Designing and Evaluating Pedagogic Conversational Agents to Teach Children

Authors : Silvia Tamayo-Moreno, Diana Pérez-Marín

Abstract : In this paper, the possibility of children studying by using an interactive learning technology called Pedagogic Conversational Agent is presented. The main benefit is that the agent is able to adapt the dialogue to each student and to provide automatic feedback. Moreover, according to Math teachers, in many cases students are unable to solve the problems even knowing the procedure to solve them, because they do not understand what they have to do. The hypothesis is that if students are helped to understand what they have to solve, they will be able to do it. Taken that into account, we have started the development of Dr. Roland, an agent to help students understand Math problems following a User-Centered Design methodology. The use of this methodology is proposed, for the first time, to design pedagogic agents to teach any subject from Secondary down to Pre-Primary education. The reason behind proposing a methodology is that while working on this project, we noticed the lack of literature to design and evaluate agents. To cover this gap, we describe how User-Centered Design can be applied, and which usability techniques can be applied to evaluate the agent.