

Adaptive Repetition: A Fuzzy Logic based Control Strategy for Active Exploration in 3D-Virtual Learning Environments

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Abstract

In past decade, the use of cognitive aids such as textual, visual and audio in 3D-Virtual Learning Environments is increasing day by day as it guide and facilitate both the students and teachers to perform the task with ease in Virtual Environment. In recent studies, it has been observed that the use of cognitive aids in virtual learning environments reduce mental load on learner but at the same time it also minimizes active exploration which negatively affect their performance in non-supervised environment. Therefore, some researchers have shown negative concern about the use of cognitive aids in 3D-Virtual Learning Environments (3D-VLEs). In this paper, we presents the idea of "Adaptive Repetition" as control strategy for active exploration in 3D-VLEs. At the beginning of experiment in 3D-VLEs , students is given full support to perform the experiment with help of cognitive aids. Using a fuzzy logic based approach , the amount of aids are minimized whenever the experiment is repeated. The adaptive repetition approach put the students in active learning process and enables them to actively explore the learning environment. Ultimately, the negative effects of using cognitive aids in 3D-VLEs is minimized.

Full Text

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