

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

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IMPLEMENTATION FEATURES OF SCIENTIFIC AND EDUCATIONAL PROGRAMS IN THE  
FIELD OF PRIMARY ENGINEERING EDUCATION ON THE BASIS OF CHILDREN'S CAMPS

**Abstract**

At the present time, there is a global challenge of searching for new approaches to attracting young people to the field of science, technology, engineering and exact sciences, and also to raising the level of their training.

As experience has shown, one of the most interesting and promising approaches to solution of the articulated challenge is introduction of components of primary engineering education and professional oriented work into programs implemented on the basis of children's camps of both country and urban (day) formats.

Since 2016, the employees of Bauman Moscow State Technical University have implemented a large number of scientific and educational programs of various orientations (mainly aerospace), duration and complexity level, including for groups with an international composition of participants, on the basis of various children's camps. In the process of their implementation, they revealed a number of peculiarities of organizing and conducting classes in children's camps not peculiar of school or university teaching groups. The following features can be identified:

- uneven-aged composition of children in one group (from 8 to 18 years of age);
- significant differences in the basic training of students in one group;
- one-group education of schoolchildren from different countries with different level of language skills and learning culture;
- difficulties with ensuring safety in certain technological processes;
- need for scientific and technical mentoring, on the one hand, and formation of independence of schoolchildren in solving engineering tasks, on the other hand;
- individual differences of children in terms of involvement level into engineering activities.

The introduced paper considers the measures taken by the university staff and proposed solutions, which recognize the above-mentioned features and have increased the efficiency of the programs implementation, as well as plans for their development.

These programs have already shown the result, many children have taken interest in technology and exact sciences, continued implementing projects started in the camp in the framework of technical creativity and, as a result, entered technical universities.