**Designing a Teachable Agent with Social Intelligence**

A learning environment which includes an embodied intelligent agent capable of both task-directed and social interaction

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**Research Objectives**

How do manipulations of various characteristics of a teachable agent, such as its knowledge profile, visual characteristics, and communicative abilities, affect pedagogical outcomes?

How can social intelligence of a teachable agent affect cognitive, emotional and social constructs known to promote learning, such as self-efficacy and engagement, as well as enhancing students' experiences?

**Background & Aim**

We develop and study a learning environment in which a social conversational module is closely interrelated to a task-oriented teachable agent as an integral part of an educational game. The aim of the agent's social communicative behavior is to:

- build a relationship and establish trust,
- enrich the game's motivational qualities,
- enable pedagogical interventions through dialogue.

**Development**

Agile and user-centered development of the conversational module, including:

- focus group interviews,
- human-human role play dialogue analysis,
- iterative prototyping and testing.

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**Knowledge Profile**

The conversational capacities of the agent is expanded from a limited domain-specific and task-oriented conversation to a broader human-like conversation. This raises the students' expectations on the pedagogical agent's knowledge profile. Through involving actual students in the design process, we have step by step discovered a number of topics that cover the majority of questions students pose.

**Visual Characteristics & Animation**

A naturalistic or even semi-naturalistic style is explicitly avoided to downplay student expectations from the agent as behaving just like a human being. Cartoon-like characters can easily convey affective cues through animations of body and face.

**Communicative Abilities**

Chat-like mixed-initiative dialogue that includes anecdotes and mini-narratives on both off-domain and on-domain topics that convey positive attitudes towards math and school.

**Social Profile & Personality**

Designed to meet user expectations on general personality features, such as being extrovert, humorous, kind, expressed through visual appearance as well as verbal and non-verbal communication (dialogue and animation).

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