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O38 - What Makes an Online Hands-on Astronomy Camp Sustainable Beyond the COVID-19 Pandemic? A Six-Year Case Study of the NAS Online Camp

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The COVID-19 pandemic accelerated the adoption of online learning, leading many astronomy outreach programs to transition from face-to-face to virtual formats. While most online camps were introduced as temporary solutions, few have continued successfully after the pandemic. This study investigates the factors that have enabled the NAS Online Camp, organized by the National Astronomical Research Institute of Thailand (NARIT), to remain sustainable and continue growing over six consecutive years.

The study analyzes program implementation, participation records, and participant feedback collected between 2021 and 2026. During this period, the number of participants increased from approximately 500 to 2,259 students nationwide, while the number of participating schools expanded from 20 to 117. These results demonstrate the program's increasing reach and adoption across diverse educational settings. The findings suggest that long-term sustainability is driven not only by improved accessibility through online delivery, but also by carefully designed interactive hands-on activities, annual thematic renewal, and opportunities for learners to apply their knowledge through challenges such as Moon Phase Challenge and Star Wars. The program also successfully engages diverse audiences, including home-school families and returning participants, while providing teachers with practical, low-cost activities that can be readily adapted for classroom use.

This case study suggests that the long-term success of an online astronomy camp depends on maintaining meaningful interaction, continuously refreshing learning experiences, and supporting authentic hands-on engagement rather than simply delivering content online. These findings provide practical insights for educators seeking to develop sustainable online STEM outreach programs beyond emergency remote teaching.

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