Development and Evaluation of Hybrid Virtual Learning Environments

PHD RESEARCH THEME PROPOSAL

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This research theme follows from ongoing being carried out in the context of the APEX project[1]. In the context of that project, the applicability of virtual environments to the prototyping of smart environments (i.e. environments enriched with ubiquitous computing technology) has initially been explored. This has originated the development of a framework for the prototyping and evaluation of smart environments which combines virtual environments with actual physical devices such as smartphones [1].

More recently, the applicability of this framework, together with gamification strategies, to support learning activities has been investigated. This work has resulted in the development of a first person serious game [2, 3]. That is, a serious game where users control an avatar placed within a three dimensional (3D) virtual world. Serious games encourage playing in order to learn rather than merely to entertain. Games can be used to instruct and to inform as well as to provide pleasure. Mike Zyda [4] defines a Serious Game as a mental competition, played with a computer in accordance with specific rules, that uses entertainment to promote training, education, health, public policy and strategic communications objectives.

With the current proposal we aim to broaden the scope of the work, extending it from isolated serious games into virtual learning environments (VLEs). VLEs are designed information/social spaces where educational interaction occurs [5]. The representation of the space can range from text to three dimensional immersive worlds. More specifically, we are interested in exploring how best to integrate the technologies used in the APEX project (virtual environments, mobile devices) in the development of learning environments, and what role gamification can play in that context.

In order to carry out the work, the problem of assessing alternative VLE designs must also be addressed. Hence work must also be carried out on determining the best approaches to evaluate VLEs. Of particular interest are techniques that might be used during development to validate design decision before actual deployment.

[1] http://ivy.di.uminho.pt/apex

References

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