Working Group 1: Towards new systems of schooling in the digital age

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Introduction

This brief paper has been commissioned to inform the policy and decision makers as well as leading educators attending the EduSummit 2013 in Washington, DC, 1st to 2nd October 2013.

The aim of this brief paper is to set the stage for discussions to identify the most effective policies and strategies to promote transformative and sustainable ICT-enabled changes in educational systems towards new systems of schooling in the digital age so as to help them meet the needs of digital age learners and the challenges of a rapidly changing knowledge and technology-based global society.

This paper and the work of the Technical Working Group 1 build on EduSummit 2011 and as such on the results of the former Working Group 1 “Restructuring educational systems to move into the digital age”. The specific recommendations of the former EduSummit 2011 elaborated by the renamed TWG1 covered in this paper are that restructuring of schooling should consider the following aspects (Davis, Eickelmann & Schulz-Zander, 2011):

- Restructuring school systems to 21st century skills and ICT enabled assessments
- Ways that schooling must change when young people apply their own ICTs to learning at school and elsewhere
- Governance and leadership development to enhance quality assurance with partnerships between public and profit making enterprises involved in education
- Improving equity and cultural diversity while restructuring schooling with ICT
- Finding new models for organizational development of networked schools that acknowledge the necessary distributed leadership and support.
- Restructure initial teacher education and professional development alongside school restructuring, taking advantage of ICT for career long professional development.

As the TGW1 in Paris in 2011 referred to (1) radically restructure schools to be able to use multiple technology-enhanced pedagogies to address individual needs of students and (2) to develop and use distributed leadership models for technology use in schools and teacher education programs, the focus
of TGW1 in 2013 shifted towards new forms of schooling in the digital age rather and aims to restructure whole school systems.

The international expert group working in October 2013 in Washington led by Birgit Eickelmann, Niki Davis, and Ola Erstad aims to develop either a research update and an update of new practices of using digital technology for schooling as well as formulating future issues, questions and concerns regarding the use of new forms of schooling in the digital age as a huge field of challenges but also of potentials to meet individualized learning and 21st century skills worldwide.

Background

The holistic topic of the EduSummIT supports the idea of developing and using research-informed strategies to address educational challenges in a digitally networked world.

As to new forms of schooling, two essential questions are addressed and serve as the shared base for the work of TGW1’s work in Washington:

**Question 1:** To what extent and how does recent developments of education and digital technologies challenge and change systems of schooling?

**Question 2:** How can research inform us about the potential of new forms of schooling with digital technologies?

*Question 1* focuses the bottom up process of developing new forms of schooling through changing pedagogical practice (e.g. by teachers, schools and school districts) and/or by policy makers and service providers. Sub-topics include: (1a) What do we know about current pedagogical practice and new forms of schooling? (1b) What forms have emerged recently? (1c) What pedagogical and/or political goals have been addressed with what impact and unexpected consequences? (1d) What case studies and initiatives can be identified that have been adequately researched?

*Question 2* brings together the shared knowledge of communities of experts to identify and critique what is known about developing, implementing and sustaining new forms of schooling. On the one hand this comprises knowledge and meta-knowledge about applying different or new technologies into schools, including student owned devices whose use is supported during and after school and educational processed in networked and virtual environments.

In order to analyze these research issues we need to approach this on different levels. Different perspectives on new systems of schooling in the digital age may be related to: (a) institutions, (b) actors, (c) practices.

Regardless the claim for answering both questions independently, Davis, Eickelmann and Zaka (2013) indicate the relevance of considering the co-evolution of pedagogy and technology. Because both education and digital technologies are evolving rapidly, the term co-evolution is adopted to describe the changing ICT applications and services as well as changing scenarios leading to new forms of schooling. In this context the co-evolution of is defined by the interaction between the evolution of education and the evolution of digital technologies applied within education; both education and digital technologies are evolving and so changes in one tend to stimulate changes in the other. For example, a new software application that is adopted by teachers and their schools will stimulate changes of pedagogical practice
under influence of bureaucratic procedures (e.g. school governance), professional development, commercial aspects and OER and related services market innovative resources including LMS and Internet provision, and policies of government’s and regions. Figure 1 provides a view of the ecologies within which a class is typically nested, conceptualized as an arena with the teacher and her class at the centre.

Figure 1. Davis’ arena of change with digital technologies in education presented at the 2011 EdusummiT in Paris [see http://wikieducator.org/Change_with_digital_technologies_in_education/Change_ecologies/Arena_for_change].

Both TGW1 questions will be elaborated in the 2013 EduSummiT with experts from different countries and diverse professional backgrounds. The following examples are provided as a starting point:

- Laptop program in Norway in secondary schools and Learning Networks’ program in Norway. The Learning Network program was initiated to develop new models for schools using networking as an approach. Each network consists of 10-11 schools on different levels working together over time to build sustainable development and strategies for change (Erstad, 2013).
- New forms of schooling in Korea with technologies as a consequence of the cross national PISA evaluations.
- Flipped classrooms in the USA to re-think schooling and meet individualized learning using learning videos and group course learning in huge classrooms and teachers supporting individuals and groups where needed rather than organizing lessons (Sams & Bergmann, 2012). May be linked with BYOD (bring your own device), which is a policy of permitting students and learners to bring personally owned mobile devices (laptops, tablets, and smart phones) to schools where their use is encouraged. Also sites with extensive educational resources such as the Khan Academy, with its extensive video library, interactive challenges, and assessments from any computer with access to the web using learning videos in different subjects (https://www.khanacademy.org/).
- Distance learning and networked e-learning classes across schools in New Zealand and elsewhere, sometimes called virtual schooling (Davis, 2012; Davis & Eickelmann, 2013).
• OER: Open Educational Resources as freely accessible, usually openly licensed documents and media that are useful for teaching, learning, educational, assessment and research purposes. The Organization for Economic Co-operation and Development (OECD) defines OER as: "digitised materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research." OER includes learning content, software tools to develop, use, and distribute content, and implementation resources. OER programs often aim to increase equity. Examples can be found all over the world, such as the OER Africa program, an initiative established by the South African Institute for Distance Education playing a leading role in driving the development and use of OER across all education sectors on the African continent, Wikiwijs (the Netherlands), a program intended to promote the use of OER in the Dutch education sector. In 2012 the OERu was formed to take OER a step further by adding an open approach to assessment as well as curriculum design. OERu research is also openly available on its web site (see Ossiannilsson & Creelman, 2012; http://wikieducer.org/OERu).

• MOOC (massive open online course) provide online courses aimed at large-scale open access via the web, some of which have interactive participation. In addition to traditional course materials such as videos, readings, and problem sets, MOOCs may provide interactive user forums that help build a community for teachers and learners plus assessment, such as exams and quizzes. MOOCs are a recent development in distance education that are appropriate for some high school students, particularly those who are talented and gifted who benefit from additional stimulation.

• Alternative schools, such Big Picture learning schools (http://www.bigpicture.org/schools/) or the franchising of for profit approaches that develop innovative buildings and cyber infrastructure for the blending of online learning, such as the Carpe Diem franchise (see http://www.carpediemsschools.com/).

Issues/Unresolved questions/concerns

There have been repeated calls for restructuring of schooling to take advantage of information and communication technologies. For example, UNESCO’s vision on the role of ICT in education calls for more equitable distribution of schooling with increased access to both teachers and ICT (UNESCO, 2011). This remains problematic for many reasons.

Digital technologies require ongoing resources and maintenance to continue to work and to evolve alongside changing educational systems. However, co-evolution is often not considered and so organizations may both evolve and reverse that evolution reducing effective deployment of digital technologies when resources and expertise fade. This includes the commitment and expertise of educational leaders.

Research into the implementation of new forms of schooling is rare. Some knowledge about transforming organization, with factors such as the diffusion of innovation (Rogers 2003) discussed by Davis in her 2008 chapter on teacher leadership and updated in Davis, Eickelmann and Zaka (2013). To Eickelmann’s (2011) longitudinal research of innovative schools in Germany we add confirmatory research by Schrum and Levin (2009) with case studies of the leadership of 21st century schools across the USA; although most schools were found to continue to be effective and succeed over time, they also studied one school that failed to continue to engage students effectively with ICT and thus impacted the quality of learning adversely. In the UK Harrison, Tomás and Crook (2013) recently returned to a national
dataset to undertake an e-maturity analysis that provides further evidence of the complexity of school development by identifying conflicting factors in their case studies. We are pleased to see their acknowledgement of an ecological perspective too.

These and other studies are beginning to provide cautions and guidance on ways to implement and sustain strategies for 21st century competencies and occasionally identify some relationship to various education systems. In addition, several ongoing projects and initiatives, like the ‘Connected Learning’ initiative in the USA and the ‘Learning Lives’ approach developed in Norway raise fundamental questions about how our education systems are in dis-connect with the ways young people today relate to literacy and learning in their everyday lives.

One issue that has become central for policymakers and leadership at educational institutions within the last year is the development of MOOCs (Massive Open Online Courses). So far this has mainly been seen as a revolution within higher education, but more and more this is also seen as a technological development that will challenge school education as well. To what extent and how this might happen is still unclear. This is also true for OER: Still OER mostly addresses higher education and therefore it will be a challenge for the next years to make use of OER in K-12 schooling (Richter & Ehlers, 2010).

There is also a need to move beyond traditional conceptions of formal vs informal learning, online vs offline activities and try to develop new conceptions of what defines learning spaces across different locations and contexts (Erstad & Sefton-Green 2013; Fullan 2012). How we conceptually should understand this is still unclear, including inequity.

Innovations, including ICT, will not replaced educators. Instead ICT innovations are mediated by teachers and their leaders, who adopt and/or reject an increasing range of digital technologies in the twenty first century. Although influential and important, the impact of senior members of educational hierarchies, including principals, deans and policy makers, is mediated by teachers. Therefore a main critical issue will be how to prepare teachers for their future work place without knowing how pedagogies, technologies and new forms of schooling would look like. This also brings to the fore the changes that are or should also be occurring in the preparation of future teachers, including those who will teach in networked and virtual schools (Davis, 2013) and their access to schools networks for learning.

**Outlook**

The working group TWG 1 of EduSummIT 2013 in Washington aims to answer the two questions stated above and will identify further questions and issues on new forms of schooling. It will use the expertise of the group to state issues, unresolved questions and concerns. It also aims to identify criteria for working and developing towards new systems of schooling by developing models and drafting for future scenarios and developments, taking both – technologies and education – into account. We look forward to this working group discussion in Washington DC and online.
Brief bibliography and further reading


