Title: Strategic development of educational technologies

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Introduction

This paper addresses strategic development of educational technologies, in a case study of a Swedish University exploring potential for social media as educational technology. The purpose is highlighting how social media was embedded and entangled with formal information and communication systems (ICTs), by involving autonomy and risk as valuable analytical concepts.

Strategic development of educational technologies is an important matter for all Universities, in its ascribed potential to change things. Dutton and Loader (2004) claim that ICT are shaping the future of education, research and the sciences regarding access: information access, access to people, access to services and access to technology. Ferneding (2003) mean that educational reform policy is marked by technological determinism, in need of a more deliberative approach (see also Feenberg and Friesen, 2012). Selwyn (2013) argue that education as an institution should be reconfigured as a set of relations with radical rethinking of processes and practices. Digital technology is therefore not to be seen as "a destiny but a scene of struggle" (Feenberg, 1991:14) where technical action is an exercise of power (Feenberg and Friesen, 2012).

Understanding the interplay of higher education and technology in strategic development is also embedded in considerations of how theoretical foundations of teaching and learning in higher education actually is reflected in practice where technology is present. Kirkwood and Price (2011) have studied hopes and dreams of technologies for teaching and learning, finding an over-emphasis on technological manifestations and a neglect of pedagogical considerations. They ask if different technological innovations really are educational innovations, and their main hesitation concerns how technology seldom is used to reinforce and promote active learning. Kirkwood and Price find that an informed design in the use of technology is underpinned by beliefs about teaching and learning with technology. They argue for a transition from teacher-centred to learner-centred pedagogies and from technology-led to user-led conceptions of technology.

In this text aforementioned complexity and issues are contextualised as social media in relation to Learning Management Systems (LMS). Selwyn (2011) brings forward the relevance of social media as educational technology for higher education by posing questions:

> *What are the key features of social media and just what is their significance to contemporary higher education? How are social media applications currently being used in higher education settings? What changes does higher education need to make in order to remain relevant in the apparently fast-changing digital age? (Selwyn, 2011)*

The formal ICT-system in a higher education organisation is an often over-looked aspect, and at the same time highly powerful structural component of learning. Every University has

some kind of LMS, which functions as a platform for teacher-student interaction based in the formal education structures of courses and programs. The interplay with other educational technologies, resembling social media, can be found in a discussion of what open learning means for LMS – open learning meaning self-managed learning (see for example Cunningham, 1987). Mott (2010) presents LMS in the context of distinguishing them from personal learning systems (learner-oriented and individually managed) and open learning systems (combining secure, private, proprietary institutional network and the public, dynamic, social web). A problem is the double necessity for a LMS: both a course management system and a student-centred application. LMS is an educational technology in the sense of it being a platform, rooted in the official and general implementation for a legally secure system. Critique towards LMS is how it is primarily constructed as a teacher-centered approach (Mott, 2010).

Social media is in this perspective seen as part of the open learning system, and is defined as social network site (SNS)s:

> *We define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (boyd and Ellison, 2007:211).*

There are hundreds of SNS sharing these characteristics, but at the same time differ. Facebook is structured towards connecting existing social relations. Twitter has more a character of an open plaza, offering connecting to others based on interest more than relations. Where Twitter has a limit of 140 characters, Facebook has no such limits. For Twitter and its more open settings, this creates issues of search possibilities and a value for news gathering and/or public mobilising activities. For Facebook the issues have been concerning the more closed aspects – security and moral aspects like cyber-bullying – and how commercial aspects like ads are part of the site. Facebook has its roots in companies developing services used on personalised media, not necessarily linked to work. Its connotations are more towards open and private.

It is possible to see that social media structures information and communication more openly and collaboratively than LMS, also involving possibilities of more private relationships. This does not necessarily mean being a more learner-centered pedagogy:

> *More subtly, these technologies are also associated with an enhanced social autonomy – with young people now used to having increased control over the nature and form of what they do, as well as where, when and how they do it. (Selwyn, 2011)*

Garfinkel (2000) claims that privacy is "about self–possession, autonomy, and integrity" which concerns the "right of people to control what details about their lives stay inside their own houses and what leaks to the outside". Selwyn (2011) reasons whether there is a "digital disconnect between students and their education institutions". Strategic development of educational technologies is entangled in all this.

Method

A case study is made of a University exploring potential for social media as educational technology. The case study brings possibilities to approach complexity, focusing process rather than outcomes, discovering rather than to prove (Yin, 1994). Ascribed drawbacks with

a case study are questions concerning validity and reliability, which can be met by a transparent argumentative description of the process:

> Like other good craftspeople, all that researchers can do is use their experience and intuition to assess whether they believe a given case is interesting in a paradigmatic context and whether they can provide collectively acceptable reasons for the choice of case. (Flyvbjerg, 2006: 233)

I have done a qualitative analysis of material, mainly consisting of official written texts. Data is primarily official policy documents and documentation, especially the evaluation report. Narrowing data-gathering to official material creates both an ethically sound approach and a strategy to deepen analytical possibilities by focusing on what was said to actually have happened. It means analysing the project in a more holistic matter. Lost on the way are differences within the project. The official narrative of the project of course cannot be said to represent all narratives. But it can represent something transparent and available that can give an important insight into strategic development of educational technologies. Material is therefore the official web site: http://www.mah.se/eatit.

My role was being a project manager for a short period of time, and creating and facilitating a course as one of the projects experiments, and as a researcher researching the process in a scientific way afterwards. Doing a case study in your own organisation highlights all the complexity that exists in scholarship of teaching and learning: validity and reliability when one is researching ones own organisation and the actions of both yourself and others. Kreber (2013) challenges validity as evidence-based practice in SOTL by using Habermas's validity claims and Arendt's categorisation of human activity, aiming to broaden "our understanding of the scholarship of teaching as action would address hitherto neglected validity claims, and emphasise the linkages between scholarship and public engagement". Newton and Burgess (2008) discuss validity in different forms for educational action research:

> *An action research process that reconceptualizes validity as contingent upon the mode of research being used promises to move action research toward a form of research that builds knowledge, improves practice, and attends to the moral, political, and emancipatory dimensions of teaching and research. (Newton and Burgess, 2008:8)*

In the case study I am primarily bringing forward structural facts that are indisputable: when the project started and how, which people were involved and how, processes used in the project, content in experiments and workshops. It is this topography rather than thick descriptions of cultural aspects that is focused. Analysis covering the exploration of "why" is arguments based on using risk and autonomy as analytical concepts, transgressing the evaluation results not only to one University but also to others.

The Case

The case is a project called E.A.T.-it, at Malmö University in Sweden that took place in the year 2012. Project goal was to explore enhancing learning processes with everyday IT and with a student perspective. Everyday-IT was understood in the sense of modern technology that was used in everyday life. It was also an argument of making use of the technology in the pockets of people instead of big expensive IT systems. Student perspective was the goal of approaching all activities with the perspective of the students, and also with the wish for the

project to be student-driven. Two different activities were made in the project: 1) Workshops to get a hands-on experience of different digital tools, 2) Experiments in courses to explore learning processes and everyday IT. The workshops targeted interested co-workers, to test everyday-IT. The experiments were students and co-workers developing different forms of everyday-IT in learning. A student focus was to saturate all activities. In summary the project goals were to 1) Make everyday technology to a more natural part of the learning process, 2) Lower peoples guard facing new technical aids, 3) Get employees together with students to find more and better dimensions in learning (http://www.mah.se/eatit). Illustrating further the projects ambitions and meanings is present in the vision of the project:

> *The vision of the project was to demonstrate the possibilities for Malmö University to be the leader in the everyday IT can be used as a fundamental part of learning - to stimulate and develop learning processes, facilitate students' life-long learning, and lay the foundation for digital communication skills from a citizen perspective. (Evaluation report, authors translation)*

General findings

Project initiative came from the Deputy Vice-Chancellor and external persons. Meetings took place half a year before the project was formed. Many different people attended the meetings. External persons were technology-oriented: the founder of Bambuser (a live-mobile-video service), an entrepreneur in software, an "internet guru" and social media advisor. Internal persons came from all over the University. Agenda for the meetings were communicated as being the "IT strategy group". Malmö University people continually during the meetings stressed the learning aspects. The technology-people were driving the importance of digital competence, having a perception of the University not having digital competence. In this project beginning tensions regarding internal-external and learning-IT were created and articulated.

Social media in the project were both content for workshops as well as exploring new ways of working together. A Facebook group was initiated, open for everyone involved: http://www.facebook.com/groups/eatit.mah/. This Facebook group was also studied and analysed by interaction design students as part of one of the activities in Experiments. Platform for gathering documents, and collaborative work was Google docs. Several Google hangouts were made to develop the project. Facebook as well as Bambuser, were themes for two different workshops.

The workshops were technology-oriented, made and conducted by the external technology-people aiming to align with students in different ways. In the visionary meeting talks, the project was narrated as the "big bet" (http://www.mah.se/Nyheter/Nyheter-2012/Prorektor-om-storsatsningen-pa-vardags-IT-i-larandet/). With big expectations meeting real life, disappointments were created. Not many people attended the workshops according to discussions in the project group. About 30 people attended each workshop and several attended more than one workshop. The participants were curious, and some were critical. Many had links to the project, by having being part of earlier meetings, or having a more prominent role.

Result from workshops show a lack of how to *integrate* everyday-IT with the LMS, somewhat resembling Mott's vision of an open learning system. The dichotomy was created and upheld, which did not match the everyday life of co-workers or students. Because of the detachment of everyday life where academic structures depend on the LMS, everyday-IT like social media ended up in a new project after this project: aiming to buy a new LMS. An either

or norm was created: to choose between social media *or* the LMS. For the technology people the best user-interface was social media services, devaluing the LMS.

Two experiments were triggered by the project and one was linked to the project. They were all integrating different forms education with social media. Experiment 1 was interaction design students analysing the Facebook group for EAT-it. Experiment 2 was using films to engage students in learning how to teach mathematics, pre-existing the project as a research project involving creating a new course, led by a full professor who also partly participated in meetings in the beginning of the case. Experiment 3 was media and communication studies students, with me as a teacher, participating in the project to test action research methods to come up with a suggestion for a plan to evaluate the project.

The starting point for the project-evaluation was how it contributed to formulating a learning and IT-strategy. The evaluation-report argues that the project has been an agenda setter in a narrow way, reaching the already converted being too positive in internet's possibilities, not involving and understanding of problems attached to being a University, which pushed away people. Student involvement is seen as positive, contributing to ways how to work with student involvement in development processes. The workshops claim to have contributed to testing IT not learning situations, not reaching the target group (lacking competence and eager to learn technology) instead the already digital media literate attended. The experiments were found to create experiences and examples on how to use IT as a support for learning as open, and collaborative with students. But the experiments were islands: "experiments for experiments sake" (Board member, Evaluation report).

A tension is distinguished between the goal of being iterative process and the project as a set strategic change work with a more or less stated mission and vision. Concerning the lack of research as informing and integrated in the project, a paradox concerning the relation to experimentation is stated, here exemplified by these quotes:

> *This is an academic environment and then one needs to have research with you. (Teacher, Evaluation report, authors translation)*
>
> *It was liberating as a teacher to be able to try and push the boundaries with a small group. (Teacher, Evaluation report, authors translation)*

In the official aftermath, four findings were distinguished as important to strategically aim for: 1) Students as co-creators, 2) Openness both digitally and physically, 3) Education and work reflects transparency and quality, 4) Malmö University contributes to the learning community.

What is articulated are tensions and differences between open and closed, which could also be called friction (Tsing, 2010). The experimental character of the project was outside business as usual, with all the benefits and drawbacks coming out of it. Being outside, not linking to existing structures, like the LMS, created new voices in IT development, mainly the students. The critique of the LMS, was present during the whole process but not mentioned in the evaluation report. At the same time social media was not mentioned as an educational technology. Both the LSM and social media become technological manifestations of an IT-strategy. The project is a case displaying hopes and dreams, the vision, rather than meeting and aligning with reality. It resembles well the aforementioned study of Kirkwood and Price (2011), displaying an over-emphasis on technological manifestations and a neglect of pedagogical considerations.

Autonomy and risk

Understandings of strategic development of educational technologies can benefit from applying autonomy and risk as analytical concepts. Autonomy represents an academic ideal, often in the sense of desired as a political goal and seen as liberty. Autonomy bears a certain meaning in relation to education, especially in the theories of education philosopher Paulo Freire, claiming that there exists a more ambivalent role of authority in education: liberation requires freedom, and freedom implies autonomy and responsibility and must be won by the oppressed, it cannot be given to them. More concretely Freire discusses imbalance in the traditional teacher-student relationship and argue that we must strive for greater equality in that relationship (Freire, 1998).

Research on autonomy in the context of the interplay between higher education and digital technologies illustrate tensions regarding different academic and higher education-norms embedded in educational technologies. Leadbeater's (2006) argument is that what is needed is to recognise the potential of Web 2.0 and social software to enable the transformation of pedagogy, design of learning tasks and promotion of learner autonomy and creativity. Ecclestone (2002) discusses learning autonomy in a sense of exploring its motivating and self-going students aspects in the context of assessment. Boud (2012) distinguish between autonomy as: an ideal of individual behaviour, an educational practice enhancing student independence and decision-making, and as an integral part of learning, where learner activity is key. Selwyn (2011) see it as a situation where there is a digital disconnect between the organisation and culture of Universities and young people that are used to enhanced social autonomy from digital technology. Selwyn also argues that digital technology can create a tension of de-professionalisation, not having the competence, and not have the autonomy to decide not to acquire the competence. According to Selwyn the tension for Universities educational role therefore also lie in it's rooting of professionalism in doing research, not in doing teaching. Selwyn (2013) approach the global and national aspects of education and technology as a case of autonomous states or not, in the meaning of national sovereignty. For Ferneding (2003) education is at risk in relation to education, and what is at risk is the possibility to be autonomous in the meaning of a deliberative approach. Englund (2012) also builds on Habermas deliberative communication, and sees it as something that hopefully will contribute to the autonomy of the individual student, in the sense of a public autonomy implying the individual in a societal context. The opportunity lies in intellectual autonomy and the capacity to form independent decisions.

Related to theories of autonomy are perceptions and behaviours of risk. Autonomy triggers empowerment, and that is limited by perceiving a risk in deploying this autonomy. Risk is also a central component of change, the orientation of strategic development of educational technologies. Willingness to take risk, autonomy and innovativeness and also proactiveness and competitive aggressiveness is said to be a definition of entrepreneurial orientation (Lumpkin and Dess, 1996). Risk can be perceived differently by different people and the willingness to deploy autonomy is limited by perceived risk. Educational technology researchers use the concept risk, not as a theoretical or analytical concept but as describing a change where technological deterministic approaches and politization are risk factors for (autonomous) education (Ferneding, 2003; Selwyn, 2011 and 2013). Risk is referred to in earlier research, building on Beck (1992) sketch of a risk society. In a risk society we are searching to assess and reduce risk's seen and attached everywhere. At the same time institutions are unsuccessful in controlling the risks they have created. This leads to institutions as defensive. In a risk society Beck also sees that fear of risks has the possibility of empowerment, stimulating autonomy. Furedi (2006) instead sees the 'culture of fear' hindering thinking 'what can' and 'what is likely' and in that inhibiting autonomy. A more deepening discussion on risk theory furthers these understandings.

In the context of risk management, uncertainty exists whenever your knowledge or understanding of an event, consequence, or likelihood is inadequate or incomplete. In this context understanding the interplay of higher education and technology in the quest for innovation, risk management becomes the coordinated set of activities and methods that is used to direct an organization and to control the many risks that can affect its ability to achieve objectives. Helsloot and Jong (2006) investigate the potential distinguish risks that are unique to higher education (custodianship of knowledge), and that the risks are dependent on the development of society (microcosm of society) and the risks facing a educational establishment is no different from those facing other organization (training organization). Through surveys, meetings and interviews they show that all involved in organisations lack knowledge on various risks in their environment.

Risk in relation to education has been the attention of educational theorist Geert Biesta (2013), in the book *The beautiful risk of education*, where risk is infused with positive connotations: that real education always involves a risk, because education is about lighting a fire, is an encounter between human beings, where students are subjects of action and responsibility. Biesta thereby opposes the risk aversion that characterizes many contemporary educational policies and practices and makes a strong argument for giving risk a central place in educational endeavours. To create a critical discussion Biesta mean that these educational concepts are key: creativity, communication, teaching, learning, emancipation, democracy, and virtuosity. What Biesta argues is that evidence-based education is to blame, for its eradication of risk and a desire for total control over the educational process. Here risk becomes letting the educational process be "free" from control, linking back to the intimate relation between autonomy and risk.

Understandings of the project applying autonomy and risk

The project was aiming for exploring social media for students. This is marked by the desire of increasing learning autonomy, social autonomy and public autonomy. But what was created was a freedom from rather than a relationship between research and education, teachers and students, and between technical skills and pedagogically informed use of technology. It was not a digital disconnect but a pedagogically disconnect with technology and with research. Autonomy became mainly the ideal of individual behaviour, in some parts an educational practice enhancing student independence and decision-making, and not as an integral part of learning.

The project was grounded in clarified risks, and activities were clearly oriented towards seeking safety. For the project the perception of risk was present in the participating people, but not necessarily in the organisation. The perceived risk was the University need to include and work with students on other platforms otherwise they will attend other Universities. The risk was also in the competition of not only other Universities but also companies and the Internet: education being accessed everywhere. In some regards the project was trying to reduce risk. But in these processes the perceptions of risk and safe was very different. There was resistance because the project was seen as a risk (technologically, legally, administrative, learning-wise) rather than the search for safety.

Some situational snapshots of comparing LMS and social media from the perceptions and behaviours risk and safety also provide insight to reactions of the project as a change process. A boundary practice of relevance for reducing risk is informed consent. For LMS, or e-mail as work process, the issue of informed consent does not occur, but for participating in social media in different ways informed consent became an issue and articulated not so much among the participants in the project but among others in the organisation. Social media became a distancing from business as usual, as should be in a learning innovation process, but

the goal of the project was seen as “doing social media” rather than “doing learning innovation”. Risk aspects of social media that came up during the project were blurring boundaries and integrity, as well as misbehaviour. And at the same time social media created safe communities for students in a course connected to the project.

Technologically both LSM and social media have their risks and both have security systems to hinder this. What we see is the LMS and social media being perceived in different ways. For social media it is depending on what individuals see as safe and/or risk and what other individuals do with the material online. For some it is valuable that social commenting is made public. For some it is involved with some kind of risk. For the LMS the clear-cut boundaries can be seen as safe-making in the roles of the teacher and the student, where digital contact is one on one and the LMS is mainly for administrative purposes.

Acknowledging and making use of social medias possibilities of weak ties in learning innovation processes, means working with a non-coercive approach. Weak ties are individuals associations with acquaintances. Siemens (2005) suggests that weak ties play an important role in prompting and supporting innovative practices. The strengths lie in partly how individuals can benefit in various ways from these weak ties, partly in that weak ties often involve new and other individuals than usually tied to with the opportunity to gain new information (Gravenotter, 1983). The weak ties are possible long-term ties not only limited by project time that can be mobilised. Weak ties can bear authenticity, and create the foundations for shared responsibility. This creates an opportunity to endure the frustration that a shared learning innovation process necessarily embodies.

Practical implications

What has been shown is the value of understanding characteristics of social media in relation to LMS. One practical implication is that development of either social media or the LSM creates tensions and difficulties rather than aligning an organisation. The dichotomies can be further created and upheld if each technology is attached to external respectively internal experts, awakening an academic need for autonomy as liberty from. Change processes must include research, as basis, as people as researching the process in a scientific way.

Strengthening this practical implication is that what aligned different issues and stakeholders, were infrastructures for technology. Infrastructures are both important for social media and the LMS is distribution aspects, more concretely: a wireless network that works. Related to this is the risk of the autonomous individual if social media is not included in the organisational structures for technological and pedagogical support. The boundary work needed for social media, seems to be approaching it as something different in everyday life in relation to using it as a teacher – or as a student. What strategic development of educational technologies should focus on, social media or LMS or something else, is developing educational technology skills for teachers and students as something more advanced than giving people the possibility to develop the digital competence: as something in need of research and research-informed actions. Both social media and LMS struggle with meaning concerning learning, from teacher-centred to learner-centred pedagogies and from technology-led to user-led conceptions of technology. Strategic development of educational technologies cannot only be about using Facebook as in everyday life. It must involve what is means for learner-centered pedagogies and user-led conceptions of technology. Everyday IT as a theme seems explicitly to have had too few links to creating learner-centred pedagogies and user-led conceptions of technology. But what was also revealed was how the LMS could stand for the same critique.

What can be distinguished is that strategic development of educational technologies needs to acknowledge the power aspects upholding academia today: owner of information is powerful, sharing could mean loosing power, working together means loosing autonomy,

learning from each other involves risk-taking of losing authority (especially concerning teacher-students). It is in these issues that meaning-making of educational technologies successfully can be strategically developed.

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