

Review of *Science Communication: An Introduction*

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Van Dam, F., de Bakker, L., Dijkstra, A., & Jensen, E. (Eds.) (2020). *Science Communication: An Introduction*. World Scientific, pp. 276, £25, ISBN: 978-981-122-835-3

When this book came into my hands in March 2020, on the eve of the UK's COVID-19 crisis, I had no idea of the extra relevance it would suddenly acquire. I initially expected the book to be about the primary communication of scientific research in universities and learned journals. However, it is about the secondary communication of science, in which the ideas and findings of scientists are communicated to different publics for a range of informative and social ends. Thus it is aimed primarily at those working in the field of science communication but is of interest to a wider public as well and particularly teachers of academic writing.

The two introductory chapters set the scene of the book, in terms of the current democratisation of information via the internet, and the models that have evolved to support different views of science. These range from the positivist view of science as an objective process to current approaches which also recognise science as a contextualised enterprise rooted in social and global contexts. This view includes the recognition of different social groups as stakeholders in the outcomes of scientific research and technological development. These chapters make an important distinction between the *transmission* approach, in which the public is simply informed and the *transaction* approach, in which there is dialogue between the communicators and the public.

Chapter 3 examines the purposes of communicating science, from the informative role of museums and exhibitions to campaigns aimed at implementing government policies. It also provides an analysis of the strategies and theories underpinning the different types of science communication. Chapter 4 further develops the notion of the dialogic approach to science communication, even to involvement of stakeholders in deciding what issues should be addressed by scientific research. The chapter also discusses the nature of dialogue and the conditions for creating space in which it can exist. The authors make the powerful point that:

Society now speaks back to science. Moreover, in the past decades it has witnessed a myriad of ways in which non-scientific actors such as governments, companies, societal organizations and citizens, contributed actively to the production of knowledge. In other words, the boundaries between science, government, industry and citizens have been blurred and are increasingly crossed back and forth between a variety of actors. (p. 71)

This assertion was apposite during assurances that governments were 'following the science' while we as citizens were trying to deal with the effects of their interpretations on our lives. As the situation developed, it was noticeable that, in these briefings, citizens were allowed to ask questions of the politicians directly, rather than through the traditional intermediaries of journalists.

Chapter 5 deals with the role and processes of informal science education provided by institutions such as museums and animal parks and by events such as science festivals. This includes the concept of 'co-creative citizen science projects' in which 'citizens are involved in

all phases of the scientific process, from coming up with the research questions and developing the research method, to collecting, analyzing and interpreting the data' (p.110). The concept of citizen science as a key forward development in science and its communication is a key theme in the book, which is returned to in many contexts. Illustrative boxes provide case studies and examples.

Chapter 6, which provides a useful critique of the roles and practices of Science Journalism, was painfully relevant to read as the arguments around the approaches to the coronavirus epidemic raged alongside the Black Lives Matter protests. The authors identify the different roles of the press in acting alternately as cheerleaders for scientific developments and technological innovations and as watchdogs warning of the potential risks. The role of the press as an agenda setter is also examined, although the political motivations of some powerful media outlets are not really covered. This chapter also deals with the topic of fake news and the vexed notion of *balance*, in which the views of a layperson or politician with no scientific training and often with some political or religious agenda are included to provide a fictional impression that these views are somehow equally epistemologically valid. Recently, I produced some EAP materials in which I traced the representation of a scientific finding in the communication process, working back from the tabloid headlines that screamed: 'Scientists prove big bang theory' back through the department's press release that their findings support the big bang theory to the original researcher's modest claim that his findings suggested there was less of a particular isotope in certain types of stars than had been previously thought. The analysis and concepts in this chapter would be very helpful in devising this type of pedagogical exercise. The diagram of 'the knowledge filter' (Figure 2.2, p. 34) is particularly instructive and would be useful to share with students in all contexts of scientific study.

The remainder of the chapters reflect the key contexts for science communication – Risk Communication, Health Communication and Environmental Communication – all of which are self-evidently relevant. This is very much a book of its time. The final chapter contains practical advice for conducting research into science communication. This book would be a useful addition to the bookshelves of EAP and translation departments. In our role as gatekeepers who select science texts for classroom use and teach STEM students how to communicate their subject knowledge, we need to understand the mechanisms and processes of science communication. Particularly, the focus on dialogic and co-creative approaches to knowledge communication are trends that belong in the current understanding of learning and the academic enterprise. Chapter 2 could be a basis for discussion in an academic writing course for research students. Enhancing their own understanding of the social role of science might foster a more 'woke' understanding of the significance of their research approach. This would avoid the slavish regurgitation of what is said about research approaches in the standard research textbooks seen in the methodology sections of many students' theses.

The book's only major omission is the lack of mention of the elephant in the room that is the dominance of English as the lingua franca of academic communication and the effect this has on what is researched and considered important. I note this book is the first in a proposed series and the editors call for proposals for further books. I encourage researchers with the relevant knowledge to step up and take this challenge.