Learn2Learn Buddy
Virtual agents to support the learning process

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Motivation

- (MSc) students have difficulties on managing their thesis projects
- At TU Delft, Master thesis duration is is 38 weeks on average instead of the nominal number of 21 weeks
    - (N=126, SD=13)
    - This number does not include students that do not complete their thesis

Motivation

- Reasons for delay (survey):
  - Student: Motivation, capabilities and skills, many commitments (e.g. work)
  - Topic: complexity, size, novelty of topic/domain/approach
  - Process: perfectionism, self-study, preparation
  - Skills: analytic skills, writing skills, (lack of) planning project phases and/or other activities
  - Supervision: insufficient, differences between supervisors

Support

- Studies show that students can enhance their academic performance by becoming aware of their own thinking as they read, discuss, otherwise gather information and solve problems
- Benefits:
  - transfers responsibility for monitoring learning from lecturer to student, and
  - promotes positive self perception, affect and motivation amongst students.

- Place responsibility on the students

Requirements for support tool

- Planning (how to achieve objectives or general change)
- Doing (learning through the experience of doing with greater awareness)
- Recording (thoughts, ideas, experiences, evidence of learning through writing, audio, video, visual or other means)
- Reviewing (reflections on what has happened, making sense of it all)
- Evaluating (making judgments about self and own work and determining what needs to be done to develop/improve/move on)
- Link to existing tools (scheduling, course management...)

Learn2Learn

- Aim is to explore the potential of using virtual agents as buddies to support master thesis students and their coaching teachers in their master thesis project execution.

- Natural interaction
- Access and present content and context relevant information
- Adapt to the learning style of the user
- Employ emotion and persuasion to engage and motivate the student
- Integration with social network tools and/or study tools (e.g. blackboard)
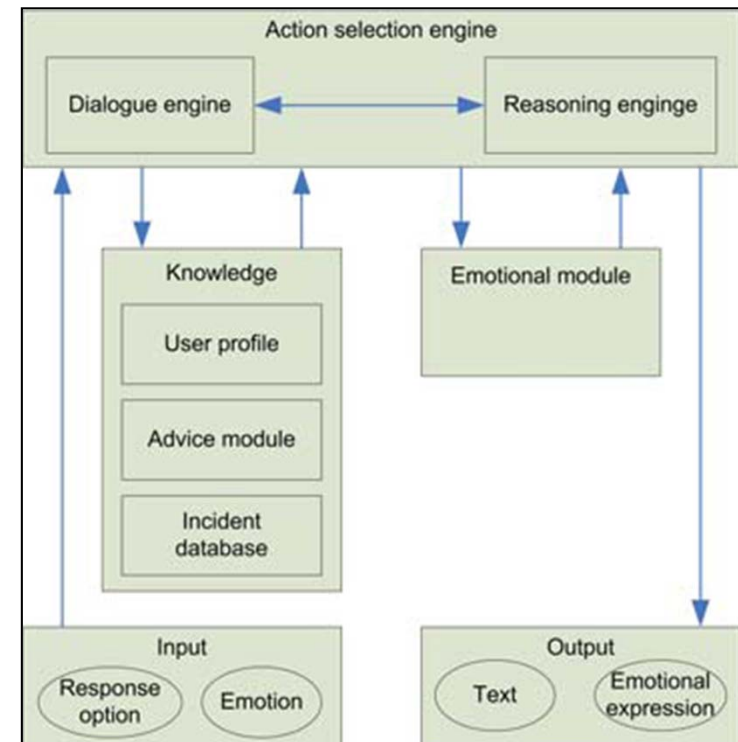
Learn2Learn Buddy concept

Interface to systems

architecture

Interface to others

Action selection engine

Dialogue engine ⟷ Reasoning enginge

Knowledge

User profile

Advice module

Incident database

Emotional module

Input

Response option   Emotion

Output

Text   Emotional expression

Blackboard

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Learn2Learn project phases

- Exploration.
    - Literature research and requirement elicitation,
- System architecture
    - Multi-agent system including Embodied Conversational Agent (ECA), information agents, user profiling agent
- Affective behavior design
    - pedagogical, peer-learning or demonstrating.
- Prototyping
- Usability Evaluation and Testing

- Work in progress!

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QUESTIONS?