







Dissemination Strategies for Scientific Journals on YouTube and Instagram

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Abstract. Strategies for dissemination to scientific journals on YouTube and Instagram are proposed. It is characterized as exploratory and descriptive, with a qualitative approach to the data collected. First, searches were made in international databases to find scientific production that would cover the theme of dissemination in scientific journals through social media. Second, strategies for scientific dissemination in social media were established. As a result, six fundamental guidelines for the use of social media were described, covering both strategic and operational aspects: 1) Basic purpose of the use of social media; 2) Properties of the content; 3) Definition of the target audience; 4) Strategic and operational aspects of the use of social media and production of content; 5) Ethical and legal aspects involving the use of social media and production of content and; 6) Crisis management through a complaint or negative criticism about the posted content. The fourth guideline also outlined eight steps for scientific journals. Also, guidelines on the strategic use of YouTube and Instagram for the dissemination of science by scientific journals were listed. It is concluded that there is an incipient number of investigations that provide strategies for the use of social media by scientific journals and that the use of these for scientific dissemination requires a well-defined strategy to achieve the objectives proposed by the scientific journal.

Keywords: Social media · Scientific journal · Scientific communication

1 Introduction

In scientific communication, the dissemination of information occurs both formally, with the publication of books, articles in journals, abstracts, and complete works in annals of events, thematic or institutional repositories, among others. As much informally in an informal way, without the evaluation of a commission of experts, with the dissemination

through informal means like blogs, personal websites, academic social media (ResearchGate or Academia.edu) or popular social media like Twitter, Facebook, Instagram, etc. [1]. The latter being conceptualized [2] as scientific dissemination.

The profile of the target audience differs in the two communication processes [2]. In scientific communication, the public generally has a specific background that makes them familiar with the themes, concepts, and scientific process. In scientific dissemination, the public does not necessarily have a technical-scientific background to understand the entire production process in science and technology (S&T).

Both processes contribute to the expansion of the dissemination of science, as they are not mutually exclusive. Even with the insertion of new means of scientific communication, the importance of journals and articles has not been shaken [1]. Thus, this research is guided by the questioning of how to stimulate the dissemination of scientific journals in social media strategically?

Given the above, the goal is to propose dissemination strategies for scientific journals on YouTube and Instagram. For this purpose, the following section describes the methodological procedures adopted in the composition of the bibliographic survey, as well as the criteria used for the compilation of strategies.

Having said that, it approaches how the theme is worked in the scientific literature, the suggested strategies following the type of social media, and the practical and theoretical contributions.

2 Methodologic Procedures

This research can be characterized as exploratory and descriptive, with a qualitative approach to the data collected. First, searches were made in international databases to find scientific production that would cover the theme of dissemination in scientific journals through social media. Second, strategies for scientific dissemination in social media were established.

Scopus and Web of Science (WoS) were used for offering worldwide coverage of scientific production. According to systematic searches carried out on July 27, 2020, without period delimitation and with language specification in Spanish, English, and Portuguese, the total of documents recovered in the combination of the terms **scholarly communication AND scientific journal AND social media**, was in 54 documents, and for the terms **scientific communication AND scholarly communication AND social media**, in 121 documents (Table 1).

This was followed by the reading of the titles, abstracts, and keywords of 175 documents, to select those that came closest to the objective of the research. In this process, it was also sought to eliminate documents that did not come from scientific journals, since this delimitation was not applied at the time of searches.

With the total number of documents recovered by both combinations of terms, a new duplicity check was performed, which resulted in 50 not duplicated documents to be analyzed in their entirety on the main theme focused on strategies for dissemination of scientific journals. After reading, the final portfolio consisted of 34 documents. Of these, the most relevant were used to highlight the gaps that supported the reflection proposed and sought in this work, strategies for dissemination of scientific journals on YouTube and Instagram. This resulted in 13 research described in the following section.

Table 1. Quantity of documents retrieved per database related to the terms scholarly communication AND scientific journal AND social media and scientific communication AND scholarly communication AND social media.

Terms	Scopus	WoS	Total	Not duplicated
Scholarly communication AND scientific journal AND social media	40	32	72	54
Scientific communication AND scholarly communication AND social media	99	67	166	121

3 Scientific Communication in Social Media

The use of social media in scientific communication has received attention from researchers from different parts of the world, according to articles analyzed from the systematic searches described in the section on methodological procedures.

There is research on: the use of Twitter to communicate and conserve scientific event information, with instruction for the incorporation of hashtags and relevant user names [3]; about automated Twitter accounts that distribute links to scientific articles deposited in the arXiv preprint repository [4]; the use of Twitter and other social media to foster research ideas, collaboration and academic activity [5]; the broader involvement with scientific literature from tweets containing links to scientific articles [6]; the publication of scientific research on Facebook and Twitter, specifically related to the Zika virus in 2016, with emphasis on the predominance of the English language [7]; the potential or actual social impact of shared research on Twitter and Facebook social media [8]; the analysis of journal articles with high citation counts but low Twitter mentions and vice versa, with the aim of obtaining an overview of the differences between citation counts and Twitter mentions of academic articles [9]; and the methodology approach to measure and visualize the diffusion patterns of scientific research literature, with the aim of detecting when research articles spread beyond the academic community or lead to exchanges with the general public [10].

The research focused on the use of social media by scientific journals was also identified, the focus of this article. Social media with their function in scientific communication by complementing the scientific journals, and their active use as a stimulus to the demand for them. From research on 100 scientific and academic journal sites, they found that 19 used social media such as Facebook, Twitter, and blogs. However, the social media strategies of the sites were diverse about the content generated, including in some cases, with most coming from outside the journal [11]. An exploratory study on profiles of 30 scientific journals on Twitter, to analyze the management of profiles, identify the characteristics of the most interactive contents and proposing effective practices that motivate strategic management. The results revealed outstanding practices and certain deficiencies in the strategic management of social profiles. They mentioned ongoing research on the generation of effective social media management standards for academic journals based on ongoing analysis and regular quantification of results, to identify fields

for improvement that can promote growing strategies and contribute to the creation of a brand journal [12].

There is research on Altmetrics [13–15], with reflections on the journals, but with a strong point in analyses of external mentions. They explored the use of Twitter as an Altmetrics indicator to evaluate the social impact of a scientific journal [13]. They described the presence and visibility online of selected journals from Korea, indexed in the Web of Science in the Journal Citation Reports of the Science Citation Index 2016, with the greatest online attention being located on Twitter, followed by Facebook [14, 15] analyzed the Altmetrics as to the limitations that hinder the visibility of science carried out in Brazil and concluded with an emphasis on the need to valorize the activity of scientific dissemination, especially in the democratization of society's access to scientific results, the construction of scientific policies that value "these activities in career progression and evaluation of research projects.

In view of the panorama presented, in order to add to the research and practices realized, it is presented in the next section suggestions of strategies of dissemination for scientific journals in YouTube and Instagram, as well as the justification of delimitation of these social media.

4 Strategies for Scientific Dissemination in Social Media

To guide the use of social media, some considerations are necessary, which can serve as guidelines for the strategic and operational planning of the use of these platforms. The **first guideline** deals with the basic purpose of the use of social media: the production and sharing of content. According to [16, p. 61] "Social media is a group of Internet-based applications, which are guided by the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content". Therefore, the use of social media platforms presupposes the creation and sharing of content, as well as the interaction between people who are part of the network. For this, the content needs to have certain features, which refers to the **second guideline**.

There are some properties of content that need to be observed for it to fulfill its purpose of disseminating science. It is possible to admit the effectiveness of good content in face of the usefulness and relevance that leads to the intended audience. For this, both the use of social media and the production of the content itself needs to be done in a strategic, planned, and assertive way. In this sense, it is possible to use Content Marketing, which according to [17, 147], "[...] is an approach that involves creating, selecting, distributing, and expanding content, which is interesting, relevant, and useful for a clearly defined audience with the objective of generating conversations about this content [...]". The **third guideline** arrives, defining the target audience.

The use of social media, as well as the production of content, will only make sense when it is clear what the profile of the audience you want to serve is. Based on this perspective, we recommend the studies based on ethnography, a research method that consists of participating observation and acting in the online environment, where different "computer-mediated forms of communication are used as a source of data for the understanding and ethnographic representation of cultural and communal phenomena" [18, p. 3].

In addition, it is necessary to pay attention to accessibility issues, as most social media platforms provide specific resources to make content more accessible. And finally, it is necessary to avoid academic jargon and have special attention to the use of simple language, clear and appropriate to the target audience.

The **fourth guideline** relates to the strategic and operational aspects of the use of social media and content production. In this regard, the eight major steps (Table 2) defined by [17, p. 151], which guide Content Marketing, can be adapted:

Table 2. Eight steps for content marketing in scientific journals based on [17].

Steps	Description
1) Setting goals	The focus and scope of the journal must be aligned and be measurable through key metrics;
2) Mapping the audience	The audience to be reached should be determined, from whom are the people to be served by the content;
3) Content design and planning	Raise and select the content ideas, as well as perform the appropriate planning, paying attention to the relevance of the themes, appropriate formats, and genuine narratives;
4) Content creation	As the most important step, it requires you to invest time and energy in the production of high-quality, original, and rich content. In addition to establishing a schedule and defining the people who will perform such activities, to ensure the sustainability of content creation;
5) Content distribution	Distribution through own channels (websites, blogs, e-mails) or conquered media (YouTube, Instagram, Facebook, Twitter, etc.) is required. It should be noted that content produced on a given platform can be distributed on other channels, provided that the necessary adaptations are made regarding the formats;
6) Content expansion	Identify relevant actions to leverage the content produced, generate relevant conversations, and interact with the audience;
7) Content performance evaluation	It covers the assessment of strategic and tactical performance indicators. The strategic scope is related to the goals set in the first step, how close to achieving them, or what still needs to be done to make this happen. Tactics refer to the assessment of key metrics, with the aid of social listening tools and data analysis;
8) Performance improvement	From the tracking and performance evaluation of the content, it is possible to define periodic improvements in the approach of the themes, as well as in the creation, distribution, and expansion of the content to be produced.

The **fifth guideline** refers to the ethical and legal aspects involving the use of social media and the production of content. In this item, [19, p. 175], they stress that it is necessary to observe local legislation, for example, the Brazilian legislation on the use of the Internet, the terms of use of each platform and copyright, and the recent General Law on Personal Data Protection (Lei Geral de Proteção de Dados Pessoais - LGPD), which deals with the issue of privacy of personal data available on the Internet.

Finally, the **sixth guideline**, also raised by [19, p. 177], deals with the guidelines for crisis management through a complaint or negative criticism about the posted content. In this context, it is necessary to value urbanity and diplomacy, but at the same time maintain a firm stance regarding the message to be passed on.

Thus, in outlining the six fundamental guidelines for the use of social media about scientific dissemination in journals, it seeks to point out that the production of authentic, relevant, and high-value content is essential to achieve the established objectives and obtain concrete results. This only happens when efforts are directed to serve a specific audience, defined from validated methodologies, as well as appreciate assertive communication.

Thus, it is necessary to attend to the operational factors of content creation and pay attention to the ethical and legal aspects, as well as to the crisis management orientation. Only after observing these guidelines, it is possible to define which platforms are important for the strategy outlined by the scientific journal.

The selection of the social media to be used goes through a primordial question, which refers to the presence of the target audience in the chosen platforms. According to the Digital 2020 report July Global Statshot, there is an increase of more than 10% in the number of users in social media worldwide if we compare with last year's statistics. "With more than 376 million new users since July 2019, this translates into almost 12 new users every second [...]" [20]. However, the demographic distribution of this usage is still not uniform across the globe.

Regarding the most used social media, the ranking is led by Facebook, followed by Youtube, Whatsapp, already Twitter appears in the last place in a list that has 16 social media. However, the positioning of this ranking may vary according to the country analyzed, as in the Digital in 2020 report, presented in January 2020, in which in the Brazilian scenario the ranking of the most used social media has another configuration, with Youtube in the first place, followed by Facebook, Whatsapp and Instagram - this time Twitter appears in 6th place [21].

Thus, based on the information mentioned, it seeks to guide the strategic use of YouTube and Instagram for the dissemination of science by scientific journals, to contribute to existing practices, as well as bring new possibilities for action.

4.1 YouTube

With over 2 billion users worldwide, YouTube offers a platform focused on creating audiovisual content, which, according to the Digital 2020 survey July Global Statshot, remains the audience's preferred format [20]. The interesting thing is to try to develop a diverse editorial line, which pays attention to variations of exhibition time, themes, and types of content.

In Brazil there is Science Vlogs Brasil, a quality seal for scientific publishers, which ensures that a video with this seal it is conveying serious scientific information, with recognized sources that are representative of the current scientific and academic consensus, being constantly analyzed by peers in a favorable network of mutual help and constant communication [22]. It has the purpose of giving reliability to the dissemination of scientific knowledge, as well as helping in the fight against misinformation. By joining as a member, the channel can participate in a support network that has important collaborators such as doctor Dráuzio Varella, paleontologist Pirula, and E-farsas.

Regard the types of content that can be developed, some examples are listed: Interviews; Webinars; Videos; Tips and tutorials; Reviews; Questions and Answers; Dissemination, coverage, and transmission of in-person events; Online events; Live events; Calls for publication, among others.

4.2 Instagram

In a social media strategy, the platform can be used to make the journal better known to the public, since it has a significant potential to attract new followers. Ideally, the account should be registered as a content creator or business, because only then is it possible to access and follow the profile metrics, such as the growth of the follower base, public profile, interactions with content, among others.

Another relevant point is to pay attention to the four formats of native content of the platform: stories, feed, reels, and IGTV. The stories have the purpose of sharing short content, which is available for up to 24 h. The types of content can be a record of the backstage work of the magazine and its collaborators, disclosure of events and calls for publication, interactive content such as question boxes, tests and polls, lives and/or live interviews.

The feed gathers the main publications of the account and supports three types of content: images, videos of up to 1 min, and carousel posts, which work as a kind of album with a limit of 10 images per post. With creativity, it is possible to develop in-depth and useful content on a given theme, provided it does not exceed the limits of 2,200 characters in the legend.

IGTV works as an exclusive profile video channel. With a different format than the feed, the videos can be produced in the vertical position (with the proportion of 9:16) or horizontal (with the proportion of 16:9), with display time that must vary between 60 s and 1 h. The types of content for YouTube (item 4.1) also apply to IGTV and there is the possibility of organizing them in series.

Finally, the latest feature, reels, has the purpose of distributing short audiovisual content (from 15 to 30 s) in which followers can interact and recreate the content from the audio replication. The challenge imposed by this format is to have the creativity to produce relevant content, even with this time limitation. Short tutorials, quick tips, events disclosure, calls for publication, and interview excerpts are some examples of the types of posts that can be produced in reels.

5 Final Considerations

Proposing dissemination strategies for scientific journals on YouTube and Instagram, was the goal that guided the research addressed in this work. In which it is evident that most of the scientific articles published bring research with the use of social media by the researchers themselves, which indirectly reflects in access to scientific journals through disseminated articles. However, an incipient number of investigations provides strategies for the use of social media by scientific journals, since among the analyzed articles we found only the research of [12] with direct suggestions of strategies.

It is important to emphasize that the use of social media for the purpose of scientific dissemination requires a well-defined strategy to achieve the objectives proposed by the scientific journal. Thus, six fundamental guidelines for the use of social media have been described, covering both strategic and operational aspects: 1) Basic purpose of the use of social media; 2) Properties of the content; 3) Definition of the target audience; 4) Strategic and operational aspects of the use of social media and production of content; 5) Ethical and legal aspects involving the use of social media and production of content and; 6) Crisis management through a complaint or negative criticism about the posted content.

Also, in the fourth guideline, eight steps were outlined for scientific journals: 1) Setting goals; 2) Mapping the audience; 3) Content design and planning; 4) Content creation; 5) Content distribution; 6) Content expansion; 7) Content performance assessment and 8) Performance improvement.

The sequence of this research will consist of investigating which scientific journals are using YouTube and Instagram as a dissemination channel and whether the practices are aligned with the guidelines described for the strategic and operational planning of these platforms.

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