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TEACHING ABOUT OUTER SPACE IN DEVELOPING COUNTRIES: THE EXPERIENCE AND LEARNED LESSONS OF "MARTEENS- SCHOOL FOR ASTRONAUTS" IN CHILE DURING ITS INITIAL FIVE YEARS OF IMPLEMENTATION.

Abstract

In the discourse surrounding the development of space capabilities, it is often asserted that the initial exposure during primary formal education plays a crucial role in instilling an innovative mindset in students. This early engagement not only expands the likelihood of inspiring them towards space-related professional careers but also fosters a broader understanding of the significance of space exploration. Traditionally, initiatives of this nature have been implemented using a "top-down" model, involving significant influence from national decision-makers that shapes educational curricula and policy directives. Space agencies, as key organizations in this context, play a pivotal role in prioritizing the development of space educational programs, particularly those aimed at nurturing the future generation of space professionals.

However, the reality in developing countries, often characterized by the absence of space agencies and limited involvement of top-level decision-makers, follows a different trajectory. The "top-down" model tends to impede the integration of space-related content into primary education, resulting in a lack of "space consciousness" among students and subsequently leading to a diminished pool of future space professionals.

This research, employing a case study methodology, delves into the Chilean context to assess the landscape of "space outreach" activities at the primary school level. This crucial phase in education solidifies beliefs, perspectives, and mindsets, making it an opportune moment to introduce innovative educational approaches. The study presents the initial outcomes of "Marteens - School for Astronauts," a non-governmental initiative pioneering space content education in Chile and South America. Through role-playing games, this initiative exposes children aged 6 to 12 to space-related concepts, harnessing their creativity and intensifying their interest in STEM subjects.

Given the novelty of this program within the Chilean and South American context, this research contributes valuable insights to the international academic community. It sheds light on applied techniques and teaching methodologies while presenting firsthand results within the local population. Furthermore, the initiative addresses broader issues by actively reducing gaps related to gender, geography, and generation. Deployed in decentralized, local territories, the program engages isolated and socio-economically vulnerable populations, simultaneously fostering a more inclusive gender perspective among parents and students. This multifaceted approach not only enriches the international academic dialogue but also offers tangible solutions to global challenges in space education.