Training to become a master mariner in a simulator-based environment

The instructors' contributions to professional learning

At all times a ship is sailing the sea, a team working on the ship's bridge performs navigational computations, using a wide range of technologies for carrying out their work. Navigation is part of a long tradition of social and technological work practices that can be traced back well over two thousand years. Historically, maritime work practices were mostly trained through years of apprenticeship on board ships, fostering the skills of a mariner in the context of work and as a participant in the culture. In recent decades, learning to navigate is gradually being replaced by formal learning in higher education. In educational contexts, simulators are used as a tool for learning the skills and practices of navigation, reducing the periods of the students' on board practice.

This thesis explores how the entrance of new technologies in maritime training restructures how professional skills are to be developed, creating new opportunities and challenges for maritime educators. The overall aim is to gain knowledge, at the level of interaction in instructional settings, about the instructors' work of supporting the students' learning towards master mariners' expertise during simulator-based learning activities.

The findings illustrate the role and importance of instructional support throughout exercises in the simulator in order to develop the students' professional skills. Moreover, the findings illustrate how professional learning draws both on the students' access to work contexts on board ships, and an instructor that systematically addresses both similarities, differences and irregularities between work practices and the simulation during training.

Charlott Sellberg has a multidisciplinary background in Cognitive science, Human-Computer Interaction and Education. Her research interest concerns how cognition is concretely grounded in social and material practices, in particular how new technologies enter into play, work and learning contexts. The research reported in this thesis has been conducted within the Linnaeus Center for Research and Learning, Interaction and Mediated Communication in Contemporary Society (LinCS) and the University of Gothenburg Learning and Media Technology Studio (LETStudio).

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