Faculti Summary
https://staging.faculti.net/increasing-learner-interactions-with-e-learning-systems/

The research project aimed to evaluate how different elements affect e-learning systems used for teaching complex software applications, like Photoshop and Excel. The focus was on enhancing learning performance while minimizing cognitive load. Cognitive load theory highlights the limitations of short-term memory in learning new concepts.

The study specifically assessed the impact of two elements: interactive animation and a pedagogical agent (essentially a talking avatar). Interactive animation allows users to engage with the material actively, while the pedagogical agent serves as a virtual instructor.

The hypothesis was that interactive animation would reduce cognitive load and enhance learning performance, while the pedagogical agent might have mixed effects depending on its interaction style. Researchers conducted experiments with 80 participants unfamiliar with Microsoft Access, the software taught. The experiment compared traditional static animation with interactive animation, and audio-only content with audio plus a pedagogical agent.

Findings showed that interactive animation significantly improved user performance and reduced perceived difficulty for complex (high interactivity) materials, demonstrating its effectiveness in enhancing learning. However, the pedagogical agent increased cognitive load, leading to worse performance, due to redundancy and distraction.

The study suggests avoiding additional graphical elements like pedagogical agents in teaching contexts that emphasize software application use while recommending further research into their efficacy in different educational settings, such as language learning or teaching motor skills.