Adaptive Support for Cultural Discussion

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Background

Classroom motivation

Online discussion is frequently used instructional technique for domains which are not procedural

Discussion must be on-topic and elaborated

Instructors rarely have time to fully monitor and respond to forums

Learning science motivation

Online discussion affords time for reflection, multiple viewpoints, disinhibition

Studying multi-agent asynchronous discussion can lead to a broader understanding of the role of interactive communication in learning

Research questions

What properties correlate with learning in a multi-agent asynchronous forum?

In what way are these properties manipulated by providing automated support for discussion?

What effects does the completeness of the domain model in the automated support have on student understanding?

Instructional design for cultural discussion

1. Authentic cultural material

Watch video clip and predict and explain what will happen next, compare subsequent events to home culture
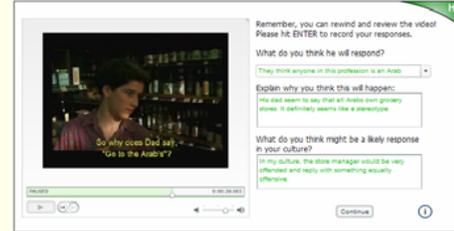
2. Class discussion forum

Write hypotheses about and reflection on cultural explanations, and elaborate on discussion by replying or starting new post on forum

3. Feedback and revisions

Receive feedback from automated agent and revise post using suggestions for improvement and incorporating new content before submitting to the forum

Examples from May 2007 pilot
9 participants
French 57 classroom

> I think that he is Jewish because he is at the store on a Sunday and because of the words of his father, "Go to the Arab's". This film clip is interesting because there is so much tension between the Jews and the Arabs, but in the film, Momo learns that it is not the identity or the culture of a person that is most important.

Evaluation:

Is on-topic
Contains an argument
No multiple perspectives
Contains cultural facts
Contains prior knowledge

> No, I think that he is impolite. He said "My name is not Momo…" Therefore, he is a little impolite.

Evaluation:

Is on-topic
Contains an argument
No multiple perspectives
No cultural facts
No prior knowledge

Design of automated support & future evaluation

Properties
- Relevant knowledge (is on-topic)
- Applies knowledge (makes a good argument)
- Evaluation of knowledge (takes multiple perspectives)
- Target knowledge (cultural facts are correct)
- Prior knowledge (elaborates from prior knowledge)

The automated agent reviews discussion posts for 5 properties which we identified as potential correlates with learning in asynchronous discussion. Currently, very simple machine learning techniques support a model which takes a tentative feedback approach.

Future work will further develop the agent and evaluate its effects on learning in a series of classroom studies. The agent's model will also be used to intelligently support a student from the class who acts as a forum moderator.