SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Interactive Presentations (IP)

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PROMOTING STEM AND SPACE THROUGH EDUCATIONAL GAME SOFTWARE

Abstract

The process by which students learn has evolved very little over the last several centuries. However, with the advent of modern-day computing and mobile Internet devices, we are now entering an era of personalized, digitally-assisted education. Millions of children between the ages of 13 and 17 stand to benefit from better, more compelling academic software.

This report looks at the advantages of utilizing gamification, machine learning, and friendly competition to promote science, technology, engineering, and math within secondary school systems. It contains lessons learned from the pilot program conducted by Intergalactic Education within the Charles County Maryland School District during October and November of 2016. During this period, three classes of 8th-grade honors algebra students were allowed access to a simulation game called Space World™. One of the teachers involved in the program was chosen by the Space Foundation to become a part of their selective Teacher Liaison Program cohort.

This analysis also identified a number shortcomings in existing education technology solutions. The research indicates that instructional products do not have the high-fidelity graphics and animations that millennials have come to expect from applications they download on their handheld computers. Additionally, teachers and school administrators are not effectively leveraging big data collection that can be seamlessly integrated into these types of programs.

The purpose of Space World™ is to excite teenagers about the future and entice them into doing more homework by offering in-game rewards. Students learn about the dangers of solar radiation, space debris, and near-Earth objects while simultaneously practicing how to solve linear functions using the quadratic equation.