

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Hands-on Space Education and Outreach (8)

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EDUCATE YOUNG SPACE GENERATION WITH HANDS-ON PRACTICE

Abstract

In order to meet the needs of domestic and international space talents, Shenzhou Institute (SZI) of China Academy of Space Technology (CAST) has carried out various education and trainings, including induction training, staff training, international training and postgraduate education. A proper combination of classroom lecturing and hands-on practice is regarded as an effective method to increase theoretical knowledge and practical ability as a whole. Especially for young space learners, hands-on practice is conducive for them to digest what they have learned from teachers and books. Backed up by the powerful technical background and rich experiences of CAST engineers, hands-on practice as an effective approach has been successfully applied in many important education and training activities, which has benefited thousands of trainees engaged in training projects carried out by SZI. Some practices available include product manufacturing on-site visiting, participation in testing of spacecraft electrical prototype and operation practice on spacecraft simulator, etc. One of the most powerful hands-on education resources in SZI is concurrent digital design platform, which has been established for students and trainees to perform virtual satellite design. Under the guidance of teachers, students or trainees are grouped into various engineering and management teams for subsystem design on the platform. With all the team efforts, a virtual satellite design will be finally accomplished. Theory plus hands-on method is effective to inspire trainees' interests in space, broaden knowledge on spacecraft and improve ability to operate their own satellites, which can help them grow up rapidly and devote themselves to the aerospace industry. Some of them have become chief designers of spacecraft and senior managers of space mission. This paper will generally introduce education and training activities of SZI Institute, in which both theoretical and practical pedagogical methods will be explained with the emphasis on the approach of hands-on practice training. This digital design platform and its application will also be introduced in the paper. Experiences drawn from education and training activities can be concluded as effective approach of theoretical and hands-on practice by full use of teaching resources covering experienced teachers and advanced teaching facilities.