Paper ID: 91313
student

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

Author: Ms. Rym Chaid
Concordia University, Canada

"GALACTIC CLASSROOMS: A COMPARATIVE ODYSSEY OF INNOVATIVE SPACE EDUCATION STRATEGIES FOR DIVERSE LEARNERS - LESSONS AND RECOMMENDATIONS"

Abstract

As Humanity aims to return to The Moon and establish Deep Space Mars settlements, an educated and informed public becomes a crucial ally in advocating for the continued exploration of space, appreciating its significant influence on technological advancement, scientific discovery, and the broader understanding of our place in the universe. In the midst of technological innovations, STEM education plays a pivotal role in space exploration as it serves as the catalyst for inspiring and nurturing the next generation of scientists, engineers, and explorers.

A notable obstacle in space education is the low ratio of student engagement, predominantly in STEM subjects. The conventional approach to education fails to inspire the innate curiosity and enthusiasm essential for effective learning, especially within in the fields of Science, Technology, Engineering, and Mathematics (STEM). This highlights the need for innovative and experiential teaching methods to better cultivate a love for learning and exploration in these crucial disciplines.

In an effort to address this challenge, we have seen a rise of educators, teachers and mentors leveraging a variety of tools and strategies to enhance space education. Virtual reality simulations, online classroom platforms, and interactive educational workshops are more and more utilized to make complex scientific concepts accessible to a younger audience. In this comparative study, we have examined trends in lesson plans, various open-source tools and learning resources educators have developed, and how each of them enables educators to cater to different demographics, ranging from young children to university students, low income communities, with an emphasis on remote and indigenous communities as well as women, who remain a strong minority in the STEM and space industry. Also discussed are strategies for effective communication, including public lectures, science fairs, and community events, employed to raise awareness about the significance of space exploration in our daily lives, as well as outreach activities including citizen space sciences, where the public actively contributes to research initiatives.

Significant attention was given to Canadian initiatives such as The Mars Society of Canada's Mars Explorer Program, national outreach programs and various student societies' rocket, cubesat and rover competitions. Inputs from both organisers and participants as well as various interviews, ensure the reproducibility of these practices all around the world in a summary educational tool-guide concluding the study.