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From Misconception to Acquisition: Using Mobile Science Outreach to Address Common Astronomy Misconception in Underserved Philippine Regions

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Astronomy has long been a cornerstone of space science, igniting one's curiosity and critical thinking through explorations to unlock the mysteries of the universe. With numerous concepts and understanding in the space domain emerging, several astronomy misconceptions, such as definition of constellations, concept of black holes, nature in gravity in space, persists among mid-learners, particularly in underserved regions where access to quality science education and visual learning tools is limited. This study aims to address these common misconceptions through a mobile science outreach initiative, SpaceTime Events and Exhibits, implemented in underserved communities in the Philippines.

The outreach will integrate a transportable digital dome and a guided astronomer talk within a five-station science learning program. These informal educational tools are designed to provide immersive, experiential learning that complements classroom instruction. To assess the effectiveness of the intervention, students will complete pre- and post-event diagnostic assessments focused on specific astronomy misconceptions. The anticipated findings are informed by prior studies in informal science education, suggesting that visual and interactive learning experiences lead to greater conceptual change than traditional methods alone.

This research contributes to broader global education goals by presenting a scalable model for improving astronomy education in low-resource settings. Insights gained from the study aim to inform strategies for integrating informal learning into national science education frameworks, particularly in developing countries across the Global South, where equity gaps in STEM remain a pressing concern.

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