## ABSTRACT

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The gap been formal education and work is often referred to as an obstacle for learning proficient work performance. The possibilities of simulations to create virtual worlds for learning have been assumed to be beneficial, especially in complex technological environments in which the demands on safety for humans are extensive. In spite of extensive prior research on simulations, it is argued in this thesis that there is still a need for improved understandings of the concrete conditions for how simulations may contribute to bridging the gap between education and work. An educational program for registered nurses to become nurse specialists served as the empirical case. These students were situated in a phase of transition between different professional identities, achieving their specialist qualification by means of theoretical studies and by practicing in clinical settings. Of central concern is the question as to how the use of simulations may change the relations between these realms of education and work and the consequences thereof.

Part One of the thesis provides an explanation of concepts in the design of simulations and an overview of the results of prior research on learning with simulations. The theoretical framework described places the analytical focus on interactively accomplished processes of sense-making and the significance of technologies and other resources in these processes. There are also summaries of the included studies and a discussion of the results. Part Two includes the four studies. The first one is an interview study of registered nurses and concerns how central tasks in nursing practice could be learned by means of simulations. The dynamic and complex character of many tasks was stressed, and simulations were judged to be useful for capturing and learning to manage this complexity. The second study addresses how students' framing of simulated assignments is fundamental in learning processes. It shows how work experiences can contribute to a framing of assignments as authentic, but also how the one-sided reliance of such experiences is problematic for collaboration and for managing problems in accordance with educational goals. The third study has a methodological focus. It is intended to show how detailed analyses of *how* participants interactively make sense of simulated events can provide new answers on *what* students learn from simulations. It is argued that such an approach provides concrete and specific understandings of learning processes that are of great concern in the understanding and design of simulation-based learning environments. The fourth study addresses how the use of simulations may contribute to overcoming the encapsulation of formal education. It highlights how several aspects of the integration of simulations in curricula are decisive for this to take place.

It is concluded that simulations provide possibilities for creating new forms of boundary practices that offer unique conditions for learning. Participation in simulation activities affords ways of dealing with the problems on many of the premises of work practice, and also to elaborate these with theoretical means. Simulations can thus be used for bridging the gap between education and work by bringing unfolding patient problems into the seminar room. The development of methods for supervision and the integration of simulations with theoretical content and clinical practice are emphasised as being of crucial importance in realising these possibilities.