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SPACE TECHNOLOGY BASED PROJECTS TO IMPROVE STEM/STEAM EDUCATION FROM AN
EMERGING ECONOMY PERSPECTIVE, THE CASE OF PARAGUAY.

Abstract

The purpose of this work is to implement project-based learning using Space based applications with the objective of improve STEM/STEAM education in Paraguay. Taking into consideration the PISA-D Report of December 2018 where Paraguay has the last position in the region in mathematics and science, this reality in a 7 million people country with more than 60 percent of the population under 35 years is a socio-economic time-bomb. However, if we make the necessary improvements combined with the demographic bonus will transform the productivity matrix and will give new opportunities to actual and next generations. The plan is to measure the partial and final results on the selected study groups, year to year for the next 5 years.

The problem of the country weakness in STEM/STEAM education, with more than one million students in the schools with poor results, measured in the International Program of Evaluating Students PISA-D, is receiving considerable attention from the government and public opinion, The test is not limited only to check if students can reproduce the knowledge; it also examines how far they can extrapolate what they have learned and if they are able to apply that knowledge in different environments, some of them new and unknown, basically measures the ability to work in a twenty-first century environment.

The proposed solution is to urgently improve technical education especially in STEM/STEAM, this historically have benefited all aspects of society, stimulating, inspiring and giving the adequate tools to the youngest generations and with the incorporation of Arts it complements the integral formation of the student. The Paraguayan Space Agency is developing a coordinated initiative with the Paraguayan Ministry of Education and Science and other Actors to strengthen the STEM/STEAM education and to encourage competitions regarding the use of the space science and technology like High Altitude Balloons, CanSat and later CubeSat or a combination of them using Space Technologies that are fundamental part on their subsystems.

Because of this, since last year the Paraguayan Space Agency was developing and implementing this effort, promoting more integral and an inclusive STEM/STEAM education system, to guarantees that all the young people, regardless of their socioeconomic condition, reach at least a minimum level of educational curricula, performance, well-being and commitment, which is necessary to participate in a space society. Finally, a Space technology project-based learning provides the tools to accomplish this goal and, moreover, to inspire the youngest generations.