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Learning flexible skills in anesthesiology: comparing list and context learning in a human patient simulator

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Abstract: Traditionally, medical training has focused on step-by-step instructions of new skills. However, this may result in inflexible skills, which students cannot apply to new problems. To test whether instructions focusing on external context produce more flexible skills, we taught seventeen fourth year medical students the induction of anesthesia in a human patient simulator, either by giving them step-by-step instructions of the task (list learning) or by explaining the subgoals of the task and the external preconditions for the actions (monitors and patient state) (context learning). At the end of the experiment, an unexpected complication arose, requiring the participants to reconsider the effects of their actions.

Results showed no significant differences between the groups in learning performance, in complication response time or diagnosis. Possibly, the context condition still focused too much on internal knowledge structures and external cues may be even more important in skill acquisition.