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Role of Feedbacks in Simulation-Based Learning

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Abstract : Feedback is a vital element for improving student learning in a simulation-based training as it guides and refines learning through scaffolding. A number of studies in literature have shown that students’ learning is enhanced when feedback is provided with personalized tutoring that offers specific guidance and adapts feedback to the learner in a one-to-one environment. Thus, emulating these adaptive aspects of human tutoring in simulation provides an effective methodology to train individuals. This paper presents the results of a study that investigated the effectiveness of automating different types of feedback techniques such as Knowledge-of-Correct-Response (KCR) and Answer-Until- Correct (AUC) in software simulation for learning basic information technology concepts. For the purpose of comparison, techniques like simulation with zero or no-feedback (NFB) and traditional hands-on (HON) learning environments are also examined. The paper presents the summary of findings based on quantitative analyses which reveal that the simulation based instructional strategies are at least as effective as hands-on teaching methodologies for the purpose of learning of IT concepts. The paper also compares the results of the study with the earlier studies and recommends strategies for using feedback mechanism to improve students’ learning in designing and simulation-based IT training.

Keywords : simulation, feedback, training, hands-on, labs
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