

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

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INSPIRING THE NEXT GENERATION OF SPACE ENTHUSIASTS: A NOVEL APPROACH TO  
SPACE EDUCATION THROUGH THE SPACE SUMMER SCHOOL PROGRAM

**Abstract**

The Space Education Research Lab (SERL) at the Institute of Space Technology (IST), Islamabad, Pakistan, is part of the National Center of GIS Space Applications. SERL aims to develop specialized human resources in the field of space science, technology, and applications from the grassroots level. IST has been involved in space education and outreach for the past 18 years, extending its footprint among thousands of students across Pakistan. To continue its efforts, IST introduced the Space Summer School (SSS), a week-long program in 2017 that provides students in grades 6-12 a unique and innovative educational experience. The SSS aims to provide a comprehensive picture of space science and technology, and the program was designed with seven exploration tracks: Earth, Atmosphere, Aviation, Rocketry, Satellite Technology, Astronomy Astrophysics, and Space Applications. The program features interactive lectures, workshops, training sessions, hands-on activities, lab visits, and webinars by subject matter experts from around the world. It also includes a career counseling session to guide students about careers in the field of space science, technology, and its applications. At the end of the Space Summer School, students are tested in the Abdus Salam Space Contest to evaluate their understanding of the concepts taught during the program. The contest allows students to showcase their knowledge and understanding of space science and technology. Since its inception, SSS has attracted over a thousand students from all over Pakistan, emphasizing the importance of collaboration and teamwork. The program has been successful in achieving its goals, with students reporting increased interest and engagement in space science and technology. This paper presents a coherent story of the pedagogical theories behind the SSS and how they are applied in the program. It highlights the key features and outcomes of the program, including lessons learned and recommendations for future iterations. Furthermore, it provides a critical assessment of the SSS's impact on participants, including its influence on their career choices and professional development. The SSS offers a new and innovative approach to space education, providing students with a comprehensive and hands-on learning experience. It is an important step in inspiring and engaging the next generation of space enthusiasts, providing them with the knowledge, skills, and guidance they need to pursue a career in space science and technology. The success of the SSS highlights the importance of space education and outreach programs and serves as a model for similar programs around the world.