



Figure 1: Screen shot of Robin, the empathic virtual buddy.

presentation demonstrating the prototype can be found at <http://ict1.tbm.tudelft.nl/~janneke/aamas2013/Robin.pptx>. Robin's embodiment was designed after an old computer to make it look like an expert on digital matters such as cyberbullying. It is capable of expressing different emotional expressions, including happy, sad, angry, afraid, and surprised at either high or low intensity.

The user communicates with the agent by selecting predefined response options. The user's emotional state is transmitted through the AffectButton [3]. The AffectButton is a tool for explicit emotion input that shows a rudimentary and gender-neutral face that changes its expression based on the position of the mouse cursor. By clicking the button when it shows the emotional expression the user wants to communicate, the emotion is sent to the virtual buddy.

In order to understand, comfort and suggest actions to the user, the virtual buddy combines the structure of the 5-phase model with an emotional model. This model determines whether Robin expresses sympathy, encouragement, or compliments the user. It is based on the OCC model [8]. In OCC, emotions are conceptualized as responses to events, agents, and objects. The OCC model specifies eliciting conditions for different emotion types. In the prototype, the user's response options are interpreted as actions and events, which are appraised by the system. The emotions triggered by these appraisals are expressed both verbally and nonverbally.

For example, during the conversation the buddy asks the user how he responds to being bullied. The users answer specifies an action. In OCC actions of agents are appraised with regard to the praiseworthiness of the action. In the domain of cyberbullying 'talking to someone about being bullied' is a praiseworthy action. So, if the user selects this answer in response to the buddy's question, admiration is triggered. The virtual buddy expresses admiration by changing its facial expression to happy and uttering a compliment, e.g., 'Good of you to talk to some one!'.

Not all response options trigger emotions. If the user selects a response option that does not trigger an emotion, the buddy's emotional state (and facial expression) gradually decays to neutral.

The buddy's verbal utterances are based on counselor's utterances from actual chat conversations about bullying. Sympathy, compliment and encouragement are always expressed in response to user input. Advice and teaching are offered proactively. When the user clicks the AffectButton, the agent mirrors the emotional expression and utters a sympathetic response.

4. EVALUATION

The prototype of the empathic virtual buddy was evaluated in a focus group with six pedagogical experts. The results indicate that the buddy is able to communicate social support. The experts substantiated their claims about feeling supported by referring to specific behavior, including the verbal expression of emotions and the facial expressions. In particular, the combination of verbal and nonverbal expressions was commended by the experts. On the whole, the emotional model selects appropriate emotions to express, although the experts agreed that the number of verbal empathic responses should be increased.

The results indicate that the prototype works and that social support is communicated. The next step is to involve children in the evaluation of the prototype.

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