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Author: Ms. Martine Joy Irog
Space Generation Advisory Council (SGAC), The Philippines

Dr. Mark Angelo Purio
Adamson University, The Philippines

PALE BLUE DOT: AN INTERDISCIPLINARY EDUCATIONAL BOARD GAME ON SPACE FOR
SUSTAINABILITY

Abstract

While the advancement of space technologies has been considered to be a help to sustainable development by carrying out space missions that focus on Earth applications, it also presents challenges to sustainability. These challenges include the environmental impact of space mission launches, the proliferation of space debris, and the carbon footprint associated with space exploration activities. The project aims to create an educational board game to promote the importance of sustainable space exploration, and to inspire young adults to pursue a related career. Games are an interdisciplinary tool that makes learning more attractive, regardless of age. The Pale Blue Dot gamifies various space concepts that offer the players missions like active debris removal, space resource utilization, reduction of GHG emissions, and carbon footprint. The players of the game assume the perspective of an outsider observing Earth, the pale blue dot, and take control of the different space missions by ‘terraforming’ Earth to mitigate impending environmental crises and save the planet from the apocalypse. Through immersive gameplay and strategic decision-making, the players of the board game are encouraged to explore innovative solutions to real-world space and environmental challenges for a deeper understanding of space exploration and sustainability. The game promotes awareness of sustainable practices in space exploration to inspire future generations to shape a more sustainable future for humanity and the planet.