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Abstract: In this interdisciplinary workshop, we shared and discussed ongoing research and existing results with regard to studies revolving around tablet-mediated collaborative learning in schools (#TMCL15). The guiding question was: Is the expanding use of media tablets on the way to change teaching and learning practices in schools? If yes, which are these emergent practices, how are they developing, and in what ways do they contribute to renew computer-supported collaborative learning? Existing studies in the area show that the launch of small, portable, flexible devices is changing teacher-student engagement and creative collaboration in the classroom. These studies raise an important set of issues and potentials for research in CSCL as they point at the examination of teachers’ and learners’ sociotechnical practices that are enacted in the classroom on a daily basis.

This half day workshop did aim at discussing issues pertaining to theorizing and designing for CSCL practices. The outcome of our knowledge building process did result in a) a summary of existing research outcomes so far, that did in turn inform b) new research questions and methodologies applied in the research area and created conditions to leverage c) a set of strategies for networking on the topic of changing teaching practices in tablet-mediated collaborative learning. In particular, we did aim at leveraging a joint research proposal, have initiated a wider research consortium, and we are working on a joint publication (e.g., edited book such as Springer CSCL series).

Keywords: media tablets, empirical studies, design, change, sociotechnical-pedagogical practices

Organizers’ background
The five organizers represent research of ICT in educational institutions and CSCL from different Nordic countries and they together bridge North American and European communities. All of us are experienced in organizing workshops at several International conferences such as EC-TEL, ACM GROUP, NordiTEL, Designs for Learning, Kaleidoscope TELEARC, Mobile HCI, EARLI and CSCL.

Intended audience
In the workshop, the audience represented a diverse field of researchers, designers and practitioners (e.g. teachers) who are working in the area of tablet-mediated teaching and learning, conducting research projects and/or empirical school studies and coming from different disciplines such as Educational Science, Computer Science, Cognitive Science, Learning Science, Science and Technology Studies, Educational Technology.

Introduction
Over the last three years, an increasing number of research studies have started to explore the potential of tablet-mediated learning in Nordic schools (Cerratto-Pargman et al., 2014; Nouri and Cerratto-Pargman, 2014; Cerratto and Milrad, in press; Eliasson et al. 2013; Meyer, 2013; Jahnke, Svendsen, Johansen & Zander, 2014 and Jahnke, Norqvist, & Olssen, 2014). These research studies are in part a consequence of the great interest of Danish, Swedish, Finnish and Norwegian schools in embracing web-enabled tablets in their teaching practices. For instance, Jahnke, Svendsen, Johansen & Zander (2014) and Jahnke, Norqvist, & Olssen, (2014) in a study comprising more than 32 classroom observations in Denmark, have reported on innovative uses of tablet-mediated learning across almost all school subjects (except sports). In Sweden, the work conducted by Nouri and Cerratto-Pargman (2014), Nouri (2014), Eliasson (2013) and Vogel et al. (2014) have among others pointed at the intricacies of understanding and designing for outdoor mobile learning activities in the school subjects of mathematics and natural sciences. In Finland, Järvelä and her colleagues have been working for designing socially
shared regulation tools (in media tablets) for promoting 21st century learning skills (Järvelä et al., 2014). Further, research projects on the use of media tablet in schools have been recently granted by the Swedish Research Council, a) Purposeful learning activities across contexts (Cerratto-Pargman et al., 2013) and b) Digital Didactical Design (Jahneke et al., 2014), and the Finnish Academy (Strategic regulation of learning through learning analytics and mobile clouds for individual and collaborative learning success, Kirschner, & Järvelä, 2014).

Preliminary findings obtained by Cerratto-Pargman et al., (2013) and Jahneke et al. (2014) point that the adoption and use of web-enabled small flexible devices in classroom has led to the emergence of new activities wherein these devices are both embracing and changing teaching and learning practices in Nordic schools. This is an important observation as traditionally, Information and Communication Technology (ICT) has been segregated from the classrooms, placed for instance in computer labs (Henderson & Yeow, 2012) and studied as disembodied from teaching and learning practices (Johri, 2011). This reality seems nowadays to be challenged as the use of smaller portable devices like media tablets (Kaganer et al., 2013) and smart phones are becoming part of everyday schools practices. We are thus witnessing a historical turn that allows us to trace the emergence and development of sociotechnical-pedagogical practices in education. More precisely, teachers’ embrace of media tablets and its applications in their teaching practices reflects a change in teachers attitudes vis-à-vis technologies going from a weak attitude towards ICT to a confident, affirmative one including in particular media tablets (Ifenthaler & Schweinbenz, 2013).

Theoretical approaches (relevance to CSCL) and themes

Research on mobile technology and media tablets in education has reported different implications of using mobile devices in formal learning activities. For instance, there is evidence of a correlation between the use of mobile devices and the enhancement of student engagement as well as progress of students’ achievement (Roschelle et al., 2005; Chou, Block, & Jesness, 2012). Others have pointed at the proliferation of learning activities including interactive content creation (Melhuish & Falloon, 2010; Hutchison, et al. 2012). Moreover, the open and easy access to information afforded by mobile devices while sitting in the classroom (Sharples et al., 2013) as well as support for user-generated contexts (Pachler, et al., 2010) seem to modify power relations between teachers and students (McCombs & Liu, 2011) making an impact on learners’ epistemic agency (Damsa, 2014). Further, studies also point at the potential role of mobile technology fostering student creativity and student collaboration (Buchem et al., 2012).

These studies have very much contributed to the understanding of the pedagogical value and specificities of using media tablets in teaching activities, however, most of them have focused on affordances of the media tablets as disembodied from its use and thus they do not provide a fully explanation of emergent teaching designs (Wegerif, 2005) and classroom practices. Moreover, models available for conceptualizing technological, pedagogical and content/subject knowledge dimensions (e.g. TPaCK models), illustrate how these dimensions are intrinsically tight to each other (Koechler et al., 2007), although they do not always help to spell out how teachers appropriate, coordinate and collaborate through technology at the level of practice (Kuutti, 2013). Still under-explored and under-researched is how Tablet-Mediated Collaborative Learning, impact the teacher’s practice and the re-organization of sociotechnical processes for enabling quality learning.

Summarizing, the purpose of this workshop is to discuss findings, insights, thoughts gained from empirical studies with a focus on teaching and learning practices deployed; where media tablets and teaching spaces are merging into something new –expanding existing communication spaces. By referring to teaching and learning practices we draw on the work of Lave (1988), Wenger (1998), Chaiklin and Lave’s (1993) focus on teachers’ activities acting in and upon the social material world of these activities. More precisely, we refer to sociotechnical-pedagogical processes (as social practices) deployed in classrooms with the purpose to enable collaborative learning (e.g. Järvelä & Hadwin, 2014).

Guiding topics for knowledge building at the workshop were:

- Theories, pedagogies, models, methodologies for studying tablet-mediated collaborative learning practices
- American Instructional Design and European Didactical Designs for tablet-mediated learning
- Learning design approaches
- Teaching design approaches
- Socio-material approaches on learning
- Development methodologies for studying changes introduced by tablet-mediated learning in schools
- Innovative mobile applications and tools for fostering tablet-mediated learning
- Innovative mobile user interfaces
• Socio-technical system design approaches
• User stories, case studies and evaluations of tablet-mediated learning
• Media tablets and wearable technology
• Future tablets for tablet-mediated learning including frameworks and methodologies

Goals
Three goals motivated the workshop: A) Sharing and discussing existing studies and ongoing projects of tablet-mediated teaching and learning in Nordic countries presented by the organizers and from other European and International countries presented by discussants. The aim was to identify and compare different teaching and learning practices bound to the use of tablets around the world. B) Identifying theoretical and methodological commonalities and contrasts across the represented disciplines regarding tablet-mediated teaching and learning. C) Focusing a set of developments for initiating a research network on this topic, in particular, through the preparation of a joint research proposal and formation of a wider research consortium.

Workshop format (half day)
The workshop was composed of three sessions: a morning inspiration event, a working group session and plans for the future. The morning inspiration event consisted of participants’ presentation of their position statements in the Pecha Kucha format. The Pecha Kucha event was based on a simple idea: each presenter presented 20 slides in 20 seconds each (approx. 6’ 40” in total). It is a presentation format that gave more presenters the chance to share their research.

During the working group session, discussions were supported by the workshop organizers utilizing the method of the “World café” which did entail short round tables discussing prepared questions developed from the morning session (10 mins. per table), then the groups did mix up in new groups going to another table with another question. The inputs from the Pecha Kucha session were used to inspire discussions in small groups. The plans for the future session brought the groups in the plenum together and discussed ideas and outlines for a research proposal and consortium. The workshop format required 4 hrs and 30 mins. in total including breaks.

Outcomes, contributions, dissemination
We invited different types of contributions ranging from work in progress, demonstrations and results from research and practice, academia and school practice. Participants were invited to submit original unpublished research as extended abstracts (max. 2 pages). It included a description of the theoretical concept, including a definition of tablet mediated collaborative learning and empirical research results (if available). Since the approach of TMCL is interdisciplinary, the workshop attracted different participants, including students, researchers in schools, designers, practitioners and developers. The workshop brought together international researchers that work on tablet-mediated teaching and learning. Extended abstracts by the participants were reviewed and selected by the Program Committee. The abstracts and the presentations are published online on the main website: http://sites.google.com/site/tmcl2015/.

The participants of the workshop have done original research in the field of tablet-mediated learning; but they were also interested to exploit the potential of their recent research. In preparing the workshop, we did analyze the submissions for deriving typical clusters of recent research and to use them as framing for scaffolding the knowledge building during the workshop.

The workshop outcomes were a) new knowledge in the field of tablet-mediated collaborative learning (such as research methods, pedagogies, models, results), b) we initiated a research network (consortium) around TMCL (tablet-mediated teaching and learning) and c) a joint publication (edited book in Springer CSCL series).

The organizers and participants spread the workshops information in different Social Media formats, including Twitter, #TMCL2015, Facebook group (https://www.facebook.com/groups/TMCL2015/), personal blogs and our workshop website http://sites.google.com/site/tmcl2015/. These activities were important to attract high quality submissions from various communities and to build an International network of stakeholders. Resources from the workshop, including accepted abstracts, Pecha Kucha presentations, have been made available online on the website in order to guide further discussion in the community and spin off creative initiatives.

Program Committee, includes the five organizers, and
• Chee-Kit-Looi, Singapore
• Eva Mårell-Ohlsson, SWE
References


