Authoring Gamified Intelligent Tutoring Systems

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Abstract

Researchers are increasingly interested in Gamified Intelligent Tutoring Systems (ITSs) to provide adaptive instruction and to enhance engagement of students. However, teachers have been not considered as first-class citizens in the design of these systems. Three research problems arise when trying to empower teachers in designing gamified ITS: (1) high complexity and variability to manage; (2) need to consider theories and design practices; and (3) need to provide simple and usable solutions. To target these problems, in this thesis, we present a solution for Authoring Gamified ITS (AGITS) that makes use of an ontology-based feature model (OntoSPL) to deal with the variability at runtime and takes advantage of an ontology (GaTO) that connects gamified ITS theories and design practices to constrain the variability space for designing these systems. Our results indicate that teachers have a high acceptance level (i.e., in terms of ease of use, usability, and low complexity) for using AGITS, customizing their own gamified tutors in less than five minutes.

Reference (full work): Dermeval, D. Authoring Gamified Intelligent Tutoring Systems. Ph.D. thesis. Coordenação de Pós-Graduação em Ciência da Computação (COPIN), Universidade Federal de Campina Grande (UFCG). 2017