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Altmetrics: measuring Science from social media

A altmetria na mensuração da Ciência em mídias sociais

César Antonio **PEREIRA**[1] 0000-0001-7620-7874

The transition from traditional communication media into new digital supporting interfaces has been gradually transforming media per se as well as audiences. Using new designs, resources and platforms, complementarity then occurs between forms of data distribution and consumption thereof. In other words, the way information is made available and received, in addition to how communication performs its function, has completely changed. Conventional media have found a natural ally in the Internet and in social networks.

In the field of Science, the use of social media for sharing research by authors and institutions is rocketing. Social media in research allows not only for fast connections but also speedy relationship building amongst researchers from the most varied fields of knowledge. It also facilitates exchange of expertise and dissemination of scientific findings [1].

Communication channels such as journals disseminate Science via published articles addressed to related parties and scientists alike in a personalized and direct fashion. Dissemination of articles on social media enables direct access to studies, ease of reading, mobility in access formats and management of bibliographic archives. It establishes a dynamic format of communication between Science and society, emphasizing the importance of social media for visibility and social impact of Science.

The use of social media is furthermore pivotal as a methodological framework for understanding various scientific phenomena. In dentistry, for instance, studies based on social networks have already gathered significant quantitative ratios due to an exponential increase in the number of papers published on this subject in recent years. Dentistry has been on the receiving end of interferences and impact from such studies, especially from the educational and professional perspectives. It has also been involved in the understanding of information mediation models through social collaboration platforms. This is evidence of attention to information formats, behavior and users aimed at improving the models of educational management and professional practice, improvement of business, dental products and services [2].

Recognizing the role of social media, as well as the nuances of its applications and representations in the contexts of production, representation and dissemination of scientific information is therefore relevant in contemporary times. In view of the importance of social media in society, it is vital to measure the impact of media visibility. In order to achieve that, methods and tools have been developed to gather data relating to articles and authors from social networks, such as "altmetrics". The latter is a term proposed by Priem et al. [3] to define the alternative metric of Web 2.0-based indicator studies, with

[1] Pontifícia Universidade Católica de Campinas - PUC Campinas, Programa de Pós-Graduação em Linguagens, Mídia e Arte. Rod. D. Pedro I, km 136, Pq. das Universidades, 13086-900, Campinas, SP, Brasil. Correspondência para / Correspondence to: CA PEREIRA. E-mail: <cesarpereira@puc-campinas.edu.br>.

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the purpose of analyzing scientific and academic activity, exploring the properties of measurements based on social media. Basically, altmetrics measures the citation index of a particular research on social media, thus quantifying the visibility of authors and their research, i.e., the state of the art on scientific activity [1]. According to Vanti and Sanz-Casaco [4], the aim is to count the mentions and the sharing of links from articles on social media, i.e., going beyond the conventional citation counts by formal means to understanding the impact of the media in society and the real impact of publications and their geographical distribution. Along with other metrics, altmetrics aid in understanding the dissemination of scientific information and scientific communication.

The use of altmetric measurements can capture the influence of academic publications in a wider and different section of readers than traditional citation counts (which only reflect the behavior of the authors of publications). The altmetric measurements derived from social media are gathering increasing support and are used as early indicators of the impact and usefulness of a particular piece of research. In medical and biological sciences, there is strong evidence on the association between citation enhancement of scientific articles and increasing visibility of these articles on social media [5].

In the area of dentistry, recent studies have demonstrated the relevance and effectiveness of using altmetric indicators [6-8]. In order words, it is possible to measure the "web-based attention" brought to journal articles [5].

The application of altmetrics allows not only the identification and understanding of the popularity, reading interest, access, support and consumption structures of scientific information on social media, but it also makes it possible to understand scientific visibility otherwise not measured by traditional Science and technology indicators. It is understood, therefore, as an important contemporary resource for democratization of Science.

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