Gender differences in students' perceptions and outcome of feedback from embodied AI instructors

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Abstract

Embodied AI instructors can deliver personalized feedback at scale, but their design may not benefit all learners equally. In a gender-balanced experiment, students wrote an essay and received personalized praise, criticism, and suggestions from an AI instructor with either a realistic or cartoonish appearance. Across genders, the perceived humanness significantly increased the perceived reasonableness of the feedback. However, a key interaction emerged: male students rated feedback from the cartoonish instructor as less reasonable compared to the realistic one, whereas female students' ratings were unaffected by the appearance. Intriguingly, while female students perceived a larger humanness gap between agents than their male counterparts, they did not find the cartoonish instructor less credible, indicating that factors beyond perceived humanness influenced their trust. Furthermore, female students produced higher-quality revisions, particularly following critical feedback. This study demonstrates that AI embodiment triggers gender-specific responses, highlighting the need for equitable design in embodied AI agents.

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