

MARTIAN TO BE: A MULTI-PLATFORM SCIENCE COMMUNICATION INITIATIVE FOR SPACE EDUCATION AND INTERDISCIPLINARY RESEARCH AWARENESS

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The exponential growth of space science research has created significant communication barriers between scientific communities and the general public, particularly in underrepresented regions, such as South Asia, where access to specialised space education remains limited. This study presents "Martian To Be," a comprehensive digital science communication initiative which was initiated on 20th June 2023 with the launch of a dedicated Facebook page, later expanded into a WordPress-based website (martiantobe.com) and integrated across seven additional platforms, including YouTube, LinkedIn, Instagram, TikTok, Pinterest, and X. Developed by a graduate student with an academic background in bioinformatics and an active research focus on space medicine, the project addresses the critical need for authentic, research informed communication in digital spaces. The methodology combined evidence-based communication strategies with systematic data collection and SPSS supported analysis of multi-platform engagement between June 2023 and April 2025. Facebook insights provided metrics across three phases (Launch, Growth, and Maturation) covering follower growth (–1.2% to 50.4%), interactions (0 – 163), views (0 – 828), and link clicks (6 – 23), while YouTube Analytics captured performance of 43 videos across topics such as space medicine, astrobiology, radiation shielding, Mars colonization, robotics, and UFO fact checking. Quantitative analysis included descriptive statistics, ANOVA, correlation testing, and cross tabulations, while audience demographics were examined by age and geographic distribution with emphasis on South Asia (Sri Lanka, Pakistan, and India). Results showed high engagement variability but consistent thematic interest, with YouTube videos achieving 89 – 99% retention for science topics, Facebook link-based content outperforming other formats, and South Asian audiences showing significant but developing engagement. Strong positive correlations were found between follower growth and link clicks ($r = 0.989$, $p < 0.001$), while non-follower engagement averaged 51.5%, indicating successful external reach. The initiative effectively counters misinformation and demonstrates how active researchers can leverage digital platforms for scalable, evidence driven science education.

Keywords: Astrobiology, Digital education, Science communication, Space medicine, Technology-enhanced learning