Concept Design for Technology Enhanced, Self-paced Student Lesson

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New simulation software and hardware offers improved training capability at reduced costs. However, despite continued technological improvements, it can be difficult to follow sound training principles in a simulation-based, self-study format without the aid of an instructor. One domain that is in need of self-study opportunities is general aviation (GA); in particular, aviation weather concepts. Current aviation weather self-study materials lack the ability for pilots to practice learned aviation weather concepts and receive feedback on performance. Therefore, the aim of this study was to examine the efficacy of a desktop simulation-based, self-study lesson on GA missed approach due to weather. Experimental participants received the simulation lesson module with six simulation practice scenarios, while control participants received an instructor-led lesson without practice. Results indicated that pilots-in-training who experienced the self-study lesson followed the same pattern of learning outcomes as did participants in an instructor-led lesson.

*Keywords:* aviation, simulation, training, simulation-based training