From Learning Companions to Testing Companions: Experience with a Teachable Agent Motivates Students’ Performance on Summative Tests

# Details

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A total of 274 fourth-grade pupils aged 9 to 10 participating in math class at different schools in southern Sweden.

## Implications For Educators About

STEM Education

# Abstract

In three quasi-experimental studies, we investigated the effects of placing a Teachable Agent (TA) from a math game in a digital summative test. We hypothesized that the TA would affect test performance, even without actual "teachability", by social influence on the test situation. In Study 1 (N=47), students did a pretest, played the math game for seven weeks, and did a posttest either with or without the TA. In Study 2 (N=62), students did not play the game but were introduced to a TA directly in the posttest. In Study 3 (N=165), the game included a social chat with the TA, and the posttest offered a choice of more difficult questions. Results showed significant effects of the TA on choice and performance on conceptual math problems, though not on overall test scores. We conclude that experience with a TA can influence performance beyond interaction and informative feedback.

# Outcome

"Results showed significant effects of the TA on choice and performance on conceptual math problems, though not on overall test scores." (Authors, abstract)