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Measuring Pedagogical Agent Persona and the Influence of Agent Persona on Learning

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Abstract: Pedagogical agents are virtual characters embedded within a learning environment to enhance student learning. Researchers are beginning to understand the conditions in which pedagogical agents can enhance learning, but many questions still remain. Namely, the field has few options in terms of measurement instruments, and limited research has investigated the influence of pedagogical agent persona, or the way the agent is perceived by students, on learning outcomes. In this study, we re-examine the Agent Persona Instrument (API) using confirmatory factor analysis and Rasch methods. We then examine the influence of agent persona on learning outcomes using path analysis. The results confirmed the four factor structure of the instrument, and the fit of items with the Rasch model demonstrates construct validity in our context. However, the analyses indicated that revisions to the instrument are warranted. The path analysis revealed that affective interaction significantly influenced information usefulness variables, however perceptions measured by the API had no significant impact on learning outcomes. Suggestions for revising the API are provided.

Keywords: Pedagogical agent; Agent persona; Intelligent tutoring systems; Multimedia/hypermedia systems; Simulations

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