Abstract

The growing interest in the use of Serious Games in education raises many research questions and involves some concerns, particularly the ability to track and understand the path of a learner-player as well as his progress. Moreover, their integration into the learning process remains limited because they do not provide effective features for monitoring learner-player progress in order to show them the consequences of their decisions. Thus, we propose a monitoring system called MOLPP (Monitoring Learner-Player Progress in Serious Games) which adopts a new generic approach based mainly on Anderson's ACT-R theory. The MOLPP system implements the Model Tracing diagnostic methodology derived from Anderson's ACT-R theory to analyze learner-player interactions from the Serious Game environment and match these interactions with the performance model, in order to generate a corrective intervention pertaining to the evaluation mode in the form of immediate feedback by complying with all the production rules of the performance model.


**Index Terms**

Computer Science

Information Systems

**Keywords**

Serious games, Learner-Player tracking, E-assessment, In-game interactions, Anderson's theory, ACT-R, Production rules, Tracing Model, multi-agents systems.