

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

Ignition - Primary Space Education (1)

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THE IMPACT OF COMIC BOOKS AND ANIMATED CARTOONS ON SPACE EDUCATION:
PREPARATION OF THE WAY TO MAKE SPACE STEM OFFICIAL ON THE SCHOOLS AROUND
THE WORLD**Abstract**

Space Science has seen marvelous achievements in past few years from reaching an asteroid, approaching the Sun, landing on Mars, Moon and explore deep space. Such achievements of the humanity were celebrated throughout the world, although many people do not fully understand the science behind it. Explaining those achievements can be a challenge to the children because their curiosity and interest for space science and technology is sometimes bigger than the basic knowledge need to understand it well.

This paper aims to presents the processes of creation of Space Comics, Animations and video-games as examples of essential tools for space education. Furthermore discuss the possibility to evolve from there be able to apply in Space Science Technology Engineering and Math (SSTEM) programs on the schools around the world.

After a thorough study of all didactic materials of animations and comics created to date related to space, a series of Space Comics and Animations, named "Kids and Satellites" were created with the aim of increasing the engagement among students, through the active involvement of the children with the written language and sequentially juxtaposed images. Efficient, since the comic format transmits large amounts of information in a short time and Effectiveness, by processing texts and images in different areas of the brain according the Double Code Theory of Cognition.

From the research done it was noticed most of the literature introduce Space Science and Technology is by answering the fundamental questions of why and what is space and explaining the solar system. After that, several topics are approached taking into account a logical chain of content, gradual and pedagogical progression, simple language, practical connection of spatial matters with our daily life and finally the

connection between science and space technology with activities and learning at school in the mastery of STEM. The two main proof of concept will target primary schools in Angola, France and India to apply this methods in 3 different education realities and space programs.

With Comics, students not only learn faster, they learn better. Consolidated bases in this project, allow near future integration of Space science and technology in the curriculum of schools. The methods learnt at this research and it's effect in education of the student will be further studied in the future editions and can be converted into a whole book.