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IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

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SPACELAB: A MOBILE LABORATORY PROPOSAL FOR SPACE SCIENCES AND ENGINEERING STIMULATION IN HONDURAS.

Abstract

Currently, underdeveloped countries have very high inequity indicators concerning primary education in STEM areas. Teaching methodologies focused on the teacher as the leading actor, based on the gradual exposure of information, are used in classrooms. This situation is the same as in Honduras; almost 30,850 public schools use non-active teaching methods. In these schools, the knowledge will evaluate through standardized tests. This type of methodology does not encourage creativity, experimentation, and innovation, causing the disengagement of students from university studies.

However, there are active teaching methodologies, where laboratory practices are used to stimulate the students' cognitive process, whose aim is that youth persons practically obtain their knowledge, strengthen their skills in solving problems by themself, and put their new competencies to the service in the community where they live. In comparison, a well-equipped laboratory with a qualified instructor for teaching science subjects (especially in astronautical science) is expensive to invest in low-income countries. For this reason, the work team proposes a pilot project for a mobile educational laboratory to teach astronautical sciences and satellite communication; in this way, several schools can use the laboratory facility and, for this reason, reduce the cost of invest each laboratory by each school.

The mobile laboratory will use active methodologies to explain fundamental physics, electrical circuits, sound, radiofrequency, and telecommunications. All these practices will teach out and inside a vehicle equipped with a ground station and other equipment that will allow workshops, demonstrations, and training activities. These activities will stimulate the soft and hard skills necessary to continue studies in the different areas of STEM at the university.

The expected result of the mobile laboratory will be to gradually stimulate a group of 30 schools, reaching 600 students in urban and rural areas in Tegucigalpa, Honduras. The mobile laboratory will give opportunities for better education to each of these schools because they will share the investment of the facilities with other students. It will allow for a greater teaching scope of satellite technology and encourage students to reach higher educational levels based on creativity, experimentation, and innovation. Furthermore, why not these students will be the professionals who contribute to the technological development of Honduras and Central America shortly.