Designing efficient learning experiences and pedagogical usability for distance education

Annika Wiklund-Engblom1, Luzilla Backa2, Hasse Eriksson1, Margareta Wihersaari2

1MediaCity, Faculty of Education and Welfare Studies, Åbo Akademi University
2Energy Technology, Faculty of Science and Engineering, Åbo Akademi University

Introduction
Educational designs - especially technology-enhanced ones - has to pay close attention to the needs of both teachers and students (Amiel & Reeves, 2008). This study investigates and develops a distance education design of a Master's programme for engineers by evaluating and iterating the educational design. The aim is to improve the efficiency and the learning and teaching experiences of both students and lecturers, for instance by reducing technical constraints and manifesting a new learning culture grounded in the affordances of digital tools for learning.

Research questions
• How are students and university lecturers experiencing the distance studies using Adobe Connect?
• How can the needs of lecturers and students guide further improvements of the educational design of the distance studies?
• How would media and user experience experts improve the quality of the video conferencing?

Educational research design
The research approach is described as educational design research, in which a design is improved through thorough problem analysis, redesign, and evaluation (McKenney & Reeves, 2012). Hence, a new iteration of the design is developed based on the findings from the first phase of problem analysis.

Methods
Educational design research is often referred to as "messy research", as data is collected from many sources in order to form a thorough picture of the problems inherent in the educational design (McKenney & Reeves, 2012). The research methods used in the first phase were questionnaires measuring pedagogical usability and experiences of the distance students (n=23), as well as indepth interviews with both students (n=4) and lecturers (n=7). Furthermore, media production experts evaluated the setup of the classroom and the utilization of the technical equipment in collaboration with an ICT-pedagog and researcher.

Findings from Phase 1 as a starting point for Phase 2
The findings from the interviews and the expert evaluation during Phase 1 of the educational design study revealed needs for:
• Updated audiovisual equipment
• Support for technical management
• Managing relations in a new digital learning culture
• Structures for interactive meetings
• Organised collegial learning and co-create workshops for digital didactical design

These findings show that challenges of the educational design relate to three areas: technical needs, learning needs, and didactical needs (cf. Mishra & Koehler, 2008). Phase 2 of the study is to develop a second iteration of the educational design, in which all areas are targeted in order to make the design more effective and efficient for both students and lecturers. Thereafter, in Phase 3, the new iteration will be investigated and evaluated in accordance with the improvements made and the impact this have had on learning and teaching experiences, as well as the perceived pedagogical usability. Phase 4 involves a thorough comparison of the iterations and final results of the educational design study in the form of design principles and best practices gained for this particular learning context. The study is estimated to continue during 2015-2017.

References
