A SPACE JOURNEY Astrobiology Role-Play Game for Public Engagement and Education

Caterina Boccato¹, Elena Barosso², Francesco Maio³, Ezio Pignatelli⁴, Sara Ricciardi⁵, and Stefano Sandrelli⁶

¹ISTITUTO NAZIONALE DI ASTROFISICA, OSSERVATORIO ASTRONOMICO DI PADOVA, PADOVA, Italy (caterina.boccato@inaf.it)
²Università degli studi di Padova – Dipartimento di Ingegneria Meccanica, Padova, Italy
³Università degli studi di Pisa, Pisa, Italy
⁴Secondary School Institute Polo Liceale G.B. Ferrari, Este (PD) Italy
⁵ISTITUTO NAZIONALE DI ASTROFISICA, Osservatorio di Astrofisica e scienza dello Spazio, BOLOGNA, Italy
⁶ISTITUTO NAZIONALE DI ASTROFISICA, OSSERVATORIO ASTRONOMICO DI BRERA, MILANO, Italy

The subject of the proposed talk is an astrobiology Role Play Game (RPG), Space Journey, that we have realized for public engagement and informal educational purposes.

This work is the result of an open collaboration among the academic world, represented by public engagement professionals of the National Institute for Astrophysics and two young students - a mechanical engineering and a physicist - , the school’s world, represented by a secondary schools professor of physics, and with the consultancy of the GAME Science Research Center (GAME.SCI.RE.CENTER) which is an interuniversity research center that aims at promoting, supporting and spreading the research in the field of Game Science.

The set of Space Journey is the known space, in particular our Galaxy, and the general screenplays that the Master should use are based on space exploration and on interaction with alien forms of life, from the most simple to the more complex.

As in any RPG any player interprets a character. In total, there are six characters, that means six players: a physicist, a biologist, a psychologist, an engineer, a chemist and a geologist.

They are the spaceship crew and they have to solve many problems in their journey, mainly, but not only, scientific and technological problems.

In this kind of creative approach for public engagement and for informal education, we would like to underline some aspects besides the scientific ones: the high collaborative one, the interdisciplinary and, in general, the use of “Game-based learning” (GBL) approach. GBL describes an educational and psychological approach, according to which children make sense of the world through play. Play-based learning programs are student-centered learning approaches, focused on the fully autonomous development of children’s cognitive, social, experiential and creative potential through play.

This RPG is currently under a final implementation phase but we successfully tested the beta version during our participation to the Festival of Game - PLAY (Modena, 4-7 April 2019).