IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Calling Planet Earth - Space Outreach to the General Public (6)

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# DOES SPACE REALLY INSPIRE AND CHANGE PERSPECTIVES? A RANDOMIZED CONTROLLED STUDY OF SECONDARY SCHOOL STUDENTS TO ASSESS THE IMPACT OF THE 'PALE BLUE DOT' PERSPECTIVE

**Abstract**

Space and astronomy topics are widely used in school programs to inspire children. It is expected that exposure to an exciting topic such as space will not only lead to an uptake in science and other STEM subjects but also instill a sense of common humanity.

The use of space/astronomy as a tool to change perspective took centre stage soon after the early days of spaceflight. The term Overview Effect was coined by Frank White to define the "cognitive shift in awareness" and perspective reported by astronauts when they view Earth from space. Similarly, astronomer Carl Sagan popularized the concept of the 'Pale Blue Dot' which stemmed from an image of Earth, taken from around 6 billion kilometers away, in which it appears as a tiny point of light, less than a pixel in size. Sagan later wrote in his book, the image 'underscores our responsibility to deal more kindly and compassionately with one another and to preserve and cherish that pale blue dot, the only home we've ever known'.

These ideas form one of the pillars of modern communication on space exploration and have promoted the use of space/astronomy in classrooms. But rarely is the impact of such communication evaluated scientifically. Our team at the Office of Astronomy for Development, in conjunction with the South African Astronomical Observatory and Hosei University conducted a pilot Randomized Controlled Trial to test whether exposure to an astronomy/space intervention affects empathy and altruism in children (that is, whether space/astronomy induces a perspective of 'One Global Humanity', espoused by Carl Sagan and often quoted by many working in the space sector).

The data is being analysed by Harvard Intergroup Neuroscience Lab at the Department of Psychology at Harvard University. Preliminary results already indicate interesting outcomes which could have repercussions on the communication of space topics. The pilot also demonstrated that it is possible to use such rigorous methods to evaluate impact of our communication in an inexpensive manner.