Investigating Learner Trust in Adaptive Learning Systems

Abstract

Open learner models (OLM) is an adaptive learning system that externalise the learner model contents to the user. OLMs assist learners in tracking their knowledge, and promote independent learning by offering information about their knowledge that the learner would not usually see (e.g. a breakdown of concept understanding or descriptions of misconceptions held) which may allow learners to identify areas to target their study. Opening the learner model to the learner may increase their perceptions of how a system evaluates their knowledge and updates the model. Furthermore, some OLMs giving learners to have some control over their models contents. Therefore learners can influence the system in the modeling process. Learners may underestimate or overestimate their knowledge in a self-assessment, and provide incorrect information to their learner model. This raises questions of trust relating to whether the learner believes the evaluations are correct, and whether they trust the system as a whole. This paper investigates learner trust in various open learner model features: the complexity of the model presentation; the level of learner control over the model contents; and the facility to view peer models and release one's own model for peer viewing. An experimental study is done with postgraduate students using two OLM systems – OLMlets and Flexi-OLM. They were instructed to answer questions, explore the learner model views and the system-specific features (persuading and negotiating; use of peer models), and then continue to use the OLMs as best suits their approach to learning. Results suggest that different users may find different features of OLMs important for developing trust.