

Assembling university learning technologies for an open world

connecting institutional and social networks

Hannon, John; Riddle, Matthew; Ryberg, Thomas

Published in:

Proceedings of the 9th International Conference on Networked Learning 2014

Publication date:

2014

Document Version

Accepted author manuscript, peer reviewed version

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Hannon, J., Riddle, M., & Ryberg, T. (2014). Assembling university learning technologies for an open world: connecting institutional and social networks. In S. Bayne, C. Jones, M. de Laat, T. Ryberg, & C. Sinclair (Eds.), *Proceedings of the 9th International Conference on Networked Learning 2014* (pp. 443-452). University of Edinburgh. <http://www.networkedlearningconference.org.uk>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Assembling university learning technologies for an open world: connecting institutional and social networks

John Hannon

La Trobe Learning and Teaching, La Trobe University, j.hannon@latrobe.edu.au

Matthew Riddle

La Trobe Learning and Teaching, La Trobe University, m.riddle@latrobe.edu.au

Thomas Ryberg

Department of Communication and Psychology, Aalborg University, ryberg@hum.aau.dk

Abstract

This paper considers the emergence of social media in university teaching and learning and the capacity of universities – as complex organisations with disparate interacting parts – to respond to the shift of pedagogies and practices to open networks. Institutional learning technology environments reflect a legacy of prescriptive, hierarchical arrangements associated with enterprise systems, and are a poor fit with the heterarchical and self-organised potential for learning associated with social media and open education practices. In this paper we focus on the tensions that arise from the juxtaposition of these two orientations to learning technologies, and focus on how an emerging online sociality can destabilise established boundaries of learning and connect to other domains of practice. To do this, we examined data from three separate case studies in which participants – both teaching staff and students – reported on student engagement in learning involving social networking activity. We draw on empirical data on student practices that challenge institutional arrangements for learning, and offer insights into the assembly of extended connections for networked learning, in particular the pedagogies of collaboration, knowledge co-construction, and informal social learning. From these instances we draw attention to the interplay of competing metaphors and practices in the organisation as it encounters the potential of more open pedagogies over social and digital networks. Drawing on spatial descriptions of networked learning, we apply Callon's (1998) notions of *framing* and *overflows* to this interplay in order to ask how learning environments were assembled and ordered: what pre-existing configurations were brought to frame and set boundaries for these networks of formal learning; and what activities overflow those boundaries and destabilise these framings. We argue that the adoption of social media by students requires a challenge to the institutional metaphors of containment that implement a default bounded environment. This involves a reappraisal of established learning environments for their pedagogical metaphors and spatial orderings that frame learning, followed by different organisational approaches to account for and enact learning that emerges from the connections, mobilities and flows of social networks. We propose a less integrated, “assembly” approach to institutional learning that attends to the open, fluid connections of networked learning. A spatial articulation of networked learning that bridges both institutional and social networks can equip the university to meet the critical challenges of emerging hybrid learning environments and the potential of more open learning environments.

Keywords

social media, learning, Web 2.0, spatial, metaphors, self-organisation, socio-material, assemblage, framing, overflows.

Introduction

The rise of social media and its presence in higher education has produced heightened rhetoric and expectations in discussions of education futures and institutional e-learning strategies (Conole et al. 2008; Hrastinski 2012; Friesen & Lowe 2012). Yet these discussions tend not to be reflected in actual practices, and reveal “deep

misalignments and paradoxes in the context of traditional education” (Ravenscroft et al. 2012, p. 177). Thus social media in higher education follows the historical pattern of mismatch between rhetoric and practice of e-learning (Hannon 2013; Selwyn 2012; Ryberg 2008): the widespread adoption of social media by students and teachers in learning settings has confronted universities with digital practices that do not readily fit traditional education, and challenges institutional strategies for integrating learning technologies. Social media activity in learning, therefore, invites a reappraisal of the technological, managerial and academic structures for university education, and opens up potential for new arrangements for networked learning.

One of the fissures that is opened up in the traditional structures of university learning arises from the way social media has transformed the way the Internet is experienced (Selwyn 2012). Williams et al (2012) suggest that social media is part of “a radical transformation of the modes of production of interaction, communication, and dissemination, collectively referred to as Web 2.0 ..., which makes emergent behaviour possible at an unprecedented scale, pace, and breadth of participation” (p. 44). This plays out in learning environments as an unresolved accommodation between traditional, structured educational approaches and social media practices that take place on the dynamic and horizontal structures of Web 2.0. Williams et al (2012) also observe that “most students embrace the digitalised world of social networking ..., although this does not necessarily transfer to learning” (p. 40). This separation of domains of practice is confirmed by Friesen & Lowe (2012), who contrast distinct models of networking between educational environments and the commercial imperatives of social media platforms: “social networking offers only a truncated capacity to foster disagreement and debate because dominant programmes and models primarily foster conviviality and ‘liking’.” (p. 184).

This dissonance reprises an issue that was identified before the era of social media. Reflecting on the (then) twenty year history of online education, Feenberg (1999) contrasted the potential for “automated” education with learning through text-based discussion. Similarly, Weller’s (2007) distinction between “broadcast” and “discussion” viewpoints in the use of virtual learning environments (VLEs) reflects the ambiguity in approaches to learning over digital networks as both platforms for delivery or spaces for interaction and communication. This ambiguity is taken up by Dohn (2010), who suggests that social media and Web 2.0 should be not viewed as an array of tools and technologies, but rather a set of particular practices characterised by “a high degree of interactive multi-way communication between users; ‘bottom-up’ production, reproduction and transformation of content; continuous use and reuse across contexts; and renunciation of copyright and distributive authorship (p. 143). She further suggests that these Web 2.0 practices sit uncomfortably within education because they are rooted in contradictory views or underlying metaphors of learning and knowledge. Drawing on Sfard (1998) she argues that education is firmly rooted in an *acquisition* metaphor of knowledge, where learning is viewed as the individual possession of an object of knowledge, assessed as students’ competence or abilities. In contrast, she argues, Web 2.0 practices are rooted in a *participation* metaphor of learning, where knowledge is viewed as collaborative doing, and the goal of participation is participation, and the purpose or motivation is internal or embedded in the particular practice. Participation, however, takes a more radical dynamic with the transformative modes of Web 2.0, and the disruptions and tensions that arise as learning occurs in these spaces is an issue for this paper.

The kind of participation that occurs with social media, however, do not necessarily align with utopian visions of collaboration and communities of learning. According to Selwyn (2012):

There is currently little evidence that social media applications are being used by the majority of users in especially innovative, participatory, interactive or even sociable ways ... Recent empirical studies of student social media use highlight a lack of what could be considered authentic or even useful participative learning activity. Indeed, a number of recent studies report a surprising lack of sophisticated or advanced use of social media applications amongst university students.

The connection or disconnection that is the focus of this paper is summarised by Hemmi, Bayne & Land (2009): “the volatile modes of online interaction enabled by the new social media perhaps sit uncomfortably within existing higher education practice” (p. 29). We investigate how forms of digital sociality can disturb arrangements for university learning arising from this uncomfortable juxtaposition: we aim to examine closely *how* social media practices intersect with institutional arrangements for learning, and how participation occurs through the multiple locations, mobilities and flows of Web 2.0. We make the case that particular metaphors *precede* learning environments, and metaphorical *work* is a powerful actor in framing the resulting assemblage.

Metaphorical work in shaping the spaces of learning

How can learning be discussed without metaphors? In a brief “brainstorm”, Edwards et al. 2004) identified these metaphors for learning: “teacher-centredness, student-centredness, subject-centredness, ladders of learning, distance learning, open learning, flexible learning, situated learning, distributed learning, distributed cognitions, mobile learning, networked learning, deep and surface learning, legitimate peripheral participation, communities of practice, work-based learning...” (p. 36). They also noted that these metaphors locate learning in a spatial configuration, and that such spatial metaphors perform certain “metaphorical work”, with consequences for learning environments: for example, student-centredness can structure relations between teacher and learner, and it can also be used rhetorically to persuade the reader what “good” or “effective” teaching is.

Metaphors, according to Lakoff & Johnson (1980), are not simply figurative, but central to our everyday, embodied experience, structuring our relations and everyday reality. Metaphorical work, therefore, structures our understanding and experiences of Internet communication in terms of movement, orientation, extension and flows. Hence metaphors are more than descriptive, they are productive and constitutive of the realities of learning environments, and they can also be traced empirically in particular settings. Sorensen (2009) described predominant metaphors as doing particular work in spatially locating learning: for cognitivist pedagogies, learning occurs “in the mind” (p. 89); and for situated learning, learning occurs within a community of practice. In both cases, pedagogical metaphors constituted learning as performed within bounded regions. These spatial metaphors or “imaginaries” describe “the pattern, landscape, or shape that is formed spatially by and through relations and the parts they connect” (p. 26). To address learning that occurs beyond the bounded spaces described above, Sorensen brings further spatial imaginaries in addition to regional space: network space that describes a stable pattern of relations between entities (people and objects), and fluid space that describes a pattern of continuous transformation. Sorensen emphasises that metaphors such as these are put into practice as performances, that is, an arrangement to achieve particular ends, and also notes they may be performed otherwise, “[I]t is no wonder that the cognitivist approach to learning is so popular, because representational knowledge and accumulative learning are indeed the core forms performed in educational practice” (p. 191). Such spatial metaphors, where learning is contained within bounded regions, are often represented as a singular approach that tends to exclude alternative assemblages of learning, and are unable to recognise learning and knowledge that is performed over multiple locations.

To investigate if and how social media practices challenge established educational practice by destabilising its pedagogical boundaries, we draw on examples from studies of learning settings to examine the metaphorical work that shapes or frames an assemblage of learning. The sense of “assemblage” used here is described by Law (2009) as a provisional and productive arrangement of “quite limited forms of ordering located in no larger overall order” (p. 146). We consider settings of learning as an assemblage, rather than, say, a learning design, since analysing an assemblage is able to account for the contingency of an arrangement and the unintended activity (outside the design) that emerges in a particular setting. This reflects a socio-material viewpoint that treats the objects of analysis as made and performed, and not pre-given (Suchman 2007). An assemblage of learning, then, draws attention to the arrangements that frame and establish a boundary within which interactions take place. Callon (1998) draws on Goffman’s notion of framing that he uses to describe any interaction, such that “framing puts the outside world in brackets” (p. 248). Framing sets the boundaries in which participants agree to conduct their interactions independently of the outside environment. As an example of framing, Callon cites Goffman’s description of a stage performance in which the actors and audience willingly and tacitly take part, contained within the necessary “framework” of physical materials, devices and practices that demarcate and maintain the interactions – the stage, curtains, lights, silence and clapping, and so on. Yet, Callon argues, the framed interactions still maintain their connections to the outside world, since interactions are bound up with materials, objects, and “specialists”, each with their own histories and extensive outside entanglements. Hence interaction cannot actually be contained within its framed boundaries, and Callon posits “overflows” as “the inevitable corollary of the requisite links with the surrounding environment” (p. 252). The consequence of overflows, he argues, can be productive or destructive for the framed arrangement of interactions.

Studies of intersecting networks: social media and learning

The methodology for this paper is to draw on empirical data from three separate case studies in which students adopt practices outside the framing of traditional learning and bounded pedagogies. We use Callon’s analysis of the interplay between the framing of interactions and the connections that overflow this framing, in order to examine the effects of the use of Web 2.0 technologies in learning. In each example, we investigate the

encounter between students' digital technology practices and the "limited forms of ordering" of formal assemblages of learning.

Disorienting learning spaces

In the first example of this enquiry into "forms of ordering" in assemblages of learning, we consider responses of teaching academics in a case of mismatch between the framing and subsequent experience of a learning setting. Teachers are a key mediator of university learning, yet accounts of academics' encounters and experiences with the digital practices of students is far less visible in the learning technology literature compared to students' experiences. The following vignette is drawn from a corpus of data over 20 teaching academics across three universities talking about their experiences in online learning (Hannon 2009). One pattern that emerged from interviews was a reported disorientation or disconnection between teaching staff and students. The kind of disorientation that typified this study is expressed by two participants, Alison & Laura, who were two of three lecturers/tutors teaching a unit/module *Computers, Communication & Society* (510 students, 13 tutorial groups), as they reflected on student engagement in a hybrid or blended learning setting. In this first example, Alison comments on an encounter:

In the case of teaching online, there are not the nonverbal cues, and shared expectations are not built up in the teacher student relationship. The staff/student relationship is harder to develop again ... the missing cues means there is more potential for misunderstanding – even knowing this and having strategies does not eliminate this possibility entirely.

Alison identified two significant features of framing that were absent in her interactions with students: the "shared expectations" and "missing cues" that were not established during the life of this unit. For Alison, the assemblage of teacher-student relations is uncertain, and "harder to develop again". She invoked a prior set of arrangements or "expectations", an established set of practices that framed her learning environment, but that was now challenged by a different form of ordering. Laura, a colleague of Alison, reflected on a similar experience:

There appears to be a definite shift from seeing class attendance as what one must do, to being something optional - for both online and face to face participation. This is the second year I've had students voice that they shouldn't have to go to all the classes, instead should be allowed to pick n mix. But this causes a slew of problems, including the individualistic demand to go over concepts again - once students realise that (whoops!) that lecture/tute they missed was important after all...

Laura noted the entry of expressions that reflected different practices: "there appears to be a definite shift" to the "optional", or "pick n mix" orientation. There were also indications that different modes of relating were being put into effect, with students who "don't seem to use the online study guide or discussion list". These expressions indicate a pattern of engagement that is dislocated, unpredictable and is *competing* with the established network of learning. This pattern of response dominated this study, conducted across three Australian universities, with similar comments from other interviewees in different learning settings, using similar terms (eg. student expectations of "24/7 availability", "prompt response", they were "more individualistic"). A total of 124 comments were collected from 20 teaching academics specifically concerning their experiences of student engagement with learning technologies (not specifically social media): participants expressed their disorientation, with 71% of responses recounting problematic experiences with students in online learning, while 29% of responses were reported positively, in terms related to dialogic interaction and communities of learners.

Alison's and Laura's accounts are consistent with studies reporting disorientation of teaching practice involving technologies (Boon and Sinclair 2012; Sorensen 2009; McLoughlin & Lee, 2008; Bayne & Ross, 2007). Boon and Sinclair refer to challenges for educators in engagement in unfamiliar, online locations:

In order to function successfully in networked learning environments then, the academic must come to terms with this new alien landscape and, perhaps more importantly, find a place in it for themselves. Our own experience has shown that many academics still prefer—knowingly or otherwise—to replicate the 'real' in the virtual world, rather than unfetter themselves from tradition and the familiar and create new selves, constructs, relationships and opportunities for engagement (2012, p. 285).

The assemblage of learning that Alison and Laura invoked drew on established practices and metaphors that circulate through higher education, including pedagogical approaches, discipline knowledge and texts, and

institutional arrangements for learning. However, their expressions of disorientation identified student practices from elsewhere that had entered, or overflowed, into their learning environment. What is notable in this example, however, is that technologies *per se* were not the focus of comments, rather the associated practices that interfered with the framing of the learning environment, and either aligned or conflicted with the arrangements for learning.

Students using social media for group work in EBL

In our second example into “forms of ordering” of assemblages of learning, we consider a data extract from students and their strategies for working collaboratively. In early 2013, 69 students enrolled in the first year unit *Business Foundations* were given iPads as part of a project on Mobile Learning Devices at La Trobe University. Roughly 1,300 students are in the cohort, split into smaller groups of 60 maximum organised around an Enquiry Based Learning (EBL) pedagogy. Rather than undertaking a large introduction of technology the idea was to choose a small group to work with and evaluate on the basis of students’ own experiences and reflections on mobile learning. Near the end of the semester, students were invited to participate in a survey and a series of eleven focus groups.

In a number of these focus groups, students referred to using social media such as Facebook to organise their group work. The setting up of these groups was student-organised, and not under the observation or direction of teaching staff. The following is a sample exchange in one of these focus groups, in the context of using iPads in *Business Foundations*.

Interviewer: What else did you use it for?

Student M: Facebook

Student G: Yeah

Interviewer: Facebook? So communicating with other people?

Student M: Yeah

Interviewer: Were they people who you see during the day anyway? Or people who were like friends overseas? Or family? Or other students?

Student M: It was just students like connecting for groups and talking about like assignments and stuff, it was really handy like that

Interviewer: Oh okay, so how did you get into the Facebook group? Did you set up those groups yourself?

Student M: Ah yeah

Interviewer: And were you all meeting physically?

Student M: Yeah, so we'd like organized it online then we'd all come to school and meet. Yeah so it was handy.

Interviewer: So it was actually quite useful for the timetabling of your group assignments

Student M: Yeah

Indeed of those students surveyed (n=53), 81.1% reported using social media for group work, including 28.3% using it during class time. Facebook, Twitter or social media are used by 92% of students outside of the classroom (n=46) with 35.8% reporting that they set these up for themselves and others (n=53).

Facebook was not the only social network to be reported during the focus groups, with one Chinese student reporting that Chinese students used QQ for group work. These findings were reported in the context of a discussion of self-organised sharing of information relating to group work and organising face to face meetings. Some of these findings are particularly notable in this institutional context. For example, in many places near and around the classroom spaces these students were using on campus, signs requested students to switch off mobile phones. At the same time, the university used Moodle as its Learning Management System (LMS), however there is no equivalent capability on this environment for students to self-organise. The findings that social media were adapted for organising groups and for collaboration, were arrangements for learning that occurred outside the standard framing of face to face classes and the institutional LMS. This self-organised behaviour raises questions for course designers concerning the role of institutional learning in supporting students’ emergent and informal learning.

Students’ adaptation of social media in a PBL context

Our final example also draws on students engaged in problem based learning, pedagogically similar to the enquiry-based learning settings above, and positions students' appropriations of social media alongside institutional learning technologies.

The problem based learning model (or what is often referred to as Problem and Project Based Learning or Problem Oriented Project Pedagogy (Dirckinck-Holmfeld, 2002) is the foundational institutional pedagogy of two 'young' Danish reform universities Roskilde and Aalborg University that were established in 1972 & 1974. In these universities approximately half the credit points (15 ECTS) each semester are allocated to students' problem oriented project work, which is supplemented through a number of courses, lectures and exercises. Throughout a semester (four months) in Aalborg University the students work in groups of three to six students on identifying a self-chosen societally relevant problem, and with the support of a supervisor/facilitator they engage in search for literature, problem delineation, empirical and theoretical enquires, experiments, production and writing up a shared project report of app. 100 pages in which they document and report their findings and approach to 'solving' the problem (which can be a tangible product as well as a theoretical enquiry). This encompasses traditional academic competences, but equally requires students to collaborate, manage their project resources (project management), and resolve conflicts or differences of perspective. From a learning technology perspective this also means that there is a need for groupware (or collaboration software) which does not only support dialogues, but equally file sharing, coordination, and planning (Tolsby, Nyvang, & Dirckinck-Holmfeld, 2002). These functionalities are more common in work based groupware systems, than in traditional learning management systems. While it has been agreed across Aalborg University to gradually switch to Moodle as the main Learning Management System, it has still not been decided whether Moodle should be supporting the students' group and project work, or whether this should be delegated to Mahara, other systems, such as Quickr or Podio; or left to the students to figure out.

In a series of semi-related studies across different programmes researchers have been conducting various studies of how students adopt technologies for their group work, and how and why the organisation has adopted various learning technologies (Bygholm & Nyvang, forthcoming). Although, there is no centralised software system in Aalborg University for supporting group and project work, students have been adopting various solutions. Some of these have been part of experiments initiated by researchers/the e-learning unit (Quickr, Podio, Mahara), and others completely self-selected. In a master for professionals (Master in ICT and Learning) the backbone technology has been First Class conferences and Adobe Connect, but it has also been clear that students engage with an array of self-selected web (2.0) tools such as: Skype, Google Docs, Blogs, Elgg (Dirckinck-Holmfeld et al. 2009). In the programme Human Centred Informatics Tolsby (2009) studied how a particular group adopted Igroups.dk (a site that was popular among some students in the beginning of 2000), and how they adopted the various tools available to fit their particular needs. For example how they used the file sharing area as a way to structure and gain an overview of their project by adopting particular naming conventions (files were always alphabetically listed which was not useful in maintaining an overview of the project) (Tolsby, 2009). In more recent times, it is clear from a number of studies that Facebook, Dropbox, Google Docs and Skype have become widely adopted tools for synchronous and asynchronous communication, collaborative writing and file sharing among students, whereas tools for reference management (e.g. Zotero) or social bookmarking (e.g. Diigo) were little used or known by the students (Rongbuttsri et al., 2012). These popular systems are used for group work, but equally to supplement (or circumvent) the official Moodle forums where student-teacher communication take place; or as a place to share files across a semester. None of these systems are officially supported, and in many ways sit next to, compete with or exist as an invisible infrastructure growing underneath the official learning management systems, network drives and supported videoconferencing tools. This has not been consistently mapped but such underground work surfaces from time to time e.g. as students write in the semester forum "the slides are now in dropbox". From interactions with students it also seems that students in some semesters volunteer to copy messages from the Moodle forums to the semester's Facebook group.

Emerging from these studies are interesting examples of how students have creatively appropriated technologies to fit their communicative and collaborative needs. For example in relation to their project work: by restructuring and renaming folders and files to reflect the current progress in a project; or using technologies to maintain a sociable atmosphere in the project groups (Tolsby, 2009, Ryberg & Ponti, 2006, Rongbuttsri, forthcoming). However, the studies have also uncovered very different attitudes among students in terms of how eager they were in experimenting with new technologies in relation to their project work: how confident they felt about adopting new tools (Ryberg & Larsen, 2012), and how technology adoption seems to be an outcome of negotiation among students in a group. In Rongbuttsri et al. (2012), one member suggested the use of Zotero, but other members found it too difficult, hence it was not adopted; conversely, Rongbuttsri (forthcoming) discussed how a student persuaded his group to adopt Zotero, but also how one member refused to use it.

Likewise, having a dropbox folder for a semester might not be an “institutionalised” practice across all semesters, but may hinge on particular students assuming responsibility for propagating and gardening the tool. These little examples, albeit small and seemingly insignificant, demonstrate that next to the institutional Learning Management Systems there is an invisible, but also fragile infrastructure, where students assemble their own learning ecologies by stitching together various social media and services. They are fragile in the sense that, apart from the most popular services (Facebook and Dropbox), they seem to rely on particular students assuming responsibility for the deployment in the group or for the semester. While this is positive in the sense that some students (apparently) assume responsibility for their own and peers’ learning arrangements, it might also lead to situations where neither students nor institutions are able to address shortcomings in these self-assembled environments. As e.g. Rongbuttsri et al. (2012) argue, students might have a need for facilitation in adopting services which are not mainstream, but could potentially be very valuable in relation to their project work.

In a longitudinal study Bygholm and Nyvang look back over ten years at the development of a learning management system or infrastructure (from Quickplace to Moodle) in the programme *Human Centred Informatics*. They conclude that despite initial aims of stimulating more student-centred pedagogies, collaboration, and dialogue little pedagogical innovation has happened, and the infrastructure is mainly used for slides, descriptions and practical information. From the various studies it seems an emerging pattern that much of students’ communication, group work and knowledge production might increasingly be happening in spaces with only semi-permeable borders between teachers and students i.e. in the students Facebook network (thus living below the radar of the facilitator or institution) and leaving the institutional spaces, such as the main learning management system, inhabited mainly by course descriptions, slides and practical information from teachers to students. These observations open questions of how or whether institutions should balance between providing systems for students, and empowering, supporting and interacting with students’ self-assembled learning ecologies. However, they equally open questions as to what spaces are the loci for continuous networked learning innovation, and whether there are spaces in-between the institutional LMSs and students self-assembled spaces that can act as common springboards for pedagogical development.

Discussion and concluding remarks

In this paper we investigate how students’ emerging online sociality can augment or destabilise established boundaries of learning, and potentially reconfigures the connections that are critical to networked learning. The widespread adoption of social media among students brings shared interactional practices that does not match university arrangements for learning. This, we argue, invites reappraisal of the framing of established educational practices and the metaphorical work that precedes it, orders and assembles its institutional arrangements and practices.

Goffman and Callon both note the contingent dynamic of framing settings of interaction – how connections to the “outside” world overflow boundaries and reconfigure the frame. Our examples can offer some insights into the “uncomfortable” co-presence of social media and university learning, the interplay between them and a potential approach to the assembly of institutional learning technologies that adapts to practices from elsewhere.

Our first two examples offer contrasting accounts from students and from academic teachers. The accounts by tutors in *Computers, Communication & Society* indicate their disorientation at unexpected modes of engagement as students brought practices from outside the framing of the learning environment, leaving the tutors to their own devices in managing this disruption. By way of contrast, the appropriation of social media by the *Business Foundations* students to self-organise their EBL groupwork via Facebook or QQ was an unplanned outcome, which in effect de-centred, yet enhanced the learning setting. While learning was de-centred – it was conducted from multiple locations that were outside the framing of the Moodle based learning environment, nevertheless it was congruent with the learning goals of *Business Foundations*. In the third example, the Danish studies identified a network for the (self-)organisation of student work: structuring, enabling discussion for learning, and establishing a “sociable atmosphere”. This self-organisation of learning, or “underground work” suggests a widespread pattern of activity outside the institutional framing of learning.

There are three observations or upshots from these cases.

- the shift to student self-organisation is consistent with the informal practices and rhetoric of social media, with its continual work of relating (liking, updating) and crafting an identity in a “personalised network”

(Ryberg 2008). Our examples suggest that this informal work is shifting to formal learning spaces, both online and face-to-face.

- the mobile practices of informal, self-organised learning challenge the metaphors of bounded (regional) learning spaces. The emergence of distributed locations for learning calls for pedagogical metaphors for open networks and fluid spaces of education that cross boundaries, for example, from open education practices, learning ecologies (Williams et al. 2011), and extended spatial imaginaries (Sorensen 2009)
- student social media practices *overflow* the framing of institutional learning environments: the tradition of hierarchical, sequential ordering is ill-adapted to the extended, heterarchic connections of learning in multiple locations.

Our analysis of these examples problematises some of the literature on social media: the lack of “transfer to learning” (Williams et al 2011, p. 40); the notion that students are captured by privatised domains of social media (Friesen & Lowe 2012); and the findings by Czerniewicz & Brown (2010) that “strong boundaries remained intact between social and academic activities” (p. 146). There needs to be caution about making analytical categories, lest these perform a kind of framing that overlooks emergent social learning through appropriations by students using social media for their learning goals.

The self-organisation of learning through social media has implications for the connections that are critical to networked learning. The examples above do not match the characterisation of social media as described by Williams et al (2011) as the “radical transformation of the modes of production of interaction, communication, and dissemination”, nevertheless, we argue that these cases demonstrate students’ self-organising activity are itself a “form of ordering”, reflecting digital practices that overflow the frames of established learning environments through a decentring of learning through volatile connections and multiple sites for activity – all of which destabilise and potentially confound unified institutional arrangements.

This paper revisits a larger question about self-organisation that was stated by Latour et al (2012) in terms of “doing away with the dispatcher” (p. 601), that is, analytically removing the (fat) controller in charge of the process of organising. There is, they note, a persistent commitment to assigning a determining centre to organised activity through abstractions, such as institution, strategy, pedagogical model, or framework. Latour et al take the view that this “dispatcher” is mythical: it does not exist as a prior entity, but is posited as an analytical whole that arises as an effect of the observed organising strategy or activity. Dispensing with organisational abstractions may be a useful step to assembling learning that connects institutional and social networks. Consequently, we propose a *less* integrated, a *less* hegemonic implementation of institutional learning technologies (and potentially less costly), through a more separated, “assembly” approach to institutional learning that attends to the open, fluid connections of networked learning.

Assembling institutional learning

Assembling institutional learning to account for these overflows means challenging the frame of integration, where university learning technologies present a unified arrangement with the goal of a holistic virtual learning environment. The limitation of such an approach is that pedagogies and learning settings are encountered as one system, to one scale, with a universal application. In contrast to integration, an “assembly” approach does not pre-determine pedagogical design, and allows learning environments to be assembled according to a particular setting. This approach involves a “strategy of separation” (Ryberg 2008, p. 663), as represented in Table 1 (developed from Rongbuttsri, Khalid & Ryberg 2011).

Table 1: Institutional arrangements for self-organised learning environments

Learning technologies that are:	Purpose	Examples
Institutionally provided	Learning technology systems: Core institutional infrastructure (LMS/VLE)	Moodle, Virtual Classroom, synchronous Personal learning environments (PLE), eg, Mahara
Institutionally supported or hosted	Web 2.0 bundle: Package/bundle of tools not provided by institution, but maybe facilitated and semi-supported, eg. open source systems	Wordpress, Skype
Social learning, student initiated	Web 2.0 and cloud-based services: <ul style="list-style-type: none"> ▪ for student independent learning – collaboration, groupwork, files sharing 	<ul style="list-style-type: none"> ▪ dropbox, google docs, google hangout, google groups,

	▪ for student use of lifestyle technologies	▪ Facebook, flickr, Instagram
--	---	-------------------------------

This arrangement represents an assemblage of learning technologies that reflects the shift from a hierarchical organisation for the containment of learning, to heterachically organised networks of learning with multiple points acting as centres. The third row in the table entails recognition of the participation metaphor of learning extended to networks open to other locations for learning. In this institutional arrangement, social media offers potential to design learning by bridging informal and formal learning (Ravenscroft et al. 2012). Pedagogical approaches that support self-organised participation do not foreclose or pre-determine the framing of engagement are better able to adapt to interactions that overflow the framing environment.

The case studies we have been examining demonstrate that social media *practices* are not separated from learning setting and relegated to the domain of lifestyle pursuits, but are adapted by students as they establish their own networked locations for learning. An issue for networked learning is to recognise the emergent assemblages of student-initiated, self-organised learning as overflows of the framing of institutional learning, and also recognise these overflows as the norm rather than a marginal occurrence.

References

- Bayne, S., & Ross, J. (2007). *The 'digital native' and 'digital immigrant': a dangerous opposition*. Paper presented at the Annual Conference of the Society for Research into Higher Education (SRHE).
- Boon, S. & Sinclair, S. (2012). Life behind the screen: Taking the academic online. In L. Dirckinck-Holmfeld, V. Hodgson & D. McConnell (Eds.), *Exploring the theory, pedagogy and practice of networked learning* (pp. 273-287). Dordrecht: Springer
- Callon, M. (1998) An essay on framing and overflowing: economic externalities revisited by sociology. In M. Callon, (Ed.) *The Laws of the Markets*. London: Blackwell Publishers.
- Czerniewicz, L. & Brown, C. (2010). 'Strengthening and Weakening Boundaries: Students Negotiating Technology Mediated Learning'. In: Sharpe, Rhona; Beetham, Helen and De Freitas, Sara eds. *Rethinking Learning for a Digital Age: How learners are shaping their own experiences*. Abingdon, U.K and New York, NY, U.S.: Routledge, pp. 142-152
- Dirckinck-Holmfeld, L. (2002). Designing Virtual Learning Environments Based on Problem Oriented Project Pedagogy. In L. Dirckinck-Holmfeld & B. Fibiger (Eds.), *Learning in Virtual Environments* (pp. 31-54). Frederiksberg C: Samfundslitteratur Press.
- Dirckinck-Holmfeld, L., Nielsen, J., Fibiger, B., Riis, M., Danielsen, O., Korsgaard Sorensen, E., ... Ritterbusch, W. B. (2009). Problem and Project Based Networked Learning. In L. Dirckinck-Holmfeld, C. Jones, & B. Lindström (Eds.), *Analysing Networked Learning Practices in Higher Education and Continuing Professional Development* (pp. 155-175). Sense Publishers.
- Dohn, N. B (2010). Teaching with wikis and blogs: Potentials and pitfalls. *Proceedings of the 7th International Conference on Networked Learning 2010* (pp. 142-150), 3-4 May, Aalborg, Denmark. Retrieved 23 Sep 2013 from: <http://www.lancs.ac.uk/fss/organisations/netlc/past/nlc2010/abstracts/PDFs/Dohn.pdf>
- Edwards, R., K. Nicoll, N. Solomon, and R. Usher. 2004. Rhetoric in educational discourse. London: Routledge.
- Feenberg, A. (1999). Whither Educational Technology? *Peer Review*, 1(4), pp. 4-7.
- Friesen, N. and Lowe, S. (2012). The questionable promise of social media for education: connective learning and the commercial imperative. *Journal of Computer Assisted Learning*, 28, 183-194
- Hannon, J. (2009). Disorienting spaces: Engaging the multiple "student" in online learning Paper presented at the Same places, different spaces, Ascilite conference, December 6-9, Auckland, New Zealand.
- Hannon, J. (2013). Incommensurate practices: Sociomaterial entanglements of learning technology implementation. *Journal of Computer Assisted Learning*, 29(2), 168-178.
- Hemmi, A., Bayne, S., & Land, R. (2009). The appropriation and repurposing of social technologies in higher education. *Journal of Computer Assisted Learning*, 25(1), 19-30
- Lakoff & Johnson (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Latour, B., Jensen, P., Venturini, T., Grauwin, S. and Boullier, D. (2012) 'The whole is always smaller than its parts' – a digital test of Gabriel Tarde's monads. *The British Journal of Sociology* 63 (4), pp. 590-615
- Law, J. (2009). Actor Network Theory and Material Semiotics. In B. Turner (Ed.), *The New Blackwell Companion to Social Theory* (pp. 141- 158): Blackwell Publishing.
- McLoughlin C & Lee M (2010) Pedagogy 2 0: Critical Challenges and Responses to Web 2 0 and Social Software in Tertiary Teaching. In M. Lee & C. McLoughlin (Eds.), *Web 2.0-Based E-Learning: Applying Social Informatics for Tertiary Teaching* (pp. 43-69). Hershey, Pennsylvania: IGI Global.

- Ponti, M., & Ryberg, T. (2004). Rethinking virtual space as a place for sociability: theory and design implications. In S. Banks, P. Goodyear, V. Hodgson, C. Jones, V. Lally, & D. McConell (Eds.), *Proceedings of the Fourth International Conference on Networked Learning 2004* (pp. 332–339). Lancaster: Lancaster University.
- Ravenscroft, A. Warburton, S., Hatzipanagos, S. & Conole, G. (2012). Designing and evaluating social media for learning: shaping social networking into social learning? *Journal of Computer Assisted Learning*, 28, 177–182
- Rongbutsri, N., Khalid, M. S., & Ryberg, T. (2011). ICT support for students' collaboration in problem and project based learning. In J. Davies, E. de Graaf, & A. Kolmos (Eds.), *PBL Across The Disciplines* (pp. 351–363). Aalborg Universitetsforlag.
- Rongbutsri, N. (Forthcoming). *Collaborative Learning Tools - Adoption for Knowledge Construction in Problem-Oriented Project Based Learning* (PhD thesis). Aalborg University.
- Ryberg, T. (2008). Challenges and Potentials for Institutional and Technological Infrastructures in Adopting Social Media. *Proceedings of the 6th International Conference on Networked Learning* (pp. 658–665), Halkidiki, Greece
- Ryberg, T., & Larsen, M. C. (2012). Tales from the Lands of Digital Natives - A Journey to Neverland. In V. Hodgson, C. Jones, M. de Laat, D. McConnell, T. Ryberg, & P. Sloep (Eds.), *Proceedings of the Eighth International Conference on Networked Learning 2012* (pp. 543–550). Retrieved from <http://www.lancaster.ac.uk/fss/organisations/netlc/past/nlc2012/abstracts/pdf/ryberg.pdf>
- Selwyn, N. (2012). Social Media in Higher Education. *The Europa World of Learning 2012*. Retrieved 23 Sept 2013 from <http://www.educationarena.com/pdf/sample/sample-essay-selwyn.pdf>
- Sfard, A. (1998). On Two Metaphors for learning and the Dangers of Choosing Just One. *Educational Researcher*, 27(2), 4–13.
- Sorensen, E. (2009). *The Materiality of Learning: Technology and Knowledge in Educational Practice*, Cambridge and New York: Cambridge University Press.
- Suchman, L. (2007) *Human–Machine Reconfigurations: Plans and Situated Actions* (2nd ed.). Cambridge University Press
- Tolsby, H., Nyvang, T., & Dirckinck-Holmfeld, L. (2002). A Survey of Technologies Supporting Virtual Project Based Learning. In S. Banks, P. Goodyear, V. Hodgson, & D. McConell (Eds.), *Proceedings of the Third International Conference on Networked Learning - A research based conference on e-learning in Higher Education and Lifelong Learning* (pp. 572–580). Lancaster: Lancaster University. Retrieved from <http://www.networkedlearningconference.org.uk/past/nlc2002/proceedings/papers/40.htm>
- Tolsby, H. (2009). Virtual Environment for Project Based Collaborative Learning. In L. Dirckinck-Holmfeld, C. Jones, & B. Lindström (Eds.), *Analysing Networked Learning Practices in Higher Education and Continuing Professional Development* (pp. 241–258). Sense Publishers.
- Williams, R., Karousou, R. & Mackness, J. (2011). Emergent Learning and Learning Ecologies in Web 2.0. *International Review of Research in Open and Distance Learning* 12 (3), March