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REVIEW

Public engagement with science: a practical guide

Reviewed Book

Potochnik, A. and Jacquart, M. (2024).
Public Engagement with Science.
Cambridge University Press

Reviewed by

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Abstract

Public engagement with science has gained institutional prominence while remaining conceptually fragmented and difficult to operationalise. This review evaluates *Public Engagement with Science* by Angela Potochnik and Melissa Jacquart as a field-level intervention addressing this condition. The book offers an interdisciplinary, pedagogically grounded framework for understanding, designing, and institutionalising public engagement. More steps regarding its theorization can be made, but the plentitude of strengths lies in conceptual integration and practical design.

Keywords

Science communication teaching; Science communication: theory and models; Bridging research, practice and teaching

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1 ▪ Field problem and positioning

Public engagement (PE) has become a prominent expectation across universities, funding agencies, and professional societies. Researchers are increasingly encouraged — or required — to engage beyond academic audiences as part of their professional roles and funding obligations [Banse et al., 2026; Biermann et al., 2025]. At the same time, science and scientific information have become deeply embedded in public discourse, policy debates, and everyday decision-making, increasing the societal stakes of effective PE [Heij et al., 2024; Safford & Whitmore, 2024]. Within science communication scholarship, this has coincided with a growing emphasis on dialogue, inclusion, and participation, and a shift away from dominantly unidirectional communication models [Giardullo et al., 2023; Smeets et al., 2025].

Despite this convergence of institutional demand and normative aspiration, PE remains difficult to enact in practice. Research relevant to PE is dispersed across disciplines, shaped by divergent theoretical traditions, and unevenly connected to academic and professional realities [Kessler et al., 2022; Ogbukagu et al., 2026]. As Potochnik and Jacquart observe, this knowledge base is "distributed across disciplines and influenced by different research traditions", creating barriers for researchers and practitioners seeking to access and operationalise existing expertise. PE has thus gained visibility without acquiring a shared conceptual or practical architecture.

Public Engagement with Science positions itself as a response to this condition. Rather than offering another set of communication techniques or a discipline-specific framework, the book presents an integrative foundation for understanding, designing, and institutionalising PE. Its central claim is that PE is a family of practices aimed at improving how science and publics relate along multiple dimensions: understanding, identity, trust, access, and interest. In doing so, the book directly addresses concerns regarding fragmentation, the research-practice divide, and the need for frameworks that connect theory, pedagogy, and institutional context.

2 ▪ Conceptual grounding and interdisciplinary foundations

Potochnik and Jacquart [2025] draw deliberately on a wide range of research traditions, including communication research, science education, informal learning, museum studies, science and technology studies, social and community psychology, political science, and philosophy of science. This breadth is presented not as eclecticism but as a response to the nature of PE itself. Once PE is understood as involving identity, trust, participation, and belonging, no single discipline can provide an adequate foundation.

The inclusion of political science is particularly salient. PE increasingly unfolds in contexts where scientific authority is contested and reframed through partisan cues and elite discourse. Research on climate change, for example, demonstrates how political leadership can significantly shape public beliefs about scientific issues [Xia & Du, 2025]. By situating PE within this political environment, the authors acknowledge that science no longer operates as a neutral actor in public life.

Two traditions nevertheless play a structuring role. The first is philosophy of science, which frames science as a set of epistemic and social practices embedded in institutions and communities rather than as a body of facts. This supports a relational understanding of PE:

what is at stake is not whether publics know more science, but how science and publics interact and establish legitimacy. The second is the scholarship of teaching and learning (SoTL), from which the authors derive their public-centered model of PE. Drawing on the shift from teacher-centered to student-centered pedagogy, the book develops a clear analogue to the move away from deficit models in science communication. Learning is understood as meaning-making in relation to prior beliefs, values, and experiences, and PE is designed on the same premise.

This pedagogical grounding is one of the book's most distinctive contributions. Whereas critiques of the deficit model often remain abstract, Potochnik and Jacquart anchor their alternative in grounded educational research. Their six strategies for public-centered engagement — rethinking power structures, valuing the public, engaging belief-value systems, recognising stages of learning, incorporating metacognition, and using social connections — translate pedagogical insights into an operational design framework. In doing so, it contributes to a key need in the field: a genuinely translational framework linking theory to practice.

3 ▪ Structure and internal logic

Section 1 defines PE as "*someone attempting to change something about the relationships between science and the public for the better*". This definition foregrounds PE as normative and relational, extending dialogical approaches by making "relationship" rather than "message" the central unit of analysis. The refinement of PE aims towards five dimensions — understanding, identity, trust, access, and interest — and provides a clear analytical vocabulary for aligning activities with intended outcomes. The emphasis on trust is especially valuable, offering a concrete anchor for both design and evaluation.

At the same time, this definition introduces a productive tension. By framing PE as intervention into how particular "*segments of the public*" relate to science, the authors adopt a pragmatic orientation that supports design and evaluation, but that risks reproducing an audience-centered logic reminiscent of deficit thinking. From a political-philosophical perspective, PE might instead be understood as action within a shared public domain in which science appears, is debated, and acquires legitimacy. While segmentation is practically necessary, the public sphere itself remains less fully theorised.

Sections 2 and 3 map the fragmented disciplinary and institutional resources relevant to PE. Section 2 demonstrates how different traditions contribute distinct insights, with a particularly strong integration of education research that situates PE within epistemic resources already present in universities. Section 3 turns to institutional contexts and collaboration, foregrounding grants offices, DEI units, alumni relations, professional societies, and broader-impacts requirements. This section is among the most practically valuable, emphasising institutional alignment and collaboration rather than individual initiative.

Section 4 provides the conceptual engine of the work. Building on earlier PE aims, the authors introduce a goal-directed design framework adapted from integrated course design. The emphasis on alignment between aims, design choices, and evaluation delivers a coherent and teachable model for PE practice. While the framework could be enriched by deeper engagement with political theory — such as work on Action and Speaking [Arendt, 1958] — its pedagogical foundation is convincing and productive.

Section 5 offers a taxonomy of PE formats, including science communication, formal and informal education, public participation in research, and science policy. Rather than treating these as competing models, the authors show how each supports distinct goals and publics, reinforcing the book's integrative orientation.

4 ▪ Practical utility and cultural awareness

Although theoretically ambitious, the book is designed for use. The goal-directed design framework, situational-analysis questions, and appendix on planning and evaluation provide concrete tools for researchers and engagement professionals. The institutional guidance in Section 3 further grounds the book in academic reality. The book also demonstrates strong cultural awareness. Its engagement with culturally relevant pedagogy, equity, and inclusion recognizes publics as socially situated communities rather than generic audiences. This strengthens the applicability of the public-centered model, particularly for work with underserved or marginalized groups.

5 ▪ Contribution and limits

Public Engagement with Science makes a highly relevant contribution by offering a shared, interdisciplinary framework connecting theory, pedagogy, institutional context, and practice. It contributes to the need for a comprehensive model and language that exceed the limits of the fragmented disciplines in PE. Its principal limitation lies in its treatment of "the public". While publics are carefully segmented for design purposes, the public domain itself — as a political and epistemic space in which science gains visibility and legitimacy — is less fully theorised. PE is framed primarily as interaction with groups rather than as action in a shared public sphere. This does not undermine the book's practical value, but it marks a boundary where further theoretical development is needed. Overall, the book offers a coherent, designable, and institutionally grounded framework for a field that has long struggled to connect its parts. For scholars, practitioners, and institutions seeking to move PE from isolated activities toward a coherent professional and scholarly domain, this work will be a central reference point.

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