

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

Ignition - Primary Space Education (1)

Author: Mr. Yusuke Koga
JAXA, Japan, koga.yuusuke@jaxa.jp

SPACE EDUCATION FOR TEACHERS' PROFESSIONAL LEARNING: WHAT BRINGS TEACHERS
FROM PARTICIPATING TO IMPLEMENTING?

Abstract

The Japan Aerospace Exploration Agency Space Education Center (hereafter called “the Center”) offers a unique and creative way of nurturing children’s curiosity, exploration, and craftsmanship by using the idea of universe. The center named it “Space education,” and its primary goal is neither to educate children to become specialists for space development nor to promote science education. But it intends to educate children, so that they can live well in our “unpredictable” society in the future, where innovation of information technology and globalization progress. The Center proposes that space education can be an effective tool to achieve this goal as society. It has been trying to work with teachers, so that teachers can independently practice space education in their daily classroom teaching. Given that teachers play important roles in education, the Center has been conducting the professional learning programs for teachers (hereafter called “the program”) every year since FY2005. The program covers the philosophy of space education and some case examples of how teachers can implement space education in classes. During the program, teachers gain hands-on experience of how they can navigate learners’ curiosity and thinking by using space-related concepts, such as planet and rockets, and teaching materials that the Center provides. In order to evaluate the effectiveness of space education programs, the Center has been conducting the survey research before and after the programs. Some of the general findings that are consistent across years are that female teachers and teachers who consider themselves better at liberal arts than science tend to find space education more valuable for their teaching, compared to male teachers and those who see themselves better at science other liberal arts. In addition, the Center has started conducting the follow-up survey 6 months after the completion of the space education program in order to identify the factors that will increase the likelihood of the trained teachers implementing space education in their classrooms. The hypotheses, such as “teachers who spent more time on learning how to plan a lesson with space education philosophy and to use teaching materials during the training program are more likely to implement space education within 6 months after the program,” will be examined. The result of the follow-up survey and its implication to teaching and learning will be discussed.