

How to do an open peer review

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Second Cycle Degree in Digital Humanities and Digital Knowledge

Alma Mater Studiorum - Università di Bologna



How to review a research article

A [workflow](#) that suggests one to perform three readings of a paper, concentrating on a different element each time

1. Get an overall impression of the paper and its aims
 - a. Take notes as you go
 - b. Write down your understanding of the science
 - c. Stop the review if a fatal flaw is found
2. Concentrate on the method, analysis and conclusions
 - a. Distinguish between major and minor issues
 - b. Ask specific questions about the introduction, methodology, results and conclusions
3. Concentrate on the writing and presentation
 - a. Back up your comments by suggesting how to make the story more cohesive and tightly reasoned

An example of a bad review

“The paper presents a new approach in ontology visualisation. The problem I have with this paper is that it has little content in general and even more from a semantic web point of view.

Out of 16 pages, five pages are about the intro and the related work. Furthermore the first part of the main Section (section 3) contains a description of previous work.

The evaluation takes than the remaining part of the paper. Human factors and user studies, thought not core to this community, are very important. However in this specific case I believe that this paper simply does not have enough meat to be accepted.”

Reviewing scholarly resources

Resources are all these publications that cannot be characterised as a research article but have contributed or may contribute to the generation of novel scientific work

Resources include datasets, ontologies/vocabularies, ontology design patterns, evaluation benchmarks or methods, software tools/services, APIs and software frameworks, workflows, crowdsourcing task designs, protocols, methodologies and metrics

The International Semantic Web Conference series has prepared a great [set of guidelines](#) to assist reviewers in reviewing such scholarly resources, organised in four dimensions: Impact, Reusability, Design & Technical quality, and Availability

Impact

Does the resource break new ground?

Does the resource fill an important gap?

How does the resource advance the state of the art?

Has the resource been compared to other existing resources (if any) of similar scope?

Is the resource of interest to the target community?

Is the resource of interest to society in general?

Will/has the resource have/had an impact, especially in supporting the adoption of specific kinds of technologies?

Reusability

Is there evidence of usage by a wider community beyond the resource creators or their project? Alternatively (for new resources), what is the resource's potential for being (re)used; for example, based on the activity volume on discussion fora, mailing lists, issue trackers, support portal, etc.?

Is the resource easy to (re)use? For example, does it have high-quality documentation? Are there tutorials available?

Is the resource general enough to be applied in a wider set of scenarios, not just for the originally designed use? If it is specific, is there substantial demand?

Is there potential for extensibility to meet future requirements?

Does the resource include a clear explanation of how others use the data and software? Or (for new resources) how others are expected to use the data and software?

Does the resource description clearly state what the resource can and cannot do, and the rationale for the exclusion of some functionality?

Design & Technical quality

Does the design of the resource follow resource-specific best practices?

Did the authors perform an appropriate reuse or extension of suitable high-quality resources?

Is the resource suitable for solving the task at hand?

Does the resource provide an appropriate description (both human- and machine-readable), thus encouraging the adoption of FAIR principles? Is there a schema diagram? For datasets, is the description available in terms of VoID/DCAT/DublinCore?

Availability

Is the resource (and related results) published at a persistent URI (PURL, DOI, w3id)?

Is there a canonical citation associated with the resource?

Does the resource provide a licence specification?

Is the resource publicly available?

Is the resource publicly findable? Is it registered in (community) registries? Is it registered in generic repositories such as FigShare, Zenodo or GitHub?

Is there a sustainability plan specified for the resource? Is there a plan for the medium and long-term maintenance of the resource?

Does the resource adopt open standards, when applicable? Alternatively, does it have a good reason not to adopt standards?

How to review a methodology

Recently, PLOS ONE has introduced a new type of article, i.e. Study Protocol, and provided [specific guidelines and questions](#) to review such publication objects:

1. Does the manuscript provide valid rationale for the planned or ongoing study, with clearly identified and justified research questions?
2. Is the protocol technically sound and planned in a manner that will lead to a meaningful outcome and allow testing of the stated hypotheses?
3. Have the authors described where all data underlying the findings will be made available when the study is complete?
4. Is the methodology feasible and does the description provide sufficient methodological detail for the protocol to be reproduced and replicated?

How to review a data management plan

It is necessary to assess the quality of the proposed data management plan and to comment on whether appropriate and realistic consideration has been given to data management requirements to maximise data sharing

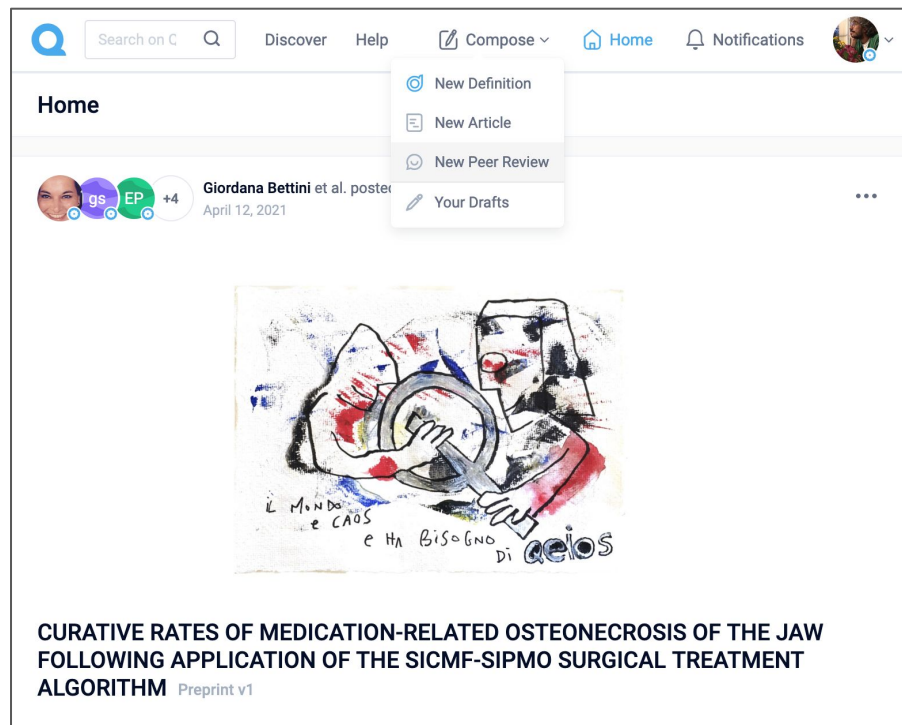
1. Assessment of existing data
2. Information on new data
3. Quality assurance of data
4. Backup and security of data
5. Expected difficulties in data sharing
6. Copyright/intellectual property right
7. Responsibilities
8. Preparation of data for sharing and archiving

Writing an open review

Action item: All the members of each team must write a review to one of the two research objects that have been produced by the other team, i.e. the data management plan and the protocol

Each team must produce **a review for each member**: one/two reviews of the data management plan of the other team and one/two reviews of the protocol of the other team

Each member of a team must write one reviews and publish it on [Qeios](#), in order to get a DOI for it – remember: once published, the review cannot be modified anymore



The golden rule of reviewing

Main rule

Review for others as you would have others review for you

Corollary

Provide a **thorough**, **fair**, and **constructive** critique of the work

Action item: each team must use the reviews received to improve its research objects following the suggestions provided by the reviewers

End

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