

Studying the Effectiveness of Using Narrative Animation on Students' Understanding of Complex Scientific Concepts

Authors : Atoum Abdullah

Abstract : The purpose of this research is to determine the extent to which computer animation and narration affect students' understanding of complex scientific concepts and improve their exam performance, this is compared to traditional lectures that include PowerPoints with texts and static images. A mixed-method design in data collection was used, including quantitative and qualitative data. Quantitative data was collected using a pre and post-test method and a close-ended questionnaire. Qualitative data was collected through an open-ended questionnaire. A pre and posttest strategy was used to measure the level of students' understanding with and without the use of animation. The test included multiple-choice questions to test factual knowledge, open-ended questions to test conceptual knowledge, and to label the diagram questions to test application knowledge. The results showed that students on average, performed significantly higher on the posttest as compared to the pretest on all areas of acquired knowledge. However, the increase in the posttest score with respect to the acquisition of conceptual and application knowledge was higher compared to the increase in the posttest score with respect to the acquisition of factual knowledge. This result demonstrates that animation is more beneficial when acquiring deeper, conceptual, and cognitive knowledge than when only factual knowledge is acquired.

Keywords : animation, narration, science, teaching

Conference Title : ICEAT 2022 : International Conference on Educational Animations and Technology

Conference Location : Toronto, Canada

Conference Dates : June 16-17, 2022