

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

Author: Mr. ALON SHIKAR
DMARS - Desert Mars Analog Ramon Station, Israel, alon@shika-arch.com

DESIGN THINKING APPROACH IN SPACE EDUCATION

Abstract

In an age of accelerated technological development and rapid changes around the world, the future, near and distant, is not entirely certain. Due to this impending uncertainty, educators must now look for new and creative ways to prepare today's learners for tomorrow's world, by teaching them relevant, 21st century skills (UN).

As part of graduated masters degree at the Kibbutzim Seminary College in Israel which specializes in Education, a class called 'CourStudio' was held and led by Alon Shikar (M.Arch). 17 students participated, most of them comes from education practice. The course was based on Professor Ezri Tarazi 7D methodology of "design thinking" which will be expanded on in the article. The main task for the students - over the course of 2 semesters - was to design sleeping pods for future residents on Mars. during the course, the sleeping place became a personal space that should facilitate rejuvenation and promote wellbeing for these residents.

The students, which didn't had a background in the field of space, were divided into working groups according to their choice and skills set in the field. During the first semester the students engaged in research in the fields of engineering, human performance in space and financial factors. These findings were then distributed by each group and used as valuable tools in the design of the pods. During the second semester, the students were divided into different working groups, according to their choice and interest: product design, communication, article writing and project management. This multidisciplinary approach allowed each student to contribute to the final design using their individual strengths.

The article showcase how this non-traditional learning working method could set up values and ideas with a different approach than traditional methods of learning. Our research question is: peers to cooperate improve learning processes using design thinking methods? In this way, we will examine how learning through design thinking methods in the field of space may improve the learner's 21st century skills.

When we came to examine our research question, we evaluated the conventional way of learning according to the Ministry of Education and the development of teaching methods in recent years. In the paper, we discuss the main skills acquired when working with the design thinking method according to Professor Tzeri's 7D methodology. We then conducted a survey among students on the effects of this design thinking method on their learning. The learning process as reported by the students was analyzed, and these findings of the data culminated in a presentation.