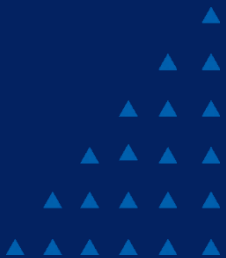


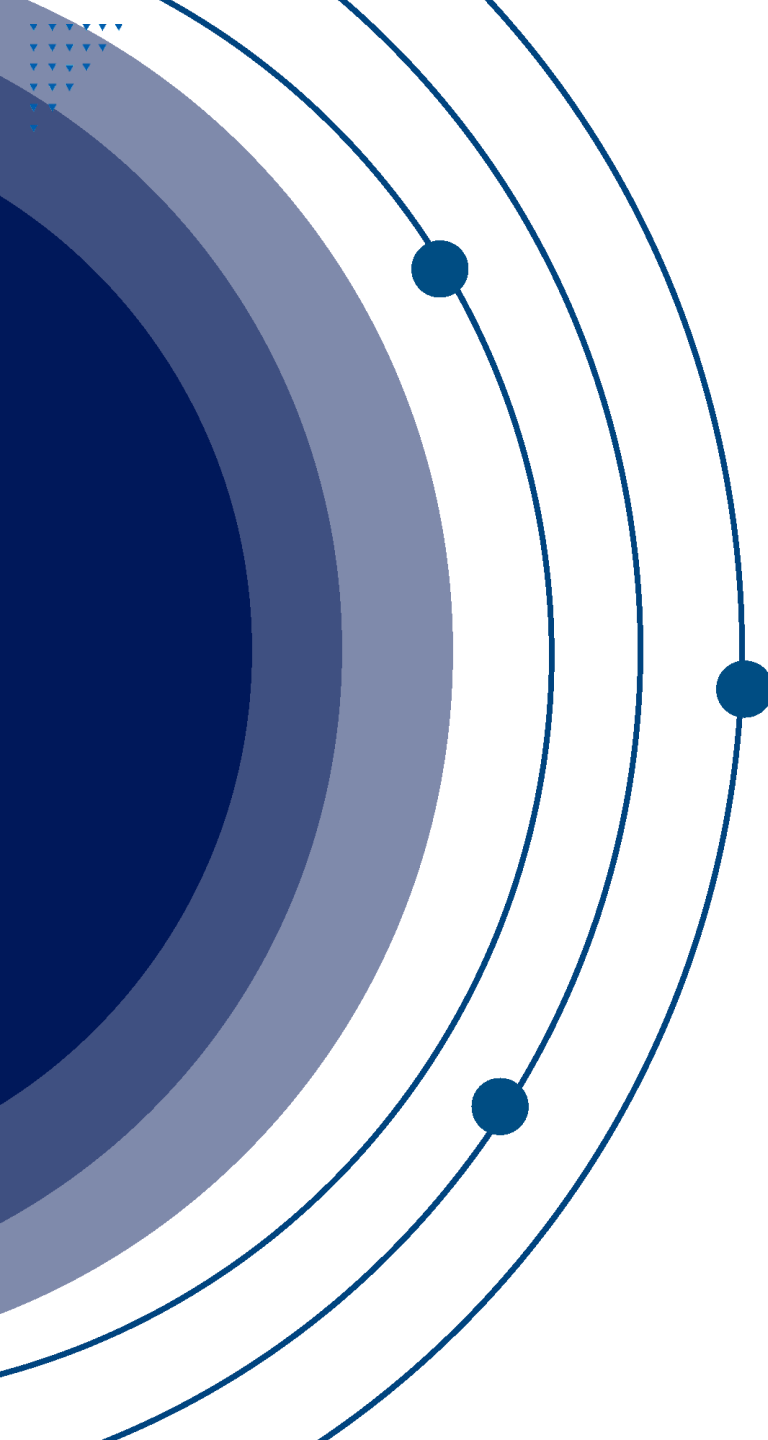
Construction Performance and Productivity Improvement

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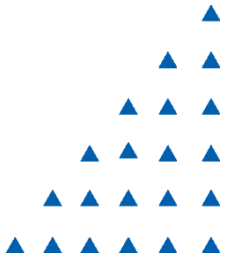
SEOUL NATIONAL
UNIVERSITY





How to write a review report

Sources: Wiley, Elsevier, PLOS



What is Peer Review?

- ❑ Peer review is designed to assess the validity, quality and often the originality of articles for publication.
- ❑ From a publisher's perspective, peer review functions as a filter for content, directing better quality articles to better quality journals and so creating journal brands.
- ❑ What peer review does best is improve the quality of published papers by motivating authors to submit good quality work – and helping to improve that work through the peer review process.
 - ❑ 90% of researchers feel that peer review improves the quality of their published paper (University of Tennessee and CIBER Research Ltd, 2013)



Why should you peer review?

- 40.8% It's part of my job as a researcher
- 35.1% Do my fair share/reciprocate for reviews of my work
- 32.9% Keep up-to-date with the latest research trends in my field
- 32.9% Ensure the quality and integrity of research published in my field
- 17.5% Voluntary service to my field/research community
- 13.9% Develop personal reputation and career progression
- 13.5% Improve my own writing skills
- 11.9% Build relationships with journals/editors

Results from Publons' 2018 Global Reviewer Survey of approximately 12,000 reviewers.
Available at: <https://publons.com/community/gspr>

Peer Review Process



Pitfalls of Peer review system

Inconsistent

Reviewer A: 'I found this paper an extremely muddled paper with a large number of deficits'

Reviewer B: 'It is written in a clear style and would be understood by any reader'.

Bias

Bias against authors from less prestigious institutions (e.g., DP Peters and SJ Ceci)

Bias against “negative studies (finding intervention does not work)”

Abuse

Slow down the work of a competitor. (e.g., Rennie vs Soman)

Pitfalls of Peer review system: Someone else's problem

- ❑ John Bohannon's experiment
 - ❑ As Ocorrafoo Cobange, a made-up biologist at the also fictitious Wasse Institute of Medicine in Asmara, Bohannon wrote a terrible paper about the anti-cancer virtues of a molecule he claimed to have extracted from lichen.
 - ❑ Slightly differing versions of the "bait" paper were sent to 304 open access (OA) journals. Just over half, 157, accepted the paper, pointing out some serious flaws in the peer review system.
- ❑ Philip Moriarty: "What happens when something gets through the process that turns out to have been wrong?"
 - ❑ Moriarty, via his colleague Mathias Brust, informally estimates that about 80% of scientists find potential flaws in papers that don't immediately affect their work an insufficient reason to engage in disputes.
 - ❑ "After all, you never know who referees your next paper." Such reluctance to rock the proverbial boat could leave the next researcher referring to shaky (or worse) preceding work.

Types of Peer Review

Single Blind, Double Blind, Open Peer Review

“It is probably impossible to ignore the effect of the author’s name, whether they be an unknown or a big-shot scientist. By acknowledging that potential impact, you can mitigate the most disturbing effects. Remember that your job as a reviewer is to judge the work, not the scientist.”

- STEPHEN CURRY, Professor of Structural Biology, Imperial College London

Transparent Peer Review: Review report is posted with the published paper

Collaborative review

Post publication review

Step by Step guide: Overview of Review report

"Number your comments!!!" (Jonathon Halbesleben, Editor of Journal of Occupational and Organizational Psychology)

- Informal Structure : Do not provide criteria for reviews beyond asking for your 'analysis of merits'.
- Formal Structure: Ask you to address specific questions in your review via a questionnaire. Or want you to rate the manuscript on various attributes using a scorecard

=> In either case, you should expect to compile comments to authors and possibly confidential ones to editors only.

Step by Step guide: The First Read-Through

- The first read-through is a skim-read. It will help you form an initial impression of the paper.
- Key Considerations:
 - What is the main question addressed by the research? Is it relevant and interesting?
 - How original is the topic? What does it add to the subject area compared with other published material?
 - Is the paper well written? Is the text clear and easy to read?
 - Are the conclusions consistent with the evidence and arguments presented? Do they address the main question posed?
 - If the author is disagreeing significantly with the current academic consensus, do they have a substantial case? If not, what would be required to make their case credible?
 - If the paper includes tables or figures, what do they add to the paper? Do they aid understanding or are they superfluous?

The First Read-Through: Spotting major flaws

- Making the right choice of what to read first can save time by flagging major problems early on.
- Examples of possibly major flaws:
 - Drawing a conclusion that is contradicted by the author's own statistical or qualitative evidence
 - The use of a discredited method
 - Ignoring a process that is known to have a strong influence on the area under study



The First Read-Through: Spotting major flaws

- Example: If experimental design features prominently in the paper, first check that the methodology is sound - if not, this is likely to be a major flaw. Then you might examine:
 - The sampling in analytical papers
 - The sufficient use of control experiments
 - The precision of process data
 - The regularity of sampling in time-dependent studies
 - The validity of questions, the use of a detailed methodology and the data analysis being done systematically (in qualitative research)
 - That qualitative research extends beyond the author's opinions, with sufficient descriptive elements and appropriate quotes from interviews or focus groups

The First Read-Through: Spotting major flaws

- Major flaws in information: Look at the data tables, figures or images first
 - Insufficient data
 - Unclear data tables
 - Contradictory data that either are not self-consistent or disagree with the conclusions
 - Confirmatory data that adds little, if anything, to current understanding - unless strong arguments for such repetition are made

The First Read-Through: Concluding

- Draft the first two paragraphs of your review:
- **The First Paragraph:** State the main questions of the research and summarize the goals, approaches, and conclusions of the paper.
 - Help the editor properly contextualize the research and add weight to your judgement
 - Show the author what key messages are conveyed to the reader, so they can be sure they are achieving what they set out to do
 - Focus on successful aspects of the paper so the author gets a sense of what they've done well
- **The Second Paragraph:** This should provide a conceptual overview of the contribution of the research. So consider:
 - Is the paper's premise interesting and important?
 - Are the methods used appropriate?
 - Do the data support the conclusions?



The First Read-Through: Concluding

- You should be in a position to decide whether this manuscript is seriously flawed and should be rejected. Or whether it is publishable in principle and merits a detailed, careful read through (Second-read through).
- Even if you are coming to the opinion that an article has serious flaws, make sure you read the whole paper. After all, you need the context of the whole paper before deciding to reject.



Step by Step guide: The Second Read-Through

- One purpose of the second, detailed read-through is to help prepare the manuscript for publication. (You can still reject after the second read-through)
- The benchmark for acceptance is whether the manuscript makes a useful contribution to the knowledge base or understanding of the subject matter. It need not be fully complete research - it may be an interim paper. After all research is an incomplete, on-going project by its nature.

"Offer clear suggestions for how the authors can address the concerns raised. In other words, if you're going to raise a problem, provide a solution." (Jonathon Halbesleben, Editor of Journal of Occupational and Organizational Psychology)

The Second Read-Through: Preparation

- Don't rely solely upon inserting comments on the manuscript document - make separate notes
- Try to group similar concerns or praise together
- If using a review program to note directly onto the manuscript, still try grouping the concerns and praise in separate notes - it helps later
- Note line numbers of text upon which your notes are based - this helps you find items again and also aids those reading your review
- Keep images, graphs and data tables in clear view - either print them off or have them in view on a second computer monitor or window

The Second Read-Through: Major points

- Check the argument's construction, the clarity of the language and content.
- Regarding the argument's construction,
 - Any places where the meaning is unclear or ambiguous
 - Any factual errors
 - Any invalid arguments
- If the article is difficult to understand, you should have rejected it already. However, if the language is poor but you understand the core message, see if you can suggest improvements to fix the problem
 - Are there certain aspects that could be communicated better, such as parts of the discussion?
 - Should the authors consider resubmitting to the same journal after language improvements?
 - Would you consider looking at the paper again once these issues are dealt with?



The Second Read-Through: Introduction

- A well-written introduction:
 - Sets out the argument
 - Summarizes recent research related to the topic
 - Highlights gaps in current understanding or conflicts in current knowledge
 - Establishes the originality of the research aims by demonstrating the need for investigations in the topic area
 - Gives a clear idea of the target readership, why the research was carried out and the novelty and topicality of the manuscript
- **Aims:** It's common for the introduction to end by stating the research aims. If the explicit aims come as a surprise, then the introduction needs improvement.

The Second Read-Through: Introduction

- Originality and Topicality:
 - Originality and topicality can only be established in the light of recent authoritative research. (Don't reference the articles that are 10 years old)
 - Authors may make the case that a topic hasn't been investigated in several years and that new research is required. This point is only valid if researchers can point to recent developments in data gathering techniques or to research in indirectly related fields that suggest the topic needs revisiting. Clearly, authors can only do this by referencing recent literature.
 - Obviously, where older research is seminal or where aspects of the methodology rely upon it, then it is perfectly appropriate for authors to cite some older papers.

The Second Read-Through: Materials and Methods

- Academic research should be replicable, repeatable and robust - and follow best practice.
 - Replicable research:
 - : This makes sufficient use of control experiments, repeated analyses, repeated experiments, sampling.
 - Repeatable methods
 - : These give enough detail so that other researchers are able to carry out the same research
 - Robust Research
 - : This has enough data points to make sure the data are reliable

The Second Read-Through: Results and Discussion

- This section should tell a coherent story - What happened? What was discovered or confirmed?
- Certain patterns of good reporting need to be followed by the author:
 - They should start by describing in simple terms what the data show
 - They should make reference to statistical analyses, such as significance or goodness of fit
 - Once described, they should evaluate the trends observed and explain the significance of the results to wider understanding. This can only be done by referencing published research
 - The outcome should be a critical analysis of the data collected
- Discussion should always gather all the information together into a single whole. Authors should describe and discuss the overall story formed. If there are gaps or inconsistencies in the story, they should address these and suggest ways future research might confirm the findings or take the research forward.

The Second Read-Through: Conclusion and References

- The conclusions should reflect upon the aims - whether they were achieved or not - and, just like the aims, should not be surprising. If the conclusions are not evidence-based, it's appropriate to ask for them to be re-written.
- Check referencing for accuracy, adequacy and balance.
 - Accuracy
 - Adequacy: other published papers on this topic
 - Balance: not over-reliant on self-citation, fair to competing authors

How to structure your report

- Summary
 - Give positive feedback first. Briefly summarize what the paper is about and what the findings are
 - Try to put the findings of the paper into the context of the existing literature and current knowledge
 - Indicate the significance of the work and if it is novel or mainly confirmatory
 - Indicate the work's strengths, its quality and completeness
 - State any major flaws or weaknesses and note any special considerations. For example, if previously held theories are being overlooked
- Major Issues
 - Problems in arguments, experimental methods, result interpretation, presentations.
- Minor Issues
 - Ambiguous expressions. Factual, numerical errors.

How to structure your report

- **Recommending Acceptance:** Give details outlining why, and if there are any areas that could be improved.
- **Recommending Revision:** state specific changes you feel need to be made
- **Recommending Rejection:**
 - Give constructive feedback describing ways that they could improve the research
 - Keep the focus on the research and not the author. This is an extremely important part of your job as a reviewer
 - Avoid making critical confidential comments to the editor while being polite and encouraging to the author - the latter may not understand why their manuscript has been rejected. Also, they won't get feedback on how to improve their research and it could trigger an appeal

Don't for effective feedback

- Recommend additional experiments or unnecessary elements that are out of scope for the study or for the journal criteria.
- Tell the authors exactly how to revise their manuscript—you don't need to do their work for them.
- Use the review to promote your own research or hypotheses.
- Focus on typos and grammar. If the manuscript needs significant editing for language and writing quality, just mention this in your comments.
- Submit your review without proofreading it and checking everything one more time.

Before and After: Sample Reviewer Comments

✗ Before

“The authors appear to have no idea what they are talking about. I don’t think they have read any of the literature on this topic.”

✓ After

“The study fails to address how the findings relate to previous research in this area. The authors should rewrite their Introduction and Discussion to reference the related literature, especially recently published work such as Darwin et al.”

✗ Before

“The writing is so bad, it is practically unreadable. I could barely bring myself to finish it.”

✓ After

“While the study appears to be sound, the language is unclear, making it difficult to follow. I advise the authors work with a writing coach or copyeditor to improve the flow and readability of the text.”

Before and After: Sample Reviewer Comments

✗ Before

“It’s obvious that this type of experiment should have been included. I have no idea why the authors didn’t use it. This is a big mistake.”

✓ After

“The authors are off to a good start, however, this study requires additional experiments, particularly [type of experiment]. Alternatively, the authors should include more information that clarifies and justifies their choice of methods.”

Suggested Language for Tricky Situations

What you think: The manuscript is fatally flawed.

What you could say: “The study does not appear to be sound” or “the authors have missed something crucial”.

What you think: You don’t completely understand the manuscript.

What you could say: “The authors should clarify the following sections to avoid confusion...”

What you think: The technical details don’t make sense.

What you could say: “The technical details should be expanded and clarified to ensure that readers understand exactly what the researchers studied.”

What you think: The writing is terrible.

What you could say: “The authors should revise the language to improve readability.”

What you think: The authors have over-interpreted the findings.

What you could say: “The authors aim to demonstrate [XYZ], however, the data does not fully support this conclusion. Specifically...”

Summary

- Your ultimate goal is to discuss what the authors would need to do in order to qualify for publication
- The point is not to nitpick every piece of the manuscript
- Write the type of review you'd want to receive if you were the author



Exercise: Peer review of a review report

- (1) Share your review report with your partner. Then discuss your evaluations on those papers.
- (2) Please review your partner's review reports and provide your comments on his/her reports.
- (3) Synthesize and create collaborative review reports from your team, and present.

