Abstract

In this paper, a Bayesian-Network-based model is proposed to optimize the Global Adaptive e-Learning Process (GAeLP). This model determines the type of personalization required for a learner according to his or her real needs, in which we have considered both objects and objectives of personalization. Furthermore, cause-and-effect relations among these objects and objectives with the learning phases, the learner, and the Intelligent Tutorial System (ITS) are accomplished. These cause-and-effect relations were coded into a Bayesian Network (BN), such that it involves the entire GAeLP. Four fundamental phases that have a direct effect in the learner's learning process are considered: Learner's previous knowledge Phase, Learner's Progress Knowledge Phase, Learner's /Teacher's Aims and Goals Phase, and Navigation Preferences and Experiences Phase. The efficacy of the Bayesian networks is proven through the first phase, in which learners of different knowledge area were select. The main results in this work are: causal relations among objects and objectives of personalization, knowledge phases, learner and electronic system. Personalization profiles set and their probabilities in the first phase were obtained to diagnose the type of personalization of the learner.