Digital Didactics – Scaffolding a New Normality of Learning
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Higher education is like an old building that is being constantly augmented with new technological fixes, but the authors propose that it is time to radically question and rethink education, to build a new house from bottom up in order to construct a new normality, which we propose to call "Digital Didactics".

1. Looking back over the shoulder

Back in 2010, the movement of Open Educational Resources (OER) and the process of "opening-up education" focused on providing access to information and scientific knowledge in different online spaces, echoing the hacker mantra "information wants to be free". Many problems persisted with worries about intellectual property rights. Many stakeholders in education and research had long trusted the bundling of information with sellable media (books, journals), selective places (schools, campuses, formal educations) and persons (the teacher as information source and judge of learning). Another worry of OER was less discussed: what about learning outside of universities, in communities and self-directed learning? Was that a threat to universities? Life-long learning had for long been on the university "to do" list, but had the university lost its opportunity? In addition, "distance education" also had been a project idea, driven by technology or political discourses, and its use of ICT focused as "transportation for education" to a broader range of students. Distance learning made some motivated students happy to finally access education, but other students ended up lonely, with lost passwords and half-completed courses, ensuring they would never try again. Teaching on campus went on like before, but with shrinking resources and with ICT as an "add-on" for rationalizing tedious functions in traditional courses. People with older educational conceptions, meaning that relevant information should to be memorized, had almost all drowned in information already, but the associated teaching methods were still there, with the teaching classroom as the natural home.

But we all knew, deep within, that **this was all about information**. We had our bookshelves full long ago, without knowing and being able to use the information therein. Education is a knowledge and creativity process for individuals and groups. Knowledge is about processing information and being skilled in its use, and creativity refers to innovative, unexpected use. How can universities tweak their role and business idea in a new age where limited access is not the problem? A modern idea of a university ought to be about information creation, information use and information processing. This idea may already be concerning research, but must education be lingering so far after, **still being more reproductive than creative**?

Being here and now in 2013, as we are writing, the feeling is slightly different. We talk about ICT-use for learning in designed creative spaces instead of new bigger lecture halls. The classroom areas convert into "commons", social spaces for around-the-clock learning, where students socialize when experimenting, reading, reflecting, discussing, creating and peer-reviewing. The remaining lectures are increasingly consumed when convenient for the students at tablets and smartphones as the PC is dying. Moreover, teaching spaces are becoming learning spaces; the "flipped classroom", an inverted use of campus and personal spaces. The use of ICT in courses has become more natural.

ICT is used for effectiveness and quality enhancements in a more profound way than back in 2010, helping access and flexibility as well. The expression "education distribution" doesn´t feel as a fit expression any longer, nor does "distance learning". Former "decentralized" and "distance" students are sometimes in the same courses as campus students. But we still don't have suitable words for what´s happening; the discourse is still to be constructed and our understanding is lacking as well. "Blended learning" is one of the few expressions that seem to allow new teacher-created, bottom-up interpretations, using both the online environment and the physical surroundings (Sharp, Benfield & Francis, 2006). Some courses are still a blend of places, focusing on a distribution of content online and teaching in classrooms as a kind of "half-distance" education". Others go beyond and concentrate on how ICT media and tools can enhance the process of learning, using "places" as designable and combinable tools.

Offline and online are still perceived as two worlds, one we inhabit, the other we visit by log-in procedures. But digital natives and digital immigrants are not so striking metaphors any longer; the digital dualism is blurring. The online world is still sometimes, but not often, called virtual, in the meaning "not real". Perhaps, as Floridi argues, we are the last generation to make a clear difference between on- and offline worlds? (Floridi, 2007).

Where is higher education headed? We don´t know. But it seems unlikely that higher education will be *in* the Internet as a place nor that any search engine university would take it all over and solve the problems of education. Business as usual is also unlikely. There is obviously a need to rethink how education works in time and space, and to form new process designs affecting all stakeholders. Futures can, at least in part, be created, designed and constructed; they don´t just happen to us. Here are some modest guesses about higher education in 2030. You are invited to disagree. **In 2030…**

- The question of how to provide access to information to all everywhere is considered solved. It is even more evident than today that **information and knowledge are different entities**. People may not complain over information overload. Information can have many structures, and linear text may not be as dominating in higher education as now – the hypertext structure has gained importance.

- Teachers and students live in *off-online* spaces – offline and online constitute aspects of a one and only human life and social world. The **climate in student-teacher collaboration** can be enhanced when redesigned examination procedures includes informal learning and is no longer solely a university responsibility. Teachers may be of more kinds: from nationally or globally specialized lecturers to accessible learning supporters and supervisors, and to local mentors.

- **Learning as a process is made visible.** It belongs to the learner who has many tools and strategies to her/his use. Learning is learning without prefixes as "distance", "blended", "mobile", "non-formal". The individual's learning is more important than fitting into educational structures. The individuals learning portfolio, peer-reviews and network quality may leave content test results behind as assessors of knowledge. Life-long learning is combined with learning processes enabled by universities.

- The **difference between teaching and learning is clearer**, and not blurred in language as today; they develop as interdependent but distinguishable processes. Teaching is crucial, but the teacher´s role for the teaching institution and in relation to the students may have changed into an even more interesting and creative job, leaving some duties behind, taking on others.

2. Approaching a new normality

But how do we approach and work our way to 2030 in European higher education? The **European way** of trying **to understand and design education**, **"Didaktik"**, is a research-based and theoretical approach, but the approach is sometimes unknown, hard to imagine and difficult in its application. The American model of Instructional Technology/Design does not harmonize perfectly with European traditions of objectives for higher education. But the European experience is important, also for co-creating global development. We want to identify and co-construct a European flavor of what ICT integration in higher education can mean and bring in a longer perspective. We humbly *invite cooperation, collaboration and coopetition in the design of "digital didactics"*. We are not proposing a transatlantic competition rather a more constructive dialogue in questions on ICT, OER & open education.

Digital Didactics, we propose, draws on Vygotsky's "Zone of Proximal Development" (1978) saying that learning can reach longer and deeper outcomes with teacher and peer interaction and peer-reflection. This can be supported by DESIGN, implementation and continuous redesign of PROCESSES that includes the intelligent combining of digital and traditional tools for teaching and learning – leaving the earlier focus of the pure transport and content delivery characteristics of ICT behind as a historical phenomenon. Digital Didactics must make a real difference in a) student learning, compared to self-directed individual learning, b) institutional effectiveness, upgrading the teacher role by reinventing it, and c) value of education for society, by increased access and worthy concepts of lifelong learning, which draws on a close cooperation with the public and company sector.

"Digital Didactics" must critically question everything in the search for such appropriate processes, like the course concept, the isolation principle of teaching, the isolation of teaching and learning from society, the student homogeneity ideal, current forms of grading and feedback, separation of formal to non-formal learning, and designs of learning environments.

When looking forward to 2030, we want to discuss **a new normality of higher education**. This draws on Peter Hinssen's "new normal" idea (2010), a fearless proposal that claims we are now about half-way in the implementation of ICT in society, and from now on we will see more benefits of ICT. The ICT-tools work well enough to make ordinary activities easier and more effective in a notable way. When we apply the „new normal" idea on education, there has been a lot of experimenting in the past, half-successes and technical troubles when trying to use ICT, but now in 2030 we can expect a more rewarding use of ICT tools.

In 2030, ICT-supported OER, Digital Didactics, teaching and learning are intertwined and shape **a new educational entity** that is hard to imagine. What is the place for future open higher education if we have to call it something? It won't be the "teaching place" any longer, nor the "classroom as learning place" (that was long ago), not only a "student collaboration place", not really all in the "cloud" (we have bodies as well) but probably there will be a sort of "ICT-supported social information sphere" between teachers and learners, always using places as tools as well as books, OER, and wikis as tools. For a long time, we used technology to record, broadcast, recreate classroom practices and structures in virtual learning environments (VLE), streamlining them. But in 2030 the traditional teaching space may not be the central metaphor for education, and not meaningful to augment with technology. References to the learning process would suit better than references to places. We suggest thinking of "Learning Expeditions" (a time/process metaphor), happening in an "Arena X" (place metaphor). The central assumption is that **personal participation** will be **supported and reviewed by social learning processes.**

The use of OER affects many layers of education including content, activities and actions in classrooms, and local and national decision-making. The new situation affects three levels of

Didactics a) the relation between teacher, students and content, b) the didactical design (teaching aims, learning activities, assessment/feedback) as well as c) course development (incl. examination design), curriculum development and academic staff development for teachers (*figure 1*).

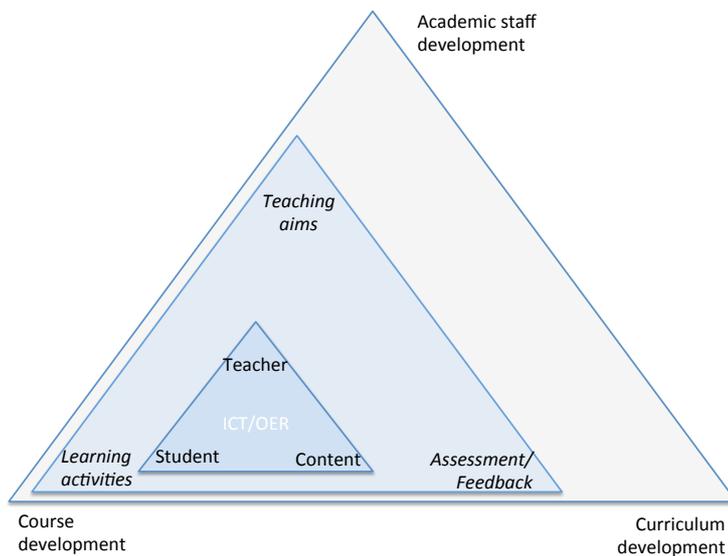Digital Didactics embrace digital, didactical designs aim to enabling individual and collaborative learning. Following a constructivism approach, learning is knowledge co-construction defined as co-creation of new knowledge that is "an active process of constructing rather than acquiring knowledge" (Duffy & Cunningham, 1996, p. 171). This approach represents a shift in designing teaching towards learner-centered approaches (Barr & Tagg, 1995) which support deeper understanding and reflections, and which boost several other skills like critical thinking. Such 'active learning' is related to the role of learners, where they are not only consumers (surface learning) but also active agents (producers) in the co-construction of new knowledge: "pro-sumers". Teaching then contributes to a form of deeper learning, not surface learning only, and can integrate opportunities for learning, where learners expand their thinking beyond consumptive behavior and beyond traditional reproduction of existing knowledge ("conceptual change", Kember 1997).
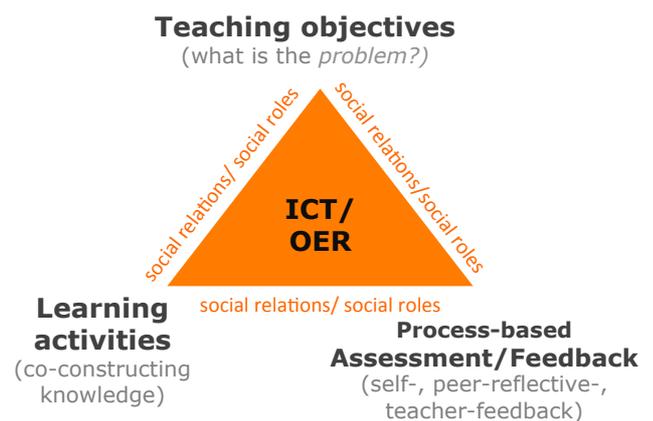

Fig 1. Digital Didactics - The three triangles of challenges

Our "Digital Didactics" is inspired by the German concept of Didaktik by Klafki (1963), Hudson (2008), Fink (2003) and Lund & Hauge (2011) who stress the differences of teaching concepts and learning activities and call them designs for teaching and designs for learning. This view on didactics and design puts teaching and learning into a new light. Teaching is not only a tool to reach the cognitive dimension; teaching is rather an activity-driven design to enable learning as a social process and as an activity for knowledge production ("activity designs for learning", Hauge & Dolonen, in Olofsson & Lindberg, 2012; "multimodal perspective", Selander & Kress, 2010). A digital didactical design (*figure 2*) includes different elements and their relations: a) teaching objectives, b) learning activities, the plan how to achieve those objectives in such a way that the

Fig. 2. Digital didactical design – elements and relations

learners are able to develop competencies and skills which the teachers have in mind (expected learning outcomes), and c) different forms of feedback and assessment (Chapman, 2003) to evaluate the student learning progress ("constructive alignment", Biggs & Tang, 2007). According to Bergström's study (2012), process-based assessment is the most effective method to foster learning, but summative assessment is the common routine. A didactical design also includes d) the design of social relations, teacher-student-interaction and student-

student-interaction by the "dynamics of social roles" (Jahnke, 2010; Herrmann, Jahnke & Loser, 2004), and e) the design of using mobile technologies and OER in an Arena X. In an ideal world, mobile technology enhances learning at each point of the didactic design. Mobile technologies can make a significant contribution to learning, especially in "making learning visible" (Mårell-Olsson, 2012). Mårell-Olsson & Hudson (2008) illustrate different types of digital portfolios in which students develop the ability to "collect, organize, interpret and reflect on their individual learning and practice, and become more active and creative in the development of knowledge" (p.73). The integration of mobile technologies in didactical designs and vice versa, however, is more complex than it seems (Kirschner & Davis, 2003). Koehler et al. (2007) show how complex the integration of content, technical and pedagogical knowledge is (TPCK model). In addition, Loveless (2007) illustrates at the example of primary schools how the co-evolutionary development of subject knowledge and didactics needs the support of "improvisation".

The approach of Digital Didactics is not just the addition of didactics, ICT-supported OER and mobile devices to traditional concepts. It envisions new models with new questions, as:

- To what extent can teaching practices approach informal-in-formal learning in an Arena X? (Jahnke, 2009). Combining traditional textbook readings with open, unstructured, informal learning space where "students are encouraged to experiment, play and explore topics" (Johnson et al., 2013). Concepts like access to information along with notions of transparency without barriers to interaction are central.

- To what extent can teachers create new learning goals on-the fly in a "Learning Expedition" in an Arena X in a fast-changing surrounding?

- To what extent can teachers focus on producing and creating, instead of reproducing and recreating in an Arena X for a Learning Expedition? Teachers create designs that focus on **learning as a process in time** and make learning **visible**.

In 2030, there is a range of digital didactical designs that go beyond surface learning and enable deeper learning. The teacher makes deeper learning possible and triggers the students to go beyond their horizons. It is not enough to learn on surface levels like remembering facts, understanding the information and applying knowledge (Bloom, 1956; Anderson & Krathwohl 2001). When societies want to support learners to become critical and reflective, then skills like analyzing, evaluating and collaboratively creating new ideas/things are important. The vision for 2030 is to make the different designs and the relation to the quality of learning visible, especially in the analysis and the design of key principles and themes across different cases to inform a new Theory of Digital Didactics.

3. Conclusion

Will there be any significant differences in learning outside and inside of higher education? Yes, we argue, the teacher and digital didactical designs can make the difference. A teacher in such a role, for example asking uncomfortable questions, can usually bring a learner further than a student can come on her own. The challenge is to rethink teaching in such a way that fosters deeper learning. Such a European approach needs the constructive alignment of digital didactical designs, OER, mobile devices and creativity. The challenge is to **design** learning in higher education institutions – where **not only the ICT-supported open educational resources** are in the center of teaching **but new forms of Digital Didactics** unfold the evolution towards learning expeditions in open education.

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