

The scientific quality of a journal

There are several differences between scientific journals and professional or popular magazines. Some of these differences are obvious: the design and layout, writing style and use of illustrations, for example. However, it is the less obvious differences which are far more important.

Scientific journals have a publisher, who is responsible for the business side of things: production, distribution, subscriptions, etc. But they also have an Editorial Board, responsible for the scientific quality of the contents. This board will generally safeguard quality by means of the 'peer review' process.

Editorial board

- The Editorial Board comprises, in most cases, an Editor-in-Chief and a number of 'regular' editors. Most are part of the staff of a university or research institute. Their work for the journal is therefore in addition to their regular teaching and/or research. In the vast majority of cases, the members of the Editorial Board are not paid for their input.
- The Editorial Board is responsible for the journal's scientific quality. The editors decide which articles are to be published and when. It then falls to the publisher to produce the journal.
- The Editorial Board assesses all submitted material. Articles which are deemed unsuitable for the journal (because the topic is inappropriate or the level is too low) will be rejected immediately. The remaining articles are then subjected to 'peer review'. Based on the findings of the reviewers, the Editorial Board will decide whether the article is to be published.
- Good journals have an editorial board made up of prominent scientists drawn from renowned universities. The best editorial boards are international, with members from various parts of the world.

Peer review

- Peer review is assessment by 'peers' (= equals), i.e. fellow scientists. If the editorial board decides that an article is good

enough to be reviewed, they will forward it to two or three reviewers. Like the editors themselves, most reviewers are scientists on the staff of a university or research institute. They will read the article with a critical eye, and are usually making a questionnaire to indicate their opinions on the article, whether anything is unclear or whether certain information is lacking. Finally, they will state whether they think the article should be published, perhaps after some (major or minor) revision by the author.

- A peer review is usually 'double blind': the reviewers are not told the identity of the author, and the author does not know who has been asked to review his article. This ensures that the article is judged solely on its content and not the reputation of the author. In reality, however, the scientific world is very small. Reviewers will often know who has written the article.
- The results of the peer review – the completed questionnaire, the reviewers' opinions and suggestions for improvement – are returned to the editorial board. One of the editors will then summarise the findings for the benefit of the author and will make the final decision. His options are:
 - The article is to be published unaltered.
 - The article is to be published once the author has improved a few minor points or rectified any omissions.
 - The article is not yet suitable for publication, but will be accepted for re-assessment once the author has rewritten it.
 - The article is rejected.
- A good journal will describe its peer review process in full on its website. In many cases, journals also state the proportion of submissions which are not accepted. The most prominent and established journals actually publish only 10% of the articles they receive, while the newer and lesser-known journals accept practically everything. They may even help authors improve their work until it is good enough to be published.

Further information about the scientific quality of journals

- Read the Wikipedia entry for Academic Journal.
- Refer to the table in this document produced by Proquest (a provider of scientific databases). It shows the differences between scientific journals on the one hand and professional or popular magazines on the other.

- Read the TUlib module Citation analysis (<http://www.library.tudelft.nl/tulib/citationindex/index.htm>)
- Read the TUlib module Evaluating Resources: learn more (<http://www.library.tudelft.nl/tulib/evaluating/advanced/index.htm>)