Exploring the Personality of Virtual Tutors in Conversational Foreign Language Practice

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Research Question

- **Foreign language conversational practice** possible with Computer Assisted Language Learning (CALL) systems
- **Virtual tutor** usually embodied, e.g. avatar with a chatbot
- **Improvements** needed to engage learners more, e.g. more relevant content/gamification/personalisation
- **Tailoring tutor personality** might increase engagement with CALL systems
- **Interaction between communication strategy and personality** needs to be investigated

Can we observe variations in the interaction and feedback of students confronted with opposing tutor personalities?

Overview: Wizard-of-Oz Study

1. **Paticipant's conversation with Virtual Tutor** – 1 personality assigned at random (see Fig. 1)
2. **Personality questionnaire** – participant rates tutor's personality
3. **Feedback survey** – information on participant enjoyment & recollection of interaction

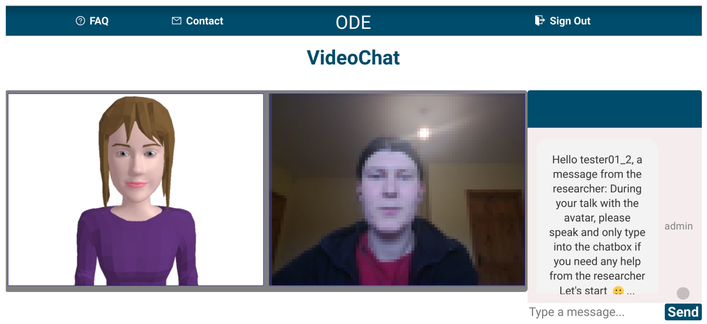

Figure 1. Participant view during interaction with the virtual tutor

Avatar and Personalities

Embodiment of Virtual Tutor:

- **Expressive avatar** from [2] with adjustable facial expressions
- **Irish English, female voice** (`https://www.cereproc.com/en/node/1155`)
- **Pre-recorded video clips** played by researcher during experiment

Personality Design

- Personalities varied along 3 dimensions of OCEAN model [1]: Extroversion, Openness and Agreeableness
- Expressed via dialogue scripts, posture, facial expression and speech characteristics (see Figure 2)
- **Personality 1 (P1):** extroverted, open, friendly and sociable,
- **Personality 2 (P2):** introverted, closed off, curt and distant

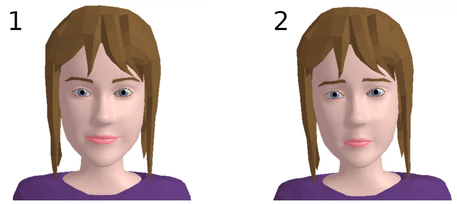

Figure 2. Avatar personalities – P1 (left) and P2 (right)

Hypotheses

- **P1 more pleasant and enjoyable** to converse with, i.e. positive user feedback, high scores on personality survey
- **P2 with low personality scores** and less enjoyment of interaction
- **Longer conversations with P1** encouraging participants to talk more than P2

Results & Conclusions

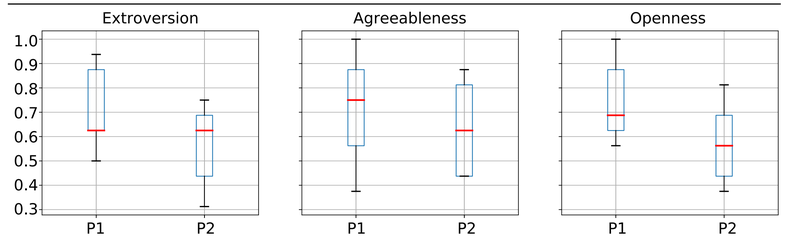

Figure 3. Personality scores of both avatars per dimension

- **18 participants**, 44% male and 56% female natively speaking German(83%), Italian(11%) and Chinese(5.6%)
- **P1 & P2 perception not as distinct as expected** – P1 overall higher scores (Fig. 3) but relatively much overlap
- **Openness significantly different**, Extroversion marginally so
- **Speaking time ratio (human vs. avatar) significantly distinct**, confirm last hypothesis

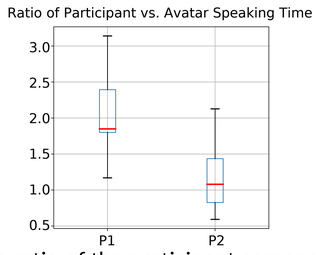

Figure 4. Speaking time ratio of the participant compared to the avatar for both experiment groups

- Pilot study indicates P1 more effective inducing users to talk
- **More research needed** to solidify results, e.g. more participants, validate personality differences, automate experiment via chatbot

References

[1] Lewis R Goldberg. An alternative "description of personality": the big-five factor structure. *Journal of personality and social psychology*, 59(6):1216, 1990.

[2] John Sloan, Daniel Maguire, and Julie Carson-Berndsen. Emotional response language education for mobile devices. In *22nd International Conference on Human-Computer Interaction with Mobile Devices and Services*, MobileHCI '20, New York, NY, USA, 2020. Association for Computing Machinery.

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