

Chapter 11

Scientific communication

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Aim

The objective of this chapter is to provide students with manuscript writing, editing and submitting skills and an understanding of the publishing space, including the traditional platforms of biomedical journals but also the new spaces created by Open Research.

Summary

This original, interdisciplinary chapter on scientific publishing will deal with three major topics that'll allow doctoral students in health sciences to improve their overall publishing skills and hence make it possible for them to successfully promote their research and further scientific cooperation within the European space but also within the international research community when starting their professional careers. On the one hand, it'll focus on writing skills per se, including the explanation of the IMRAD format as defined by the APA, its application to typical study types and standards concerning scientific content, language use and cohesion, including typical mistakes to be avoided. Secondly, this chapter shall provide training in publication skills in the broader sense, including a thorough overview of biomedical and medical journals, how to find the right journal, applying for publication, the ethical and legal standards of publishing, the peer-review process, interacting with editors and reviewers, tools for the dissemination of published work, online libraries and other publication platforms. Finally, a third subtopic will be dedicated to new trends in scientific publishing and the possibilities and horizons they've opened up in terms of transnational digital cooperation, including open access and open research, crowdsourcing and initiatives such as Creative Commons, Open Research Europe and the societal, legal and ethical repercussions they entail.

Methods

In addition to descriptive e-learning material enriched with videos, links to publications, a normative quiz to test students' acquired knowledge and understanding, and a discussion board, the chapter will adopt an interactive problem-based learning approach, in that students will have to produce articles, spot mistakes, and provide feedback on each other's productions and solve issues linked to the publishing process. This shall equally lead to the creation of a shared database/library that'll allow students to contribute to an ever-growing curriculum and learn from each other in a student-led learning perspective.

Learning Outcomes

Students will be able to

1. Understand and use APA standards for publication when creating a manuscript
2. Apply APA standards to study types
3. Understand and apply ethical and legal standards linked to publication (HORIZON and OPEN RESEARCH EUROPE, international standards)

4. Identify and use publication platforms
5. Disseminate and communicate one's research results
6. Understand new initiatives in scientific publishing
7. Understand the legal, ethical and societal repercussions of new trends in scientific publication (changes in copyright and ownership, participative science, data management)
8. Participate in a collaborative research publication project - applying new trends of publication

Complementarity to CONSCIOUS I Materials

The issue has not been covered by the CONSCIOUS I project.

Content

- 1 Introduction
- 2 How to write a standardized scientific article?
 - 2.1 Introduction
 - 2.2 What is APA?
 - 2.3 Journal Article Reporting Standards (JARS)
 - 2.3.1 JARS-Quant: reporting quantitative research
 - 2.3.2 Adapting the quantitative data publication to your study design/ methodology
 - 2.3.3 JARS-Qual: reporting qualitative research
 - 2.3.4 JARS-Mixed: Reporting mixed research data
 - 2.4 Paper format
 - 2.3.1 The title page
 - 2.3.2 Font
 - 2.3.3 Line Spacing
 - 2.3.4 Paragraph alignment and indentation
 - 2.3.5 Headings
 - 2.5 Writing style and grammar
 - 2.4.1 Style
 - 2.4.2 Grammar
 - 2.6 Tables and Figures
 - 2.5.1 Tables
 - 2.5.2 Figures
 - 2.7 Credits and references
 - 2.6.1 Basic principles
 - 2.6.2 Elements of reference lists
 - 2.8 Open Science
 - 2.9 Submitting your article: writing a cover letter
 - 2.10 Writing a letter to the editor

- 3 How to communicate science to the general public?
 - 3.1 Written science communication
 - 3.1.1 Popularising science with articles
 - 3.1.2 Science communication on social media
 - 3.1.3 Creating a science blog
 - 3.2 Oral science communication
 - 3.2.1 How to create a science pitch?
 - 3.2.2 How to create a science podcast?
 - 3.2.3 How to make an impactful TED talk?
 - 3.2.4 How to give a brilliant TV interview about your science?