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EDITORIAL

Peer review in scientific journals

Achieving the acceptance of one's own ideas by other researchers is to achieve one of the best rewards the scientific world can give. It is to move from individual thought and analysis, always threatened by subjectivity, to the solid knowledge of the scientific community, which gives meaning to the work and ideas of the researcher [1].

Peer review is the "evaluation of scientific, academic or professional work by others working in the same field." A process that evaluates the quality of the work in question by experts in the same field to determine whether it meets predefined standards takes place. Peer review is widely used by many to assess quality: journals use it to evaluate manuscripts submitted for publication (academic peer revision); professional groups to evaluate the performance of their members; grant agencies to evaluate their funding applications; universities to evaluate the performance of professors for promotion, etc. In the case of journals, editors do not know everything: they have some knowledge of topics in their area of expertise, but only know a few in depth. Given the broad spectrum of topics that can be covered by submitted manuscripts, expert review on the topic of the papers is required before deciding whether to accept or reject submissions. Peer review dates back to 1731, when the Royal Society of Edinburgh published *Medical Essays and Observations*, in which "memoirs sent by correspondence are distributed according to subjects to the members best versed in these subject matters." The identity of the reviewer is not known to the author" [2].

Publication in a scientific journal, which is a formal way of sharing ideas and gaining acceptance of one's own, requires compliance with certain quality requirements, particularly peer review, in the course of which omissions, errors, and alternative explanations can be detected. Peer review has become the norm and, in fact, characterizes scientific journals within the universe of publications. Generally, a certain degree of anonymity is added to the peer review itself, either of the reviewers, or of the reviewers and authors, in an effort to achieve, respectively, freedom of criticism and fairness [1]. Here are some suggestions for evaluating articles: i) take into consideration publishers and journals guidelines on how to review manuscripts, ii) read the entire manuscript before evaluating it, iii) determine initially if the manuscript's findings will advance/update current knowledge, and iv) evaluate each section of the paper. Peer review prior to the publication of a new article has two main objectives: to help the editor decide whether the article meets predefined quality standards and to help authors improve

their revised manuscript for resubmission, if invited, to the same journal or, if rejected, to another journal.

With this in mind, a useful and helpful review has information for both the editor and the authors. There are different ways to write a report of this kind, but the format of the journal must be used. The reviewer may begin by writing a summary of the article, indicating whether the findings extend/update current knowledge, or whether the article repackages the published literature in a manner similar to bottling old wine in a new bottle. This is followed by a "Main Comments" section, which, in turn, is followed by a "Secondary Comments" section. In both sections, each comment should state the problem with suggestions on how it can be solved. They should also be accompanied by page, paragraph, and line identification. All of this will help the editor and author understand and follow the critique [2]. It is not the reviewer's responsibility to detect plagiarism or self-plagiarism in new manuscripts. However, if the reviewer suspects such problems, he/she should alert the editor. The reviewer should give recommendations on the next steps for the paper after weighing its strengths and weaknesses: accept, reconsider after major revisions, reconsider after minor revisions, or reject. This may be based on (1) whether the study question is important/innovative; (2) whether the experimental approach is valid; (3) whether the results are credible and properly reported; (4) whether the findings are innovative and important; and (5) whether the conclusion is based on the data. This rating should not appear in the "Comments to Authors", but in the "Comments to Editor", who will decide the next steps.

Peer review is an essential part of scientific publication which confirms the validity of the reported science. Peer reviewers, in some way, offer authors free advice. Through the peer review process, manuscripts should improve in the following aspects [3]: Be more robust: reviewers may point out gaps in the work that require further explanation or additional experiments. Be easier to read: if some parts of the article are difficult to understand, reviewers should report that so they can be modified. After all, if an expert cannot understand what has been done, it is unlikely that a reader from a different field will understand it. Be more helpful: reviewers also consider how important the work is to others in their field and may make suggestions for improvement or highlight this to readers. Almost all reviewers will also submit their own work to journals to be considered for publication. When they do so, they expect to receive balanced, fair, objective, unbiased reviews, along with constructive criticisms with

suggestions for addressing them. They expect not to read abusive, derogatory, and sarcastic comments. They should treat their colleagues, other authors whose work they are reviewing, in the same manner.

In the peer-review process, many journals use the double-blind type (neither the author knows who is correcting him/her, nor the reviewer knows who he/she is evaluating). The rationale for anonymity is to increase freedom for criticism. The anonymous reviewer enjoys a freedom of criticism that helps him to: (a) express his or her opinion directly, politely but frankly; (b) avoid disputes and personal discussions; (c) resolve conflicts of authority (especially when an inferior in academic category/position judges a superior); (d) draft the review in a way that leaves the editor free to make the final decision (the editor often enjoys less scientific authority than the reviewer, but must decide and accept responsibility for the decision with absolute independence); (e) facilitate the participation of prominent members of the scientific community, who would reject the work of the review if it were not done anonymously; (f) facilitate criticism before and in private, which with frankness and tact can free the author, without embarrassment, from the harshest and most public subsequent criticism, and (g) avoid the acceptance of papers of dubious quality, by avoiding constructive scientific criticism and "no", sometimes, to achieve a clientele of grateful accepted authors [1, 4].

On the other hand, the anonymity of the authors adds equanimity, serene impartiality of judgment. It is not a matter of being objective, but of achieving unbiased subjectivity. The double-blind process helps to: a) avoid the bias of judging the manuscripts of recognized institutions/authors benevolently and those of unknown/novel institutions/authors harshly; b) advise and correct while maintaining the appropriate "therapeutic distance"; c) resolve possible conflicts of interest, and d) place the reviewer and the author on an equal footing with respect to anonymity. The author who knows he/she is anonymous receives the reviewer's report with a sense of relief, because he/she knows that only the work described in the manuscript is being judged. If there is harshness, it is due to the character of the reviewer, not to a settling of scores. Anonymity especially protects the new author and the one who presents risky and innovative ideas and work. Thanks to anonymity, papers and ideas that do not coincide with previous lines can be developed without fear of being criticized for it before their publication [1, 4].

A manuscript can be rejected for many reasons, but they can generally be divided into technical and editorial reasons. Technical reasons usually require more work, such as additional experiments or analysis before the paper can be published. Technical reasons for rejection

include: incomplete data, such as too small a sample size, or non-existent or deficient controls; deficient analysis such as the use of inadequate statistical tests or lack of statistics altogether; use of inappropriate methodology to confirm the hypothesis or the use of old methodology, which has been superseded by newer and more powerful methods that provide more consistent results; weak research motive where the hypothesis is not clear or scientifically valid, or the data do not answer the question posed; and inaccurate conclusions on assumptions that are not supported by the data. These reasons for rejection can be avoided by investing sufficient time in extensive reading of the subject matter, deciding carefully on the topic to focus on, the hypothesis, and planning a comprehensive methodology.

Editorial reasons for rejection include: outside the scope of the journal; not enough advancement or sufficient impact for the journal; ethics in research have been ignored; lack of proper structure or failure to meet journal formatting requirements; lack of necessary details for readers to understand and repeat the authors' analysis and experiments; lack of up-to-date references or references containing a high proportion of self-citations; it has a poor linguistic quality that cannot be understood by readers; difficulty following logic or poorly presented data; and violation of publication ethics. These reasons for rejection can be avoided by following specific journal guidelines, making sure to write a coherent article in good English, and honestly evaluating your work when deciding on a target journal [3].

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