**INTRODUCTION**

An Intelligent Tutoring System (ITS) provides personalized

learning content to students based on their needs and preferences. An ITS consists of thelearning content, the learner model, and the adaptation engine. Learner models are constructed from the log files

available in the ITS. The students’ interaction with ITS, such as responses to questions, the number of attempts at a task, and the time taken for various activities (such as responding or reading) are captured in the ITS log file. Learner models also typically contain information such as the students’ previous knowledge and background [1], from which it is possible to infer the students’ cognitive states. The adaptation engine personalizes the learning content based on the data from the learner model. It is now well established that the learning process involves both cognitive and affective processes [2], [3], and the consideration of affective processes has been shown to achieve higher learning outcomes [4], [2]. The importance of a student’s affective component in learning has led ITS to include students’ affective states

such as frustration, boredom, confusion, flow, curiosity, and anxiety in their learner models. In this research work, we focus on the response to students’ frustration.