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Shaping Minds, Transforming Societies: The Role of Science Communication in Fostering Critical Thinking for Gender Inclusion

Magdalini Laina , Prof. Dr Eirini Gkouskou

Hellenic Open University, Greece

Abstract

Science communication is increasingly recognized not only as a means of disseminating scientific knowledge but also as an educational and cultural practice that shapes how people understand, question, and engage with science and its role in society. Despite this evolving perspective, limited attention has been given to the role of science communication in fostering critical thinking as a means of challenging gender stereotypes and promoting gender inclusion. This study explores the role of science communication as an educational mechanism for fostering critical thinking and promoting gender inclusion. Drawing on a small-scale qualitative study conducted across science museums and science centres, the study employs methodological triangulation through non-participant observation, focus group interviews, and open-ended questionnaires to examine how science communication practices encourage critical reflection on gender representations in science. Using science museums as an empirical context, the study explores the educational and societal role of science communication. The findings suggest that science communication can create opportunities for critical reflection on gendered representations of science, encouraging more inclusive perspectives on scientific knowledge and participation. By positioning critical thinking as the conceptual link between science communication and gender inclusion, this study contributes to a broader understanding of science communication as an educational and cultural practice with the potential to foster more inclusive understandings of science and society. In doing so, it highlights the contribution of science communication not only to public engagement with science but also to fostering more reflective and equitable engagement with science.

Keywords: Science Communication; Critical Thinking; Gender Inclusion; Science Museums; Public Engagement with Science