

The man and the universe

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The universe has always aroused people's curiosity. It fascinates and at the same time scares in its vastness. Encourages us to reflect of the meaning of human life. This begs the questions: whether there is a life beyond Earth? Whether is it possible that the man is alone in such a large space? These questions still remain unanswered, and topics concerning "the cosmos" constantly evoke many emotions.

It is especially fascinating for the youngest students. Quite often, preschoolers can flawlessly name the planets according to their order of appearance in relation to the sun. They are happy to take the fun inspired by journeys into space.

Teaching through action is extremely important for the development of the child-man* (Piaget, 2006). The thinking originates primarily from the action. Therefore, students should undertake independent research activities, perform experiments and conduct observations and thus raise questions about the world, looking for meanings and solutions. Adults (a teacher, a person with a passion) are to be the support in the search for knowledge, its processing and cleaning. Its role is to ensure a proper development of environment that is conducive to research activity.

The answer to these requirements was to create in the oldest technical school in Poland (Railway Technical College, now Technical College No. 7) the astronomical observatory, which can be used by pupils of Warsaw's kindergartens and schools.

There are organized activities for children and youth in this school, as well as trainings for teachers. Younger students during such an interdisciplinary courses are, among others, the opportunity to get acquainted with the construction of the telescope, they can build their own rockets and organize their racing or create your own star constellations. Older students as a result of observations and experiments may confirm or refute the hypothesis that the universe is within each of us. The classes are enriched using applications on smartphones or iPads in the area of augmented reality that let you see the Earth from space (e.g. Quiver) or chemical elements that occur in space (e.g. Elements 4D). Students are encouraged to conduct their own observations of the sky.

Within the organized trainings for teachers, they can refer to different methods and forms of work based on the available educational resources, for example: lesson plans prepared by the Polish branch of the European Space Education Resource Office (ESERO). During such workshops, seminars and open lessons, teachers receive information and resources that can help them carry out these activities with their students.

The great support for the organizers of these meetings is cooperation with the Polish Society of Amateur Astronomers.

* Piaget, J. (2006) How a child imagines the world, Warsaw: PWN Publishing