2007, p. 16)

This kind of motivation has also been discussed within the world of commercial social networks. Liu, Lehdonvirta, Alexandrova, Liu, & Nakajima (2011) selected three strands from motivation theory as pertinent to social networks: games-based, psycho-social and economic.

Ponti and Ryberg (2004) described how, the mini-game 'Bubblez', within an online collaboration space, became important as a social artefact, a hinge, upon which various social practices were developed, promoting engagement at many levels, both online and off. Although not strictly a game, CEQ does allow participants to compare scores, and thus holds some of the same potential to promote social interaction and an element of

'competitive edge'. Thus CEQ holds the same potential as CMA (Fritz, 2011), i.e., for students to reflect on their activity relative to their peers. However, this incentive is essentially psycho-social, where, Liu *et al.* note (2011), a balance has to be struck between 'social loafing' and 'social facilitation', between feeling insignificant, 'lost in the crowd', or else overwhelmed with responses. Users need just the right amount of attention from the social network so as to feel that their contribution is valued.

These games-based and psycho-social motivators may yet *not* be sufficient incentive to activate participation from the most recalcitrant students. Economic motivation may also come into play and this need not be pecuniary. Other forms of currency have emerged on the Internet and these may be categorised as economic motivation broadly defined; e.g., online forums have long since indicated a member's status, in terms of number of posts, date joined, etc. Social media engineers develop sophisticated and powerful motivational systems around awarding their members 'badges' for particular levels and kinds of activity (Antin & Churchill, 2011). Within higher education though, assessment credit is the major currency. Awarding credit for online participation has become a familiar tactic to secure engagement, although Bures, Abrami, & Amundsen (2000) warn that the relationship is complex: self-efficacy and expectations that participation would help the students learn course content were also important.

If assessment credit were awarded for online activity, it is not hard to imagine some students losing sight of the purpose of participation within the network, seeking to 'game the statistics' with meaningless actions to reach the required score. Ryberg and Larsen (2006) documented this behaviour by 'friend hunters' who sought to accumulate as many 'friends' on the Danish 'Arto' social networking site as possible: such activity was viewed as anything but 'friendly' by the recipients. Although CEQ cannot judge the worth of someone's contribution, it does take account of the actions of the network in response to the primary activity. Also, because CEQ counts granular acts of contribution and participation, it may justify engagement without inviting 'gaming' behaviour. Furthermore, slightly more weight is given to activity that implies a greater level of engagement, for example, commenting or replying to a contribution implies a slightly greater investment in time and attention than merely accessing the post initially and so this attracts a higher score.

CEQ raises a number of questions about how students might respond towards their activity being measured and the publicising of a leader-board to their peers. Is there sufficient motivation in the score alone to promote engagement amounting to networked learning amongst *every* student, or should a certain threshold of activity be rewarded or required before students are allowed to progress through their programme of study? Does the strength of this incentive vary depending on the relative performance of other students?

More fundamentally, does what Community Equity measures equate to anything approaching networked learning activity? In general, CEQ accords with the principles of the Networked Learning Manifesto (Beaty, Hodgson, Mann, & McConnell, 2002) in that it supports 'participation' not mere 'transmission', collaboration and co-operation, and the co-construction of knowledge. However, there is no current empirically based taxonomy of networked learning activity with which to compare the individual activities counted by CEQ: i.e. create, modify, download, view, rate, comment and tag online content (Reiser, 2009b). This is not surprising with new social media platforms appearing regularly, although it is hard to think of even highly discipline-specific electronic discourse practices could be not be encompassed within the aforementioned CEQ list. The most serious problem arises from another direction, i.e. where significant networked learning activity happens 'off the radar', for example, through SMS text message. For it to count, students would need to bring their efforts back within CEQ's reach.

Summary

CEQ counts primary activity, such as sharing a Web link, authoring a blog post or typing into a wiki. But that is just one side of networked learning activity. More significantly, CEQ also takes account of how primary activity sparks secondary activity, such as visiting, responding, and rating the primary activity. CEQ scores thus indicate how the primary author's contribution is esteemed by their online community. Since CEQ is able to include networked learning activity outside University systems, it may help to stimulate reflection within 'life-world' contexts. Traditional high-stakes assessments, such as exams, are accused of measuring the outcomes of learning, rather than the discourse-creation processes which led to it. This encourages students to adopt surface learning tactics, such as rote learning. There may be sufficient stimulus in merely publishing the CEQ score to the community of learners. Or perhaps a certain level of assessment credit needs to be awarded in some way for achieving a given CEQ score, disaffected students are less likely to engage without that. Having engaged for the

recognition and assessment credit, having learnt the technical skills required to participate, will students begin to realise the potential of networked learning? Will this spark intrinsic motivation to carry on these behaviours into their working lives? The purpose of presenting this paper at the Networked Learning Conference 2012 is to promote discussion around the issues that might arise through deploying CEQ and explore its possible role within assessment. As a first step, I intend to undertake a pilot project which exposes students to Community Equity scores and rankings. I would then gather student perspectives through qualitative methods in order to explore questions such as:

How closely does CEQ reflect networked learning?

Does CEQ measure networked learning activity?

Does awareness of 'Community Equity' encourage students to participate in networked learning, or does it have the opposite effect, perhaps making them feel too exposed?

I welcome the questions, comments and discussions of the conference.

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