Peer Review:

## Quality Management:

The computer scientist [Ian Sommerville](https://en.wikipedia.org/wiki/Ian_Sommerville_%28academic%29)[[1]](https://en.wikipedia.org/wiki/Software_quality_management#cite_note-1) uses SQM as an umbrella-term that includes the following quality layers:

Software Quality Assurance (SQA) layer

An Organizational quality guide of

* Standards, regulations, and procedures to produce, verify, evaluate and confirm work products during the software development lifecycle
* Incorporated knowledge base of best practices
* Off-the-shelf software tools selected to apply the above

Software Quality Plan (SQP) layer

A project level quality plan written by each project for declaring project commitment to follow an applicable set of standards, regulations, procedures and tools during the development lifecycle. In addition, SQP should contain quality goals to be achieved, expected risks and risk management. SQP sources are derived from

* SQA components that are adopted as is or customized to the project's needs
* New procedures, standards and tools complementing missing or not-applicable SQA components that have been written in particular for the project, or imported from outside the organization.

Any deviation of an SQP from SQA should be justified by the project manager and be confirmed by the company management.

Software Quality Control (SQC) layer

Ensures in-process that both SQA and SQP are being followed by the development teams.

SQC activities include

* Mentoring how to produce artifacts, such as well-defined engineering documents using standard templates
* Mentoring how to conduct standard processes, such as quality reviews
* Perform in-process quality reviews to verify, evaluate and confirm artifacts
* Verify and evaluate to improve the use of methods, procedures and adopted software tools

<https://en.wikipedia.org/wiki/Software_quality_management>

Advantages of peer review:

* There is no doubt that the process is not perfect, but it does allow the reader to make some judgment about the relative quality and merit of the [research](https://explorable.com/what-is-research).
* Peer reviewing allows a diversity of opinions to be brought to the table, theoretically removing any personal [biases](https://explorable.com/research-bias) and [pre-set ideas](https://explorable.com/verification-error) from the equation.
* The [peer review process](https://explorable.com/peer-review-process) stops a lot of substandard and poor science from reaching publication. In addition, the reviewers are generally experts in their field, well acquainted with the latest developments. They can, therefore, reject duplicate research and [plagiarized papers](https://explorable.com/academic-plagiarism).
* Because editors can use the process to remove poor quality work, it saves a lot of wasted time and money, especially if the work is plagiarized. Without referees, a journal would have to employ a team of editors with expertise in every field, and this would make the cost of the production prohibitive.
* Traditionally, the [journals](https://explorable.com/academic-journals) that use [peer review](https://explorable.com/peer-review-process) enjoy an excellent reputation and are trusted by experts in the field. This also helps them to attract the best researchers and scientists to submit papers.
* The reviewers are experts in their field, and [peer reviewing](https://explorable.com/peer-review-process) often brings innovative research to their attention, where it may be buried amongst a flurry of papers.
* Peer reviewing is not only used for journals but for grant applications and University standard textbooks. This helps to ensure that money is diverted only towards viable research proposals. The peer review of textbooks ensures that students are taught correctly and are provided with excellent information.

<https://explorable.com/advantages-of-peer-reviews>

# Types of peer review

The three most common types of peer review are:

* Single blind
* Double blind
* Open review

However, other models have evolved which include key variations from the standard approach. These include:

* Transferable
* Collaborative
* Post publication

The diagram below includes the many variables involved within the peer review process.

### Double blind

In this type of peer review the reviewers don't know the identity of authors, and vice versa. This is the most common form of peer review amongst social science and humanities journals.  
  
  **Pros**  
  
• Research is judged fairly, keeping bias out of the equation  
• Author and reviewer benefit from some level of protection against criticism   
  
  **Cons**  
  
• Anonymity isn't guaranteed, as it could be fairly straightforward to discover the identity of the author (either because of the area of research, the references or the writing style)  
• Some argue that knowledge of the author's identity helps the reviewer come to a more informed judgement - and that without this the review suffers

### Open peer review

The identity of the author and the reviewers are known by all participants. There is a growing minority of journals using this form of peer review but popularity among reviewers is yet to be proven. Some journals may also publish the reviews together with final articles, and so readers see both the identity of the reviewers and their comments. This is only the case, however, with accepted articles.  
  
  **Pros**  
  
• The transparency of open peer review encourages accountability and civility, generally improving the overall quality of the review and article  
• Reviewers are more motivated to do a thorough job since their names and sometimes comments appear as part of the accepted, published article  
  
  **Cons**  
  
• Some reviewers might refuse to review for a journal using an open system, due to concerns about being identified as the source of a negative review  
• Reviewers could be reluctant to criticize the work of more senior researchers - especially if their career depends on them. In smaller research communities and in some regions of the world this could be a significant problem

### Transferable peer review

This is a fairly new form of peer review which allows subject-related journals to transfer reviewed manuscripts between each other. Typically, an author submits their paper to a journal but after it has been reviewed the editors decide that although not suitable for their journal it is likely to be appropriate for a similar journal. The author is then given an option to transfer the manuscript to the other journal. It's important to note that transferring a manuscript does not guarantee acceptance in the other journal. If the author agrees to the transfer, all manuscript files, metadata and reviewer report forms are sent to the receiving journal.   
  
  **Pros**  
  
• One of the main benefits of this model is immediately providing the author with an alternative outlet for their work - potentially speeding up the publication process  
• From an editorial perspective, where there is a group of journals part-owned by a society or publisher, it keeps the work within the 'family' of titles  
• It reduces the burden on the community of reviewers  
  
  **Cons**  
  
• Editors of the receiving journal might not actually want to receive more submissions (if they already have a high volume of papers) or feel that the work is appropriate  
• This system could be frustrating for authors if, after transfer, the editor of the alternate journal decides the manuscript is not suitable  
  
Wiley has a number of transferable peer review arrangements in place including a scheme cross 9 neuroscience journals - [click here for details](http://olabout.wiley.com/WileyCDA/Section/id-819217.html).   
  
The Transplant Peer Review Network ([Tx PRN](http://onlinelibrary.wiley.com/subject/code/000116/homepage/transplant_peer_review_network.htm)) is a collaborative consortium formed to ease the burden on peer reviewers, improve the publication process for authors, and reduce the time and effort involved in the peer review of transplantation research by sharing peer review with other journals participating in the Network. More detailed information can be found at [www.wileytxnetwork.com](http://onlinelibrary.wiley.com/subject/code/000116/homepage/transplant_peer_review_network.htm).

### Collaborative review

This covers a broad variety of approaches in which a team of people work together to undertake the review. One format is to have two or more reviewers work together to review the paper, discuss their opinions and submit a unified report. Another approach is to have one or more reviewers collaborate with the author to improve the paper, until it reaches a publishable standard.   
  
  **Pros**  
  
• It can feel more constructive and less restrictive than more traditional approaches to peer review, as it removes the barriers that silo authors and reviewers  
  
  **Cons**  
  
• There is a risk of losing the benefit of having two, or more, independent evaluations  
• Collaboration between authors and reviewers also creates the risk of blurring the distinction between authoring and appraisal

### Post publication review

With this type of peer review, the option for appraisal and revision of a paper continues - or occurs - after publication. This may take the form of a comments page or discussion forum alongside the published paper. Crucially, post publication peer review does not exclude other forms of peer review and is usually in addition to, rather than instead of, pre-publication review.   
  
  **Pros**  
  
• This approach reflects the evolving nature of knowledge  
• It gives the opportunity for papers to be corrected or improved  
  
  **Cons**  
  
• Revising papers after publication is incompatible with the notion of the version of record, which seems integral to the current model of contextualizing new research through citation of previous literature  
• Shortcomings and errors within published material have traditionally been addressed through corrections and errata, and through published discussion (e.g. letters to the editor)

<https://authorservices.wiley.com/Reviewers/journal-reviewers/what-is-peer-review/types-of-peer-review.html>