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## Collaborative Education in a Virtual Learning Environment

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**Abstract:** For the last few decades, there was tremendous interest in harnessing 3D virtual environments for education and training. Multi-user game-like environments make use of non-player characters and quest activities in tutoring and training. This approach incorporates successful active learning and incremental progress. This article presents issues encountered while adapting the multi-user online game genre for educational virtual environments. In this endeavour, non-player characters play a central role in organising and delivering educational content. Educational virtual environments call for additional kinds of extension beyond generic user content creation as delivered in some virtual worlds like Second Life. Support for these environments will emphasise the creation of new activities. A set of libraries and techniques named portable non-player character tutors and quests reduces the effort needed to develop and integrate educational non-player characters. These non-player characters are introduced in CVE, a platform for rapidly developing educational virtual environments. The portable non-player character tutors and quests framework enables formatted web-based exercises, quizzes, and educational content to be incorporated into virtual worlds, reducing the effort needed to create new content. The framework presented in this article introduces initial non-player characters that support educational quest activities to the 3D environments users.