Intelligent Tutoring Systems That Adapt to Learner Motivation

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Abstract

This chapter provides an introduction to the topic of motivation from the point of view of those interested in the design or use of intelligent tutoring systems. To that end it introduces some of the complexities of motivational states and processes together with a range of motivational theories and their application in intelligent tutoring systems. The theories include learner beliefs about learning, including their goal orientation, their self-efficacy and their attributions of causality, as well as their academic emotions. It also introduces Keller's work on the design of tutoring systems that puts motivation at the heart of that design process. The chapter describes six tutoring systems that have been designed to deal with the learner's motivation, either as a one-off adaptation or dynamically. These six were chosen to cover a reasonably broad range of motivational theories and to cover the history of the field of motivationally adaptive intelligent tutoring systems from its start to the present day.

Keywords: intelligent tutoring systems, adaptation, motivation, learner

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