

## Chapter 9

# A Longitudinal Study of Facilitating Medical Students' Stepwise Transformation to Distance Learners

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### ABSTRACT

This chapter focuses on medical students' experiences in transforming from face-to-face to distance learners in a Swedish regionalized medical program (RMP). One group of students ( $n=100$ ) were followed during six semesters through surveys, log data, observations, and in-depth interviews. A research model built on the Cultural-Historical Activity Theory (CHAT), including the notion of dominant and non-dominant activities, was used in order to identify factors that influence students' stepwise transformation from face-to-face to distance learners. The analysis contains the investigation of pedagogical, institutional, and historically grounded conflicts that seem to inhibit medical students from making a complete transformation to distance learners. By going deeper into the analysis of transitional actions, which seems to help in solving conflicts, the chapter discusses implications to facilitating medical students' future transformation from face-to-face to distance learners. These implications are examples of curriculum redesigns, such as new educational designs and integration of technology and pedagogy in the curriculum.

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## **INTRODUCTION**

Distance learning has grown rapidly in health and medical education (Ellaway & Masters 2008; Sandars, Homer, Pell & Crocker, 2008). Medical programs around the globe are investing heavily in digital technologies, not only to deliver course content, but with the aim to improve the quality of education through students' technology-enhanced learning (TEL) (Harden, 2006; Han, Resch & Kovach, 2013).

The increased use of TEL in health and medical programs has also resulted in face-to-face curriculums being redesigned into something useful for online delivery (Ellaway & Masters, 2008; Peska & Lewis, 2010). Through this educational change, students are often encouraged to be learners that are more self-reliant and that control their own learning (Ruiz, Mintzer & Leipzig, 2006). In the research literature, this approach is said to provide opportunities for enhanced student individualized learning solutions (Sandars & Haythornthwaite, 2007). Further, the introduction of a course management system (CMS) allows teachers to create and make available course content to students, regardless of time and space (Seluakumaran Jasof, Ismail & Humin, 2011; Ellaway & Masters, 2008).

The transformation to distance teaching and learning in health and medical education has, however, been a rather complex and demanding process (Churton, 2011). The implementation of distance learning is described as a radical change in how the curriculum is first designed, then presented and delivered to the students (Snadden et al., 2011; Pettersson, 2013; Pettersson & Olofsson, 2013). Here one challenge seems to be related to difficulties in making digital technologies, as conditions for TEL, an integral part of how the curriculum is delivered to students (Oblinger, 2006; Sandars, 2009; Snadden et al., 2011). Distance learning requires teachers and students to rethink and transform their previous relationships in teaching and learning (Han et al., 2013; Howell, Saba, Lindsay & Williams., 2004). Such changes, in turn, seem to require the development of new educational designs adapted for distance learning, including not only a re-organization, but also a re-designing of curriculum and learning activities to fit in a distance mode (Larsen, Logan & Pryor, 2003; Nihuka & Voogt, 2012). In order to achieve such changes and to find ways to support students during the transformation from face-to-face to distance learners, more research-based knowledge is requested (Kuo, Walker, Belland & Schroder, 2013; Duan, He, Feng, Li, & Fu., 2010; Pettersson & Olofsson, 2013).

In early 2011, a large-scale project was undertaken to transform a traditional face-to-face medical program into a regionalized medical program (RMP) with distance learning components. This took place at Umeå University in Sweden. Such distance medical programs are said to enable medical students to undertake their clinical practice in rural and remote areas while theoretical learning is conducted online with teachers and students who are placed at the main university campus (Maley,

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