

Modelling a Tutor for E-Learning Support

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E-learning web systems allow students to educate themselves for example by studying materials, solving tests and doing exercises. Students take actions (text reading, answer inputting, text messaging etc.) which change the learning environment in which they work. It is proven that students can learn more if they are included in the learning process and this process is adapted to the needs of individual student. Likewise it is known that student advances faster in the learning process if he/she is guided by someone who acts more like a friendly tutor than a leading authority [1].

The architecture of an intelligent tutoring system can be divided into four parts: the domain model, the student model, the tutoring model and the student's interface. In this research we explore way for improvements of the tutoring model part of this architecture. The tutoring model receives input from both the student model and the domain model and makes decisions about which tutoring strategies and actions to take (Figure 1).

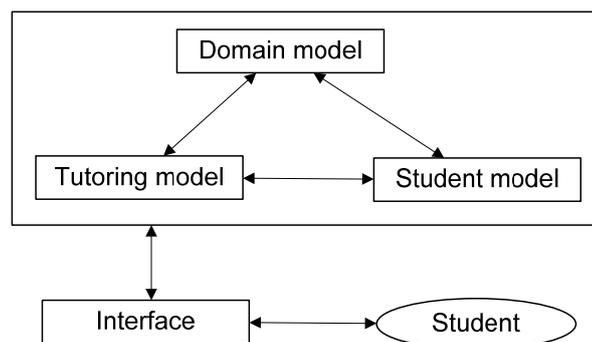


Figure 1. Typical components of an intelligent tutoring system.

These decisions include deciding whether it is time to intervene and when is the best time and how to do so regardless of whether it is a feedback on the correctness of steps taken – not only the final answers, providing error specific feedback etc. Selecting the

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next steps in the learning process (choosing the content and an appropriate form of its presentation – many intelligent tutoring systems present content only as a plain text but some students might prefer different approaches like video, self solving exercises with narration etc.) is also part of the tutoring model's functionality. Other responsibilities of tutoring model include offering the context-sensitive next-step hints currently primarily called upon the student's request what presents itself as a possible area for improvement and automation.

The goal of this research is to propose improvements of the tutoring process, design them and implement a tutor model based on these improvements into an existing learning system [2], *Peoplia*, which is an interactive web-based environment that facilitates student learning by a socially intelligent tutoring agent.

The learning system also facilitates for student collaboration, and the tutor can support and guide this collaboration to archive better results. This can be done by dividing students into appropriate groups (e.g. students who understand the problem can work with students who do not in order to help them advance faster) and encouraging them in helping each other in a way that is useful for all of them – tutor needs to analyze whether the feedback given by tutoring students is helpful for their tutees and help them in providing relevant help [3].

Tutors can also provide support in making the studying more user friendly. Students advance faster if they are guided by a friendly tutor not a strict authority or machine like teacher. Consequently tutor's communication and feedback patterns should feel natural to the students, posing another challenge in this research area.

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