Chapter 4
Standards Developments in Scholarly Publishing

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ABSTRACT

Publication is an essential step in research and is the responsibility of all scientists. Scholarly publications should provide a comprehensive and detailed record of scientific discoveries. They affect not only the research community, but society at large. Scientists have a responsibility to ensure that their publications are complete, detailed, clear, honest, balanced, and avoid misleading, selective, or ambiguous statements. Journal editors are also responsible for ensuring the integrity of the research literature. Publishers are adapting their roles in response both to changing needs and to these new competing services that can include researchers, research institutes, universities. Aside from their traditional roles in supporting quality assurance and peer review, publishers participate in many initiatives and develop services, often in partnership with universities and other organisations, to support communication and develops standards. This chapter shows the importance of standards and presents some concrete examples of standards organizations and perpetual evolution.

1. HISTORY, KEY NUMBERS AND DEFINITION OF STANDARDS

1.1 History

Eugene Garfield originally designed the Journal Impact Factor (JIF) to help librarians choose journals that deserved a subscription. The JIF aggregates number of citations

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to articles published in each journal, and then divides that sum by the number of published and citable articles. Since that time, the JIF has become the hallmark of the quality of the journal and has been widely used for the evaluation of research and researchers, even at the institutional level. It therefore has a major role in the field of research (Quader, 2021).

Deep changes have affected scholarly publishing, but the process itself has remained remarkably stable during centuries. It includes four key functions that have accompanied scientific publishing since the 17th century:

1. Registration with attribution system
2. Certification with peer review system
3. Dissemination with distribution and access system
4. Preservation with permanent archiving system

The main objective of this practice is therefore to improve the relevance and accuracy of scientific discussions by bringing knowledge, perspective and experience. Although experts often criticize peer review for a number of reasons, the process is still often considered the "gold standard" of science.

Academic publications have been used for years to disseminate academic research and scholarships. Articles from academic journals, books, thesis etc. are published and the quality of these results are guaranteed by the peer review quality system. Peer review quality and selectivity standards vary greatly from journal to journal, publisher to publisher, and field to field.

To publish a research article in the United States, the time between submission and publication of an academic article can vary a lot. In average, it takes about 4 to 8 months for publishers and reviewers to get a return after submitting the article.

Most researchers are still evaluated to date by their number of scientific publications and by their number of citations. The part of academic written output that is not formally published but merely printed up or posted on the web is called *grey* literature (Systematic review, n.d.). Most scientific and scholarly journals, and many academic and scholarly books, though not all, are based on some form of peer review or editorial refereeing to qualify texts for publication. In this context standards are essential to guarantee the quality of the productions of the research results.

1.2 Some Key Numbers

- 1945: Scientific scholarly publishing has deeply changed since the second world war. With few exceptions, organizations and association-based publishing have declined in importance, while commercial publishing has become dominant. Then, in the 1970s, the JIF is become the standard of