

## Chapter 2.17

# Development of Online Distributed Training: Practical Considerations and Lesson Learned

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### ABSTRACT

This chapter discusses considerations and tradeoffs in designing and developing an online teamwork skills training program for geographically distributed instructors and students. The training program is grounded in principles of scenario-based learning, in which operationally realistic scenarios are used to engage students in actively forming links between classroom and real-world applications of key concepts. The chapter focuses on supporting active engagement of learners, and meaningful and thoughtful learner-learner interactions appropriate to the subject matter (Neal & Miller, 2006). We describe lessons learned in the development of a distributed training program that interleaves asyn-

chronous and synchronous training modules (Neal & Miller, 2005) to leverage the advantages of both self-paced and group learning, provide opportunities to practice the teamwork concepts being trained, create social presence, and promote interaction and reflection among the course members.

### INTRODUCTION

The value of peer learning is well known, especially for domains in which people will apply what they learn in collaborative settings, but it is challenging to design courses that effectively incorporate and support peer learning. When learners are copresent in the classroom, it is easier to devise exercises that facilitate peer learning. Currently, most training outside of the classroom is self-paced, eliminating

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peer and instructor contact, due to the perceived cost reduction and the greater ease of implementation. It is a challenge to develop online training that incorporates these rich human interactions while respecting the time constraints under which learners operate, yet it can lead to deeper learning that is more memorable and more easily applicable (Neal & Miller, 2005; Notess & Neal, 2006).

This chapter discusses considerations and tradeoffs in designing, developing, and evaluating an online training program for an instructor and students who are geographically distributed. The discussion will take readers through the development process, starting with analysis of audience and goals, to the challenges in acquiring and adapting course material to the online format, and finally the implementation and evaluation. We focus on considerations involved in supporting active engagement of learners, and meaningful and thoughtful learner-learner interactions appropriate to the subject matter (Neal & Miller, 2006).

Training is successful only when there is a demonstrable performance improvement; for that to occur requires opportunities for demonstration, practice, and feedback, as well as for declarative learning (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995). Furthermore, training that involves teams, rather than individuals, requires that the practice and feedback is conducted in a team environment. Whereas in the past training has been traditionally delivered in a face-to-face, classroom-like environment (Neal & Miller, 2006), our goal was to develop a *distributed* training program that includes elements of didactic instruction and demonstration, as well as the opportunity for practice and feedback in a team-based environment. The training program we developed was designed to train civilian and military emergency medical team members in teamwork skills and in methods for enhancing teamwork; the approaches used are applicable to any training where learners will not be practicing in isolation.

This chapter is written through the lens of our experiences in developing the teamwork training program. The program was developed for medical professionals, and in that sense is different from the academic environment where students are still in a learning mode, and have not yet had experience in their chosen profession. Nonetheless, we suggest that many of the points discussed in this chapter are relevant for academic instructors teaching courses that involve the students in practice and application, as well as for instructors in a professional training program.

In discussing the issues involved in developing this online training course, we organize the discussion around two major phases of development: research leading to the development of substantive materials and factors considered during the development of the course materials and process. Although the two phases are not totally independent of one another, for the purposes of exposition, they can be usefully separated.

We note that while our approach is based on both sound theory and substantial experience, as well as feedback we received during formative testing of the program, at this writing, the specific techniques we implemented in our training program have not been validated by a thorough training evaluation. Therefore, while this chapter can make training developers aware of some of the key considerations that led to our implementation approaches, it cannot offer empirical proof of their effectiveness. Additional research is required for that.

## **Teamwork Skills Training**

Teamwork skills (Sims, Salas, & Burke, 2004) are valuable in many settings, but in emergency medical settings, they are crucial to the safety and well-being of patients. Many medical teams are ad hoc, and they, in particular, need to rapidly increase team proficiency when brought together by implementing effective leadership, backup

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