
In this study, two groups (control and experimental) of 15-16 years old students were studied to determine the role of computer simulations in the development of functional understanding of the concepts of velocity and acceleration in projectile motions. Both groups received traditional classroom instruction on these topics; the experimental group used computer simulations also. The results of the study show that students working with simulations exhibited significantly higher scores in the research tasks. The researchers claim that computer simulations could be used complementary or alternative to other instructional tools in order to facilitate students’ understanding of velocity and acceleration.

**Keywords:** Simulations; Improving classroom teaching-learning; Physics; Interactive learning environments; Greece.