

## Chapter 41

# Mobile Technologies for Student Centered Learning in a Distance Higher Education Program

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### ABSTRACT

*The aim of this study is to analyze mobile technologies for student centered learning in a distance higher education program with a focus on mobile online webinars (web-based seminars or conferencing) using mobile applications such as laptops, smart phones, or tablets. As wearable technologies continue to grow it could very well extend to smart glasses, smart watches etc. These tools can provide face-to-face interactions, recording flipped classrooms and parallel chat communications. The data collection consists of observations of ten online face-to-face webinars with 22 students, six interviews, and two surveys. Theoretically, the study joins the research tradition of Computer-Supported Collaborative Learning with emphasis on collaboration, and Computer Self-Efficacy concerned with individuals' media and information literacy. Important conclusions from the study demonstrated mobile interactions increased student centered learning on theoretical concepts, assisted in the ability to review information critically, and provided experiences bridging professional teaching practices.*

### INTRODUCTION

The aim of this chapter is to analyze and describe wearable technologies for student centered learning in a distance higher education program. We will focus on mobile online webinars using mobile applications such as laptops, tablets or smart phones using teacher-recorded inverted / flipped classrooms. The interactions also include verbal face-to-face (F2F) and parallel textual chat communications with other students and teachers.

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Lage et al. (2000) describes the easiest definition of the flipped or inverted classroom: “Inverting the classroom means that events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa” (p.32). The core idea of flipped classrooms are to invert the common instructional approach, as homework before the lesson instead of after, by using teacher-recorded videos with various briefings and interactive instructions. These teacher-recorded instructions and videos can be accessed from different locations by using mobile technologies, such as laptops, tablets or smart phones, prior to the class learning activities. In this study, the flipped classroom consists of two parts: 1) teacher-recorded videos with individual instructions outside the classroom; and 2) interactive group learning activities F2F inside the mobile online webinars. The concept removes the teacher-recorded videos and instructions from the online webinars in order to allow better use of the in-class time during the online webinars F2F with discussions, tutoring and scaffolding student centered learning activities (Bishop & Verleger, 2013; Lage et al., 2000; Long et al., 2014). Scaffolding knowledge processes is a kind of “thinking types” for fostering expertise in writing and argumentation, designed to provide procedural facilitation (Scardamalia & Bereiter, 1983).

“Class” becomes the room / place of the mobile online webinars integrating F2F conferencing with a predefined aim of using real-time experiences with guidance from a teacher. The potential of mobile online webinars F2F is that everyone can see and hear each other’s verbally through discussions, while at the same time communicating via textual chat and notes. This concept assists learners F2F directly in problem solving, discussing theoretical concepts, reviewing the literature, engaging in collaborative group work, as well evaluations. Furthermore, the synchronous online webinars can be recorded for later asynchronous viewing online within the Learning Management System (LMS) in order to provide students with the opportunity to take a step back, reflect, self-assess and compare various contributions. In summary, several student centered learning activities can be a part of the course structure by using laptops, tablets or smart phones with teacher-recorded videos and instructions before the mobile online webinars F2F and parallel chat communications in order to mediate meaning and learning on a critical and higher-order level.

Examples of learning activities are:

- Tutoring and scaffolding, as well as peer learning processes F2F.
- F2F group discussions regarding theoretical concepts, literature review, authentic experiences, problem solving, and course assignments.
- Receiving and providing F2F peer feedback, co- and self-assessment.
- Collaborate with online chat, common notes, documents and whiteboards F2F.
- Sharing screens and software with others F2F.
- Examinations of course assignments and critical peer review F2F.

It is important to research how and in what ways mobile technologies, as in this study, by using laptops, tablets or smart phones, can support student centered learning and collaboration in a more digitalized higher education, instead of merely focusing on how new media techniques can make education more effective or detrimental (e.g. Amhag, 20011; 2012; 2013; Lee & Salman, 2012; Rockinson-Szapkiw et al., 2013; Sana et al., 2013).

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