The basis of the peer review process [1] is that any research paper [2] is forwarded to a group of experts in the field, and they assess its quality, accuracy and, often, novelty.

Whilst most people are aware of peer review processes for scientific journals [3], they are also used for grant [4] applications, conference papers and textbooks for University Press-publishers.

With the amount of poor quality research available on the internet at the moment, it is vital to ensure that any sources that you use are from a peer-reviewed publication. It is also handy to understand the process, providing you with another tool to assess the quality and validity [6] of information.

This is extremely important because of the way in which research [7] is built up, with all research relying upon the findings of previous researchers in the field. If a piece of research is later found to be inaccurate, flawed or a fraud [8], then the viability of all the research built upon it is brought into question.
How the Peer Review Process Works

Whilst every journal or grant application process has its own protocols, they all follow the same basic structure.

- The editor reviews a stack of papers for submission. This editor usually has some expertise in the field, so can filter out the very poor quality papers, to avoid cluttering the peer review process with substandard research.
- The remaining papers are sent to referees for further approval, usually to two leading experts in the field.
- They approve, reject or send back the paper to the editor, with recommendations for improvements. The vast majority of papers require some degree of modification before publication.
- The editor, usually with a good knowledge in the field, although not as in depth as the referees, will pass the paper, along with the comments, back to the author for amendment. Usually, when the author returns the paper for the second time, the editor will make the decision himself, without re-referring to the peers.

Generally speaking, the editor’s word is final, and the referees are there on a purely consultation basis.

Ideally, all stages of the process are independent, and the referees do not consult with each other, nor are they even aware of each other’s identity, to ensure impartiality. If the two peers disagree, then the editor makes the final decision, although high profile, prestige journals often send the paper to another reviewer for a decision.

In other cases, the editor may allow the author to deliver a rebuttal to any negative criticism, or even direct conversation between the author and referee.

Anonymity in the Peer Review Process

Traditionally, the authors never knew the identity of the reviewers, and many journals attempted to use a double blind method, where the authors remained anonymous, but this proved to be very difficult, as the reference list and specific area of research gave too many
clues, especially in smaller fields where researchers will tend to be aware of each other’s work.

The internet has brought its own difficulties, and it is becoming increasingly common to open up the entire process, especially in the field of medicine, where the sheer volume of research and journals makes it practically impossible to evaluate the quality of research.

In this process, subscribers to the journal can also read the entire history of the report, including all of the referees’ comments, bringing transparency to the process.

The idea of the peer review process is still the gold standard by which academic papers are reviewed, but the electronic-age has meant that peer review publications must adapt to the changing access to information.

Related pages:

Advantages of the peer review process [11]

Disadvantages of the peer review process [12]

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