

Innovation in Science Education

Oranim College strives to be on the cutting edge of science education. To that end, Oranim is part of an international consortium to promote innovation in science education through action research. The consortium won a prestigious three-year Erasmus + grant to advance their project.



Education in science and technology is more important today than ever before. Science and technology are essential to the growth of prosperity, sustainable development, and responding to global challenges such as climate change and clean water supply. In order to meet these challenges, institutions of higher education worldwide must invest in science education to prepare the next generation for pursuing careers in science and making educated decisions about scientific developments.

Oranim College is proud to be part of an international consortium to promote innovation in science education. Oranim joined with nine other universities and colleges from Europe, Israel, Georgia, and the Philippines for the ARTIST (Action Research to Innovate Science Teaching & Career Orientation) project. The consortium won a prestigious three-year grant from Erasmus + (a European Union program that supports international partnerships in education, training, and youth work) to advance the ARTIST project, beginning in fall 2016.

Prof. Ricardo Trumper, who is leading the project at Oranim, described the project for this newsletter. Prof. Trumper is a member of the Faculty of Natural Sciences at the University of Haifa and the former Head of the Science Education M. Ed. Program at Oranim College. He has published articles and presented at international conferences on teaching physics and astronomy, as well as inquiry based science education.

Action Research

ARTIST promotes innovation in science education through action research – a process where teachers do research to improve their own practice as educators and solve problems in their schools. Although action research has been developed throughout the world, action research in the field of science education is lacking. ARTIST aims to address this need. Oranim and other partner institutions will train and support science teachers to do research projects designed to improve their students' motivation and prepare students for careers in science.

School and Business Partners

ARTIST is not only a partnership of institutions of higher education. Each higher education institution partners with schools, educational organizations, and small enterprises in its region to advance the project. The institutions of higher education will train educators to do action research, and they will do the research and apply it in their schools and educational organizations. The small enterprises will collaborate in identifying the skills necessary for careers in science in the area.

Timetable

This year, in the first stage of the project, each partner institution of higher education focused on building networks of schools and businesses in its area. Oranim has developed partnerships with Acheret Center, which promotes physics research in secondary education in the Galilee; Technoda, the Science and Technology Education Center in Givat Olga; and the Reali School in Haifa. Through its partners, Oranim will reach Jewish and Arab schools throughout the Galilee, including primary and secondary schools, in order to involve them in this project. Oranim has also partnered with the education department of Israel Chemicals Limited to identify skills necessary for science and technology careers today in Israel.

Training Science Educators

In October 2017, the next stage of the project will begin. Experts from Europe will travel to partner universities and colleges in the consortium to train faculty members to lead workshops in action research for science teachers. Six Oranim faculty members will participate in these trainings. We look forward to the next stage in the project.

The vision is for the two Israeli partners, Oranim and the Arab College of Education in Haifa, to become national centers for action research in science education, where teachers from throughout the country will come to learn how to design and implement action research projects to improve science education in Israel.