

A Conceptual Framework for Supporting Expertise Development with Augmented Reality and Wearable Sensors

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Experts are imperative for supporting expertise development in apprentices but learning from them is difficult. In many cases, there are shortages of experts to train apprentices. To address this issue, we use wearable sensors and augmented reality to record expert performance for supporting the training of apprentices. In this context, we present the conceptual framework which outlines different instructional design methodologies for training various attributes of a task. These instructional design methodologies are characterized by their dependencies on expert performance and experts as model for training. In addition, they exploit the affordances of modern wearable sensors and augmented reality. The framework also outlines a training workflow based on the 4C/ID model, a pedagogic model for complex learning, which ensures that all aspects of conventional training are considered. The paper concludes with an application guidelines and examples along with reflection of the authors.

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