Added Values and Challenges Social Media Represent in the Hybridisation of Teacher Training

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Abstract

How do student teachers of our time acquire information? How do they find their way to knowledge? Students and newly qualified teachers establish, maintain and develop digital networks as an important source of development in the school subject and subject didactics. In a teacher education context, it is important to know this new interaction patterns that occur between children, adolescents and adults. This article discusses what teacher educators should be aware of when they orchestrate and facilitate learning with new technologies.

The methodological approach is based on a theoretical review, previous empirical data and our own experiences as teachers in teacher training courses.

Our findings related to the tree Ps (participation, personalization and productivity) indicate potential and challenges for teachers and institutions to cope with. The triangle of Ps is framing the complexity in a constructive way. Findings and discussions related to the characteristics of each of the angles indicate we have to change practice and task descriptions. This mean we have to implement our web 2.0-pedagogy and design learning (environment and activities) which supports purposeful activities, possibilities for reflection – spaces and tools which facilitate communication and sharing of ideas and understandings.

Introduction

Today digital technology plays a central role within important areas of society such as business, entertainment, transportation, art, education, and of course the media industry. The interesting question now becomes: How do students of our time acquire information? How do they find their way to knowledge? – Students use social media to communicate and to obtain information. Teacher students' activities in social media are high, both to nurture friendship and for professional development (Helleve,

Almås, & Bjørkelo, 2013). Higher education institutions are still primarily relying on traditional learning management systems (LMS). Research on what student says about being and learning in a formal online classroom (Nilsen, Almås, & Krumsvik, 2013) indicates that students learning are social and that they create supporting arenas (Facebook and Twitter) in addition to the pedagogical platform the institution offers. But also newly qualified teachers establish, maintain and develop digital networks as an important source of development in the school subject and subject didactics (Engvik, 2014).

In a teacher education context, it is important to know and gain knowledge about this new interaction patterns that occur between children, adolescents and adults. Teachers in all types of schools must also consider how the information gathering and learning that occurs in the informal learning context can be used in a school context. Web 2.0-technology allows geographically separated learners to participate in a 21st century classroom. Unifying factors associated with the recent web 2.0-technology are related to sharing, collaboration, networking and community. The characteristics of the content have changed to a more dynamic state, with a higher degree of participation and influence. Key pedagogical questions related to these changes in content and pattern of use is what learning competencies, knowledge and practices that develops.

This means that the educational foundation is challenged and a revitalization of pedagogy is in progress (Krumsvik & Almås, 2009). McLoughlin and Lee (2008) suggest a pedagogy 2.0 for network community containing three key P's "Personalization, Participation and Productivity".

With this background this article discusses what teacher educators should be aware of when they orchestrate and facilitate learning with new technologies.

Our context

The authors are both working in higher education in Norway, and are conducting courses for students in teacher training programmes. Our experience is that the generation of students entering higher education expect flexible studies. This is also acknowledged by other studies (Dahlstrom & Bichsel, 2014). Technology is embedded into students' lives and they possess digital skills. They are used to social media, working often in groups via the web and use, share and retrieve information online.

Several documents express high expectations about the potential of technology in teaching, learning and assessing online in higher education (Allen & Seaman, 2011; Johnson, Adams Becker, & Hall, 2015). But what kind of ICT skills teachers should develop during teacher education have not been discussed to any substantial degree (Kirschner, Wubbels, & Brekelmans, 2008).Current approaches to initial teacher training and in-service training in digital tools and pedagogies are insufficient for the need (Johnson, Adams Becker, Cummins, & Estrada, 2013; p.3). There is a need for new practices that respond better to the dynamics of the 21st century learning (Lieberman & Pointer Mace, 2010) and we will need teachers who can design new practices with ecological validity for a changing world (Lund & Eriksen, 2016).

We know that: (a) they learn from others than the teacher; (b) they learn from peers; (c) they don't necessarily learn all at an educational institution

These three points are by no means new. It has always been instructive to work in good study groups with clever fellow students whether you are in high school or in higher education. We also know that students' school performance is related to parents' education and access to homework help at home. However, the technology enables collaboration and competent others are more available. Capitalizing on peer-based learning is now easier (Ito et al., 2008). Students in upper-secondary school report that collaboration in social networks is a preferred strategy for homework and learning activities (Helleve, Almås, & Bjørkelo, 2013). The policies in higher education in Norway allow students to use their own devices in the classroom, and cloud-based resources are increasingly being used by students as collaborative tools. And Norway is ranking third highest among European nations for posting to social media platforms (Johnson, Adams Becker, Cummins, & Estrada, 2013). This means that they

> *"arrive equipped not only with individual technologies that they maintain and improve, but also with their own personal learning environments and social networks. (…) Computer-based activities that are set in the classroom can be continued elsewhere and then shared at school. Students' personal collections and networks, gathered inside and outside school, can become resources for learning" (Sharples, et al., 2014; p.4).*

Norwegian authorities have taken several initiatives towards teacher education for us to be ready to meet future student teachers in a good way. Despite such initiatives, a recent survey on ICT in teacher education says that "Teacher training at all levels in

Norway may not be fully meeting its responsibility of producing teachers who are sufficiently digitally literate to help learners make the most of the tools at their disposal" (Tømte, Kårstein, & Olsen, 2013; p.9). Other research justifies this by saying that "teachers may have difficulty understanding the complex relationships between technology, pedagogy and content, because these are often taught in isolation in most teacher education programs" (Koehler, Mishra, & Yahya, 2007; So & Kim, 2009).

The digital social media tools we're focusing here are increasingly used by both new teachers and students and are often called web 2.0. A short characteristic of these tools is important for later discussing for how web 2.0-functionalities can be implemented in a pedagogical setting.

Technology characteristics

Wireless connectivity, hardware miniaturisation and central data storage are main "drivers" of web 2.0. Web 2.0-tools make it easier to produce content together. File storage moving from local hard drive to the cloud simplifies sharing. This means that we see a proliferation of services that are based on relationships between people and we say that the media has become social. Social media is tailored for many-to-many communication and media content is primarily created by participants. Posting in such platforms generate an immediate dynamic from the audience. The audience access your work anywhere and anytime. And they can respond. They share, rate, like, tag or post comments to images, articles and other content. Digital technology (smart phones and the Internet) change the size, scale and dynamics of children, young people and adults' social worlds (Ito et al., 2008). Thus this technology may be a game changer in higher education (Oblinger, 2012). For the teacher it is therefore relevant to relate this to what new skills, knowledge, practices and competencies that develops. Everything from applying information to produce new expressions – and reflection of ideas are evolving.

Writing with pencil on paper is not very shareable and not searchable. Here, technology has provided affordances which cause a rethinking of the tasks and learning goals we set for our students. But it is not about finding one tool that increases learning outcomes in one learning objective. This involves a constructive process consisting of communication, learning and reflection.

Theoretical perspectives

No matter how we describe the generation of young people today (Selwyn, 2009), we meet pupils and students who have been exposed to lots of technology during their childhood. Their use of digital technologies can be seen as "a media ecology where more traditional media, such as books, television, and radio, are 'converging' with digital media, specifically interactive media and media for social communication" (Ito et al., 2008; p.8). Usage is woven into the social contexts in which technology is integrated. Activities are created between technology and its users' subjective intentions. This means that the technology will be a part of, and should be understood in the social context. In this perspective the technology will act as an artifact, created and transformed – and carrying a particular culture (Kuutti, 1996). This is helping to make knowledge visible, accessible and thus subject to sharing and imparting to others, but reveals also a potential to transform teaching and learning (Furberg & Lund, 2016). In this article we concentrate on how digital technologies can allow for a much larger repertoire of creative and innovative and collectively oriented learning activities.

Consequently this fits into our teacher's practices and the students' self-regulated learning. A broader interpretation of knowledge and teaching requires a perspective where teaching and learning takes place in very complex educational ecosystem (Shear, Gallagher, & Patel, 2011; p.12). Educational and technological changes require a framework that emphasizes a number of factors related to teaching practice and student learning. A sociocultural learning perspective emphasizes that knowledge is constructed through interaction. In this perspective, interaction and cooperation are fundamental for learning. It further highlights the context, environment and culture around the pupil. Although learning here occurs through targeted actions in a social and cultural setting, is not necessarily the consequence that students always have to work together – but that they have insight into related activities in their environment.

McLoughlin and Lee (2008) presents three Ps to describe pedagogy 2.0 adapted to our time and our network society. It is about *Personalization*, *Participation* and *Productivity*. The learners today have easy access to ideas, resources and environments that supports their learning interests and their progress occurs through personal needs and choices. This goes under the name *Personalization* which also relates to customising. The pedagogy must engage the learner in the social process of knowledge development (*Productivity*) instead of just letting them use the information and learning material as the teacher presents. The teacher must support connections,

dialogues and links within and across communities and larger networks (*Participation*) for the purpose of sharing ideas, questions and to solve problems. The core of pedagogy 2.0 is to take advantage of web 2.0's strengths in relation to self-regulation an increased degree of socialization and interactivity, access to open environments and opportunities for easier use of peers. In a triangular model McLoughlin and Lee (2008) try to visualize a new pedagogy with the principles (a) Personalization, (b) Productivity and (c) Participation.

As Selwyn (2011) states, it is not sufficient to see schools just as physical structures (buildings, corridors, classrooms). The totality of the learning session is important, "the curriculum, the activities that students engage in, students' perceptions of the learning goals in the classroom, their social interactions, the teacher's behaviour, and more" (Salomon, 1992; p.63).

Methodological Framework

The methodological approach is based on a theoretical review, previous empirical data and our own experiences as teachers in teacher training courses. The previous empirical data includes respondents from teacher education enrolled in net based courses at (anonymous institution). 56 students (66.1% female, M age = 42.5 years) completed a survey which investigated experiences and behaviours with the use of desktop videoconferencing (in-service student teachers (n=32) and master's degree students (n=24)). 11 of the students were selected for focus group interviews and we conducted observations based on the recordings from the teaching lessons. The survey was conducted in November and interviews were conducted later (February 2012). A group of students (n=11) was selected (purposeful selection, (Maxwell, 2005)) and split into two separate focus group interviews (Kvale & Brinkmann, 2009), which were based on the survey data and conducted when the courses were completed. In addition to time and settings, age, sex and demographic variables were controlled to ensure that the selection was purposeful.

Discussion of Findings

This article aims to discuss how teachers can design their teaching and learning activities in higher education in the ecology of web 2.0 and social media. According to the introduction and theoretical aspects presented, we are using the three key points; participation, personalization and productivity to focus our discussion to contribute to developing new practices.

Participation

Our research indicates that students are learning without teachers. But this does not mean that teachers are unnecessary. The students appreciate teacher-involvement but it seems like the role and context have changed. Despite every student using their own device, our findings identify that students learning are social. McLouglin and Lee (2008) state that more engaging, socially-based models for teaching and learning are needed. In our ICT-supported learning environments more than two thirds of our students report they prefer participate via chat (instead of oral talk). They participate in formal LMS-discussion-threads, open Twitter-streams and closed Facebook-groups. Some respondents indicate that using email is ousted by i.e. Facebook-communication. The degree of participation is richer in these kinds of web 2.0-tools. The sender can see: who (how many) have read the message, if there are any reply-comments, or *likes* and he can keep control of how many *followers* he got. By allowing comments and annotations by others, such personal publications allow for social constructivist forms of participation. With a greater emphasis on teacher-student partnerships in learning, we must accept the learners' productions, content, activities and contributions as part of the curriculum.

Our students find web 2.0-tools like Facebook easy to use for learners to engage deeply with their peers. Findings from different student groups show that students who engage in such net based activities, they learnt not only about the profession they are entering, but also about themselves as practitioners.

Personalization

Terms describing personalization like *learner-centred*, *self-regulated* and *responsibility of your own learning* are not new to teachers. But we find that the use of ICT add some reflections and need some extra decisions. Central to the development of personalization in this context is moving on from LMS's, towards an approach that are more learner-centric (McLoughlin & Lee, 2008). Schools that make use of hybrid learning models find that using both the physical and the virtual learning environments to their highest potentials allows teachers to personalize the learning experience and engage students in a broader variety of ways (Johnson, Adams Becker, & Hall, 2015), but our respondents state difficulties choosing a suitable platform for learning and communication. Quotes from colleagues like: "Should we use Google Apps for Education, Facebook or Fronter?" and "Do I have to teach netbased? Or, how much can be done on campus?" express insecurity but also an understanding of teaching in the 21st century.

Our findings are related to studies where some or most activities are recorded. Our surveys show that the students want to choose between live and recorded activities and lectures. This corresponds with the desire of learning anywhere and anytime. Interview also revealed that this self-regulation and flexibility also provides dilemmas, i.e. related to collaboration and the need for social communities. A detailed schedule with mandatory checkpoints is valued, for students to be deeply committed to the study.

Constructing personal learning environments (PLE) can help integrate formal and informal learning in higher education, to maximise the potential of the new tools to support learning by capitalising on the competencies and skills students bring into the classroom (McLoughlin & Lee, 2010). We find a broader understanding of the learning situation among our respondents. Teachers admit that "my teaching is a lot more than me". Teachers and students are expanding their learning space, and incorporate YouTube, blogs, wikis, experts, peer-groups, etc. Establishing and developing such a community "adds a further dimension to participative learning by increasing the level of socialization and collaboration (…) by fostering connections that are often global in reach" (McLoughlin & Lee, 2008; p.17).

Productivity

Changing from students as consumers to producers has long been taking place in the focus of pedagogical practice in higher education. The shift to students as creators, is by NMC (Johnson, Adams Becker, & Hall, 2015) described as a fast trend in Scandinavian schools for the next one to two years. Our research among teacher students since 2011 indicates that they are able to cope with the practical and technological issues. The technology is not an obstacle. This paves the way for increased productivity. They produce resources and share various contributions. We identify multimodal texts, hyperlinks, presentations, movies, blogs, comments, recordings from practice, etc. Our research reveals that students also establish their own channels "outside" the institution (i.e. Facebook-groups). A larger specter of possible formats, are nevertheless also among our students perceived as difficult for those from a conservative tradition.

A challenge identified for the teacher is that students still are doing lots of other things while being taught. But several of these activities are closely related to teaching. We find students checking URLs and resources on Internet during lectures, and sometimes they share and contribute to the lecture with their findings. 25 % of the students said they asked more questions in online meetings than in campus sessions

and interviews did reveal, that the chat opportunity can be used to "ask questions we don't dare to ask in an auditorium".

Our research shows that students are capable of creating, producing and sharing ideas, concepts and knowledge. And they contribute with their inputs both spontaneous and when asked. This is in accordance with the findings in the Norwegian ICT Monitor (Norgesuniversitetet, 2015), which also emphasize the levers of change spotted in developing learning objectives, assessment and learning activities, so that these can represent a whole in such a way that they contribute to better learning outcomes and constructive alignment (Biggs & Tang, 2011). This means we, as teachers, have to prepare for and organize our learning environments in line with this perspectives and our students' practice. Our reading lists, activities, tasks should be open and flexible to the students contributions, and the social constructed knowledge. Their creative productions can in this way, validate their own learning and knowledge.

Summing up

Collaboration and relationships is one of the pillars of web 2.0 and social media. The main aim of this article is to make contributions to how teacher educators can design their teaching and learning activities in line with these perspectives. When the interaction between communication, technology and daily activities change, it provides opportunities to build good learning environment within the class but also outside their four walls. This is what we define as a basis for the debate of hybridisation. What should be done where (online, on- or off-campus), by whom and at what time? It also provides opportunities for pupils and students to create coherence in their learning efforts across various venues (formal/informal) and across studies and semester (McLoughlin, 2013; p.189). Hopefully, these perspectives and this practice in teacher education also will prepare the new teachers for their practice in a 21st century school.

Today's students have high expectations of how they should learn, they select technologies and learning environment that is tailored to their needs and they have a sophisticated understanding of how they can manipulate both technologies and learning environments to their advantage (Conole, De Laat, Dillon, & Darby, 2008). Shared responsibility accelerates better quality learning, but teachers have to lead the change. We have to enable the teachers to be the drivers of pedagogic innovation for their students (Laurillard, 2012). Offering relevant teacher education it is essential that the institutions reflect these issues. Our findings related to the three Ps indicate potential and challenges for teachers and institutions to cope with. The triangle

(McLoughlin & Lee, 2008) is framing the complexity in a constructive way describing three keywords as tools for constructing, analysing, testing and sharing innovative learning designs. Findings and discussions related to the characteristics of each of the angles indicate we have to change practice and task descriptions. This mean we have to implement our web 2.0-pedagogy and design learning (environment and activities) which supports purposeful activities, possibilities for reflection – spaces and tools which facilitate communication and sharing of ideas and understandings.

References

1. Allen, I. E., & Seaman, J. (2011). *Going the Distance: Online Education in the United States, 2011.* Wellesley: Babson Survey Research Group.
2. Biggs, J., & Tang, C. (2011). *Teaching for Quality Learning at University* (4th ed.). Maidenhead: McGraw-Hill/Society for Research into Higher Education and Open University Press.
3. Conole, G., De Laat, M., Dillon, T., & Darby, J. (2008). 'Disruptive technologies', 'pedagogical innovation': What's new? Findings from an in-depth study of students' use and perception of technology. *Computers & Education, 50*(2), 511-524.
4. Dahlstrom, E., & Bichsel, J. (2014). *ECAR Study of Undergraduate Students and Information Technology, 2014.* Louisville: EDUCAUSE.
5. Engvik, G. (2014). The importance of networks for newly qualified teachers in upper secondary education. *Educational Research, 56*(4), 453-472.
6. Furberg, A. L., & Lund, A. (2016). En profesjonsfaglig digitalt kompetent lærer? Muligheter og utfordringer i teknologirike læringsomgivelser. In R. J. Krumsvik (Ed.), *Digital læring i skole og lærerutdanning* (pp. 26-48). Oslo: Universitetsforlaget.
7. Helleve, I., Almås, A. G., & Bjørkelo, B. (2013). Use of Social Networking sites in Education - Governmental recommendations and actual use. *Nordic Journal of Digital Literacy, 7*(4), 191-207.

8. Ito, M., Horst, H., Bittanti, M., Boyd, D., Herr-Stephenson, B., Lange, P. G., Pascoe, C. J., Robinson, L., Baumer, S., Cody, R., Mahendran, D., Martínez, K., Perkel, D., Sims, C., & Tripp, L. (2008). *Living and Learning with New Media: Summary of Findings from the Digital Youth Project.* Cambridge: MIT Press. Retrieved from http://digitalyouth.ischool.berkeley.edu/files/report/digitalyouth-WhitePaper.pdf

9. Johnson, L., Adams Becker, S., & Hall, C. (2015). *2015 NMC Technology Outlook for Scandinavian Schools: A Horizon Project Regional Report.* Austin, Texas: The New Media Consortium.

10. Johnson, L., Adams Becker, S., Cummins, M., & Estrada, V. (2013). *Technology Outlook for Norwegian Schools 2013-2018: An NMC Horizon Project Regional Analysis.* Austin, Texas: The New Media Consortium.

11. Kirschner, P., Wubbels, T., & Brekelmans, M. (2008). Benchmarks for Teacher Education Programs in the Pedagogical Use of ICT. In J. Voogt, & G. Knezek (Eds.), *International Handbook of Information Technology in Primary and Secondary Education* (20th ed., pp. 435-447). New York: Springer Science + Business Media.

12. Koehler, M. J., Mishra, P., & Yahya, K. (2007). Tracing the development of teacher knowledge in a design seminar: Integrating content, pedagogy and technology. *Computers & Education, 49*(3), 740-762.

13. Krumsvik, R., & Almås, A. G. (2009). The digital didactic. In R. Krumsvik (Ed.), *Learning in the network society and the digitized school* (pp. 107-139). New York: Nova Science Publishers, Inc.

14. Kuutti, K. (1996). Activity Theory as a Potential Framework for Human-Computer Interaction Research. In B. A. Nardi (Ed.), *Context and Consciousness. Activity Theory and Human-Computer Interaction* (pp. 17-44). Cambridge: Massachusetts Institute of Technology.

15. Kvale, S., & Brinkmann, S. (2009). *Interviews: learning the craft of qualitative research interviewing.* Los Angeles: SAGE.

16. Laurillard, D. (2012). *Teaching as a Design Science.* New York: Routledge.

17. Lieberman, A., & Pointer Mace, D. (2010). Making Practice Public: Teacher Learning in the 21st Century. *Journal of Teacher Education, 61*(1-2), 77-88.

18. Lund, A., & Eriksen, T. M. (2016). Teacher Education as Transformation: Some Lessons Learned from a Center for Excellence in Education. *Acta Didactica Norge, 10*(2), 53-72.

19. Maxwell, J. A. (2005). *Qualitative research design. An interactive approach.* London: Sage Publications.

20. McLoughlin, C. (2013). Teacher Professional Learning in Digital Age Environments. In M. A. Flores, A. A. Carvalho, F. I. Ferreira, & M. T. Vilaça (Eds.), *Back to the Future. Legacies, Continuities and Changes in Educational Policy, Practice and Research* (pp. 189-206). Rotterdam: SensePublishers.

21. McLoughlin, C., & Lee, M. J. (2008). The Three P's of Pedagogy for the Networked Society: Personalization, Participation, and Productivity. *International Journal of Teaching and Learning in Higher Education, 20*(1), 10-27.

22. McLoughlin, C., & Lee, M. J. (2010). Personalised and self regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology, 26*(1), 28-43.

23. Nilsen, A. G., Almås, A. G., & Krumsvik, R. J. (2013). Teaching Online or On-Campus? – What Students Say About Desktop Videoconferencing. *Nordic Journal of Digital Literacy, 8*(01-02), 90-106.

24. Norgesuniversitetet (2015). *Digital tilstand 2014.* Tromsø: Norgesuniversitetet. Retrieved from https://norgesuniversitetet.no/file/3658/download?token=pU0rwnQK

25. Oblinger, D. G. (2012). IT as a Game Changer. In D. G. Oblinger (Ed.), *Game Changers: Education and Information Technologies* (pp. 37-51). Washington D.C.: EDUCAUSE. Retrieved from http://net.educause.edu/ir/library/pdf/pub7203.pdf

26. Salomon, G. (1992). What does the design of effective CSCL require and how do we study its effects? *SIGCUE Outlook, 21*(3), 62-68.

27. Selwyn, N. (2009). The digital native – myth and reality. *Aslib Proceedings, 61*(4), 364-379.

28. Selwyn, N. (2011). Will Technology Displace the School. In N. Selwyn (Ed.), *Education and Technology. Key Issues and Debates* (pp. 139-161). London: Continuum International Publishing Group.

29. Sharples, M., Adams, A., Ferguson, R., Gaved, M., McAndrew, P., Rienties, B., Weller, M., & Whitelock, D. (2014). *Innovating Pedagogy 2014: Open University Innovation Report 3.* Milton Keynes: The Open University. Retrieved from http://www.open.ac.uk/iet/main/sites/www.open.ac.uk.iet.main/files/files/ecms/web-content/Innovating_Pedagogy_2014.pdf

30. Shear, L., Gallagher, L., & Patel, D. (2011). ITL Research 2011 Findings: Evolving Educational Ecosystems. *ITLresearch, Innovative Teaching and Learning Research. 2011 Findings and Implications* (pp. 9-29). Menlo Park: ITLresearch/SRI International.

31. So, H.-J., & Kim, B. (2009). Learning about problem based learning: Student teachers integrating technology, pedagogy and content knowledge. *Australasian Journal of Educational Technology, 25*(1), 101-116.

32. Tømte, C., Kårstein, A., & Olsen, D. S. (2013). *IKT i lærerutdanningen. På vei mot profesjonsfaglig digital kompetanse?* Oslo: Nordisk institutt for studier av innovasjon, forskning og utdanning.