A gender matching effect in learning with pedagogical agents in an immersive virtual reality science simulation - DTU Orbit (17/09/2019)

The main objective of this study is to determine whether boys and girls learn better when the characteristics of the pedagogical agent are matched to the gender of the learner while learning in immersive virtual reality (VR). Sixty-six middle school students (33 females) were randomly assigned to learn about laboratory safety with one of two pedagogical agents: Marie or a drone, who we predicted serve as a role models for females and males, respectively. The results indicated that there were significant interactions for the dependent variables of performance during learning, retention, and transfer, with girls performing better with Marie \( (d = 0.98, d = 0.67, \text{ and } d = 1.03; \text{ for performance, retention, and transfer, respectively}) \) and boys performing better with the drone \( (d = -0.41, d = -0.45, d = -0.23, \text{ respectively}) \). The results suggest that gender-specific design of pedagogical agents may play an important role in VR learning environments.

General information
Publication status: Published
Organisations: Bacterial Synthetic Biology, Novo Nordisk Foundation Center for Biosustainability, University of Copenhagen, University of California at Santa Barbara
Corresponding author: Makransky, G.
Contributors: Makransky, G., Wismer, P., Mayer, R. E.
Number of pages: 10
Pages: 349-358
Publication date: 2019
Peer-reviewed: Yes

Publication information
Journal: Journal of Computer Assisted Learning
Volume: 35
Issue number: 3
ISSN (Print): 0266-4909
Ratings:
BFI (2019): BFI-level 2
Web of Science (2019): Indexed yes
Original language: English
Keywords: Immersive virtual reality, Multimedia learning, Pedagogical agents, Social agency theory, Virtual learning
DOIs: 10.1111/jcal.12335
Source: FindIt
Source ID: 2442036427
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review