

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Calling Planet Earth - Space Outreach to the General Public (6)

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SPACE SCIENCE OUTREACH - ARE WE DECREASING PUBLIC UNDERSTANDING?

Abstract

What evidence is there that any public communication of space science is effective? In 2001, Sless and Shrensky pointed out that the evidence of the effectiveness of science communication in general is about as "... strong as the evidence linking rainmaking ceremonies to the occurrence of rain"[1]. In 2017, very little has changed in effectively measuring the success of intended outcomes of informal science education and outreach activities in space science, or in any other area of science. There still have been few attempts to formally measure the success of public engagement activities — such as public talks, science cafes, interactive events and festivals — against clear indicators of success.

We report on a pilot study of four education and outreach activities held at a large museum in a major Australian capital city. Pre and post questionnaires containing validated Likert-scale items were used to measure participants' trust in science and scientists, their understanding of scientific practice, and their opinions on its relevance and value to society. A total of 46 pre and post surveys were matched. The results show that after the event, participants demonstrated more positive attitudes and an increase in trust, but a decrease in understanding of scientific practice.

Although based on a small sample, the results of this pilot study align with the findings of Brossard et al.[2] and Cronje et al.[3]. These results suggest that the way we are communicating science is misleading the public's perception of science as absolute, instead of the tentative and evolving endeavour that it actually is. We argue that we need to change the way we communicate space science by focussing more on revealing how science is practiced and being more open about the way conclusions are reached, in order to increase the public's understanding of scientific practice.

References: [1] D. Sless, and R. Shrensky (2001) *Science Communication in Theory and Practice*, 97–105. [2] Brossard, D., Lewenstein, B., and Bonney, R. (2005) *International Journal of Science Education*, 27, 1099-1121. [3] Cronje, R., Rohlinger, S., Crall, A. and Newman, G. (2011) *Applied Environmental Education Communication*, 10, 135-145.