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SCIENCE COMMUNICATION IN HIGHER EDUCATION:
GLOBAL PERSPECTIVES ON THE TEACHING
OF SCIENCE COMMUNICATION

Science communication in higher education: global perspectives on the teaching of science communication

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Abstract

This special issue focuses on the global landscape of teaching science communication in higher education. Following an open call, we selected seven papers with topics including the geographical distribution of science communication programmes, indicators of quality, programme analysis, self-reporting tools, interdisciplinarity, sustainability, and competencies. Collectively, these contributions highlight how the field has grown and increased in complexity, and highlights challenges faced by educators and the significance of addressing them within local and global contexts.

Keywords

Professionalism, professional development and teaching in science communication; Science communication degree programmes; Science communication teaching

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Introduction

As science communication grows as a field of research and practice, it is becoming increasingly prominent as an academic discipline taught in universities around the world. Science communication encompasses a broad field of research and practice [Lewenstein, 2022] and so defining its teaching can overlap with training [Baram-Tsabari & Lewenstein, 2017; Lewenstein & Baram-Tsabari, 2022], informal science education [Land-Zandstra, de Bakker & Jensen, 2020], citizen science [Rüfenacht et al., 2021; Roche et al., 2023], and public engagement [Silva & Bultitude, 2009]. Many of the challenges facing science communication educators are specific to local contexts but the ways in which such barriers and obstacles are addressed and overcome can be equally relevant to educators working in other regions.

Similar to other parts of the world [Broks et al., 2020; Massarani & de Oliveira, 2022], in Europe science communication is a field in transition [Davies et al., 2021]. Between 2018 and 2023, the European Commission made an unprecedented €10 million investment in science communication research (through its research

funding framework programme, Horizon 2020), to take stock and re-examine the role of science communication including examining "the teaching of science communication within scientific disciplines and as a dedicated academic discipline" [European Commission, 2020, p. 57]. Subsequently, eight[1] multiyear, international science communication research projects were funded [Roche et al., 2021].

GlobalSCAPE was one of the final projects funded and was tasked with taking stock of how science is communicated in a global context because "understanding the challenges and opportunities presented to science communication professionals working around the world is key to building trust between science and society, a critical European Union objective" [European Commission, 2022, p. 6]. In choosing to fund this type of work, the European Commission has highlighted the importance of gathering global voices on science communication in order to understand the practices, strategies, and the ramifications of how science communication is taught in a rapidly-changing global landscape.

About this Special Issue

Building on previous JCOM special issues featuring the work of these projects (see Kupper, Moreno-Castro and Fornetti [2021] and Achiam, Kupper and Roche [2022]), in October 2022 an open call was issued by JCOM inviting proposals for papers to be included in a special issue on teaching science communication in higher education. Submissions were sought from researchers, practitioners, and educators around the world involved in teaching science communication in institutions of higher education. Given that the vast majority of the submissions were in the format of practice insights (case studies), priority was given to research articles, critical commentaries, and historical overviews. By the end of the open call for abstracts, 64 proposals had been submitted. Seven of those papers completed the peer-review process and make up this special issue. Some of the papers explore the global landscape of science communication teaching in higher education by revealing disparities, opportunities, and challenges in different regions. Another recurring theme is the exploration of innovative pedagogical approaches with different tools and perspectives tackling quality assessment, interdisciplinarity, and sustainability. A final emerging theme was that of career relevance and how science communication graduates perceive the education they receive.

Luisa Massarani and colleagues present a map of the geographical distribution of 122 science communication teaching programmes from 31 countries around the globe. As well as showing the concentration of these programmes in the US and Europe, the authors reflect on the reasons for the disparities in opportunities for studying science communication in other parts of the world [Massarani et al., 2023].

Ebe Pilt and Marju Himma-Kadakas test quality indicators that emerged from the Horizon 2020 project, QUEST. They discuss how such a model of assessing quality in science communication shows good potential as a supportive tool for teaching in higher education, especially within the contexts of communication, dissemination, and mediatisation [Pilt & Himma-Kadakas, 2023].

[1] The eight projects were: RETHINK, QUEST, CONCISE, NEWSERA, TRESCA, ParCos, ENJOI, and GlobalSCAPE.

Nuria Saladie, Carolina Llorente, and Gema Revuelta write about their analysis of the higher education science communication programmes in Spain and how the knowledge, skills, and competences gained in those programmes are perceived by graduates when it comes to finding a job [Saladie, Llorente & Revuelta, 2023].

Alessandro Strobbe and colleagues describe the development of a tool to support the self-reporting of science communication skills among medical students in Peru. Their findings point to the need for more science communication teaching in higher education in Peru, particularly for those working in healthcare systems, leading the authors to question "if the teaching of science communication in universities aligns with the needs of the medical community" [Strobbe, Chirinos-Arias, Lucero & Rojas, 2023, p. 5].

Brian Trench's essay explores the role of interdisciplinarity within the teaching of science communication in higher education. The essay is presented in terms of the "Premise, Promise, Problems and Pleasures" of interdisciplinarity in science communication education as well as presenting a "Proposition" as to how interdisciplinarity can be given greater prominence in higher education science communication programmes [Trench, 2023, p. 2].

While Sabrina Vitting-Seerup and Marianne Achiam focus on a single example of integrating sustainability into a higher education science communication course using a reflexive iterative approach, their rationale for placing sustainability-related issues at the core of science communication teaching is something that will resonate with educators and activists around the world tackling the climate crisis [Vitting-Seerup & Achiam, 2023].

Matthew Wood's essay delves into the role of interdisciplinary competencies and how an expanded pedagogy on such competencies in the teaching of science communication in university courses could better equip graduates to face complex societal challenges [Wood, 2023].

Conclusion

This special issue gathers just a fraction of the work that is happening in this field around the world. While the European Commission's 'Science with and for Society' funding stream that supported GlobalSCAPE and the other eight science communication research projects has been discontinued, other European initiatives will continue to support the development of science communication. In Europe, these include the new National Centre of Expertise on Science & Society in the Netherlands [Verkade & Smeets, 2023] and the EU Science Communication Competence Centre, tasked by the European Commission with "establishing a centre of knowledge, expertise, advice, resources, and tools on science communication" [European Commission, 2021, p. 128]. Globally, a best practice example of collaboration in the field is the PCST (the Global Network for the Public Communication of Science and Technology) Teaching Forum[2] which is building a community of practice in science communication teaching in higher education. We hope this special issue will encourage others to share their experiences of teaching science communication so that we can continue to learn from each other.

[2] https://www.pcst.network/teaching-forum.

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