



An Emotional Intelligent Tutor System based on Example Tracing

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Objective:

We intended to design an emotional intelligent tutor system to help students to learn solving a problem through solving related examples. Tutor asks students to solve an example of problem; then verifies and provides feedback on the correctness or incorrectness of each step they did. Among these steps, the tutor tries to identify the student's current emotion as well. So it can try to understand that the occurred incorrectness by the student is due to his/her learning weakness or effects of negative emotions (anger, confusion, stress, etc.) on the student.

Method:

Before students can start solving an example, the tutor must define steps of correct and incorrect solutions. We will use CTAT to record correct and incorrect solutions. When a student inputs any step of her/his solution, the tutor will be able to compare the input step with the corresponding step of right solutions. If it is correct, the student can continue and do the next steps. But if it is incorrect, the tutor recognizes the student's mistake and gives him/her appropriate hints. It is possible that the wrong step performed by the student matches with one step of predicted incorrect solution. In this case the tutor should be able to give the student more detailed guidance. After each wrong step by the student, the tutor also asks the student about her/his emotion and records her/his state of emotion. The tutor will use the student's emotion state to make appropriate response.

Results:

In the test phase we aim to test our system with 20 students consisting of two groups of 10 students each. Students will be selected randomly. The first group solves an example of special problem in the traditional way, and the second group solves the same example by our tutor system. Then we evaluate the learning level of the two groups by a similar exam letter.

We can repeat this scenario several times and finally compare the results. We also use some questionnaires that users can reflect their opinion about our systems.

Conclusion:

Cognitive tutor is used in real classroom situation at thousands schools nationwide in the United States. In this paper we introduced an emotional intelligent tutor system that is able to record correct solutions, alternative correct solutions and some incorrect solutions. Also tutor records state of student emotion and uses it to improve the quality of feedbacks and hints. Students can solve examples through the system and be controlled by the tutor step by step.

Keyword:

Intelligent Tutor System, Emotion, Cognitive Model

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