REVIEWING AN ORIGINAL RESEARCH MANUSCRIPT FOR THE INTERNATIONAL JOURNAL OF EXERCISE SCIENCE: A GUIDE FOR STUDENTS AND PROFESSIONALS

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ABSTRACT

Int J Exerc Sci 1(2): 43-49, 2008. Considerations for the review process of manuscripts submitted to the International Journal of Exercise Science are presented. Initial steps to evaluation include reading the abstract to determine your ability as a reviewer, becoming familiar with the journal requirements, and formulating an initial impression of the manuscript. At this point an assessment is made to determine how the reviewer should treat the manuscript. If it is determined that the manuscript is acceptable with minor revisions, or may be acceptable with major changes, a full review should be performed. A full review of the manuscript requires a thorough examination of the major headings including the Introduction, Methods, Results, and Discussion. The written review is composed of two parts, a section with the decision that is composed of comments only for the editor, and a section that provides feedback to the authors. Specific comments to the authors should include an honest critique that aids in improving the manuscript.

KEY WORDS: Peer review process, student guidelines, article assessment, submission evaluation

Reviewing manuscripts for possible publication is a great responsibility, as careers depend on being published in high quality journals. Editors and reviewers must therefore also ensure that accepted manuscripts are of the best quality and within the scope of topics the journal publishes, and studies are innovative and scientifically sound. A competing need is that your time is limited, so you want to do the job right without taking up excessive amounts of time. Hopefully, the following guidelines will help.

Content of this document:

1. Initial Steps

2. "Full" Review (Expectations of each section of the manuscript)

3. Writing Up the Review

Initial Steps:

1. Read the abstract to be sure that you have the expertise to review the article. Don't be afraid to say no to reviewing an article if there is good reason, e.g., insufficient expertise, no time.

2. Read information provided by the journal for reviewers so you will know:

a. The type of manuscript (e.g., a review article, technical note, original research) and the journal's expectations/parameters for that type of manuscript.

b. Other journal requirements that the manuscript must meet (e.g., length, citation style).

c. The information you will need to provide the editor(s). It helps to keep this in mind as you read through the manuscript, especially, as some journals require that you make various types of assessments: The options for the *International Journal of Exercise Science* are shown below:

"Recommendations to the Editor: Please select one of the options below."

___ *Encourage* ***major*** *revisions as described in my report*

___ *Accept this article with* ***minor*** *(or no) revisions as described in my report*

___ *Reject this article without an option to resubmit*

"Please explain the nuances of your recommendation in your cover letter to the editor below."

3. Know the journal's scope and mission to make sure that the topic of the paper fits in the scope (e.g., if journal is focused on applied biomechanics, don't submit a theoretical quantum physics treatise).

4. Ready? Read through entire manuscript initially to see if the paper is worth publishing- only make a few notes about major problems if such exist:

a. Is the question of interest sound and significant?

b. Was the design and/or method used adequate or fatally flawed? (for original research papers)

c. Were the results substantial enough to consider publishable (or were only two or so variables presented or were results so flawed as to render the paper unpublishable)?

5. What is your initial impression? If the paper is:

a. *Acceptable with only minor comments/questions*: solid, interesting, and new; sound methodology used; results were well presented; discussion well formulated with interpretations based on sound science reasoning, etc., with only minor comments/questions, move directly to ***writing up review***.

b. *Fatally flawed so you will have to reject it*: move directly to ***writing up review***.

c. *A mixture somewhere in the range of "revise and resubmit" to "accepted with major changes" or you're unsure if it should be rejected yet or not*: It may be a worthy paper, but there are major concerns that would need to be addressed. If unsure whether it is publishable, give the author(s) the benefit of a doubt. Give the manuscript the ***"full" review*** treatment.

Hint: If you are really unsure whether the paper can be improved enough to be publishable, ask yourself, "Is it fairly likely that the author(s) can make the necessary major improvements to

content, methodology, and/or writing within one revision?" If the answer is no, it is kinder to the author(s) to reject the paper now than having them try repeatedly to revise a paper that has little chance of acceptance. If still unsure, then give the author(s) the benefit of your doubt.

The "Full" review: Specific Expectations

As you go through a more thorough, "full" review of each section, make notations on the manuscript or elsewhere about major issues and questions you will raise. (Keep track of their location in manuscript).

General expectations through manuscript:

1. Writing: Is the manuscript easy to follow, that is, has a logical progression and evident organization?

2. Is the manuscript concise and understandable? Any parts that should be reduced, eliminated/expanded/added?

3. Note if there are major problems with mechanics: grammar, punctuation, spelling. (If there are just a few places that aren't worded well or correctly, make a note to tell the author the specific places. If there are consistent problems throughout, only select an example or two if need be- don't try and edit the whole thing).

4. Abbreviations: Used judiciously and are composed such that reader won't have trouble remembering what an abbreviation represents.

5. Follows style, format and other rules of the journal.

6. Citations are provided when providing evidence-based information from outside sources.

The expectations for each section of a manuscript of an original research experiment are explained below. [Minor points should take up very little of your time. They are marked "(minor)" below.]

1. Title, Abstract and Key Terms

a. Title: Concise, understandable and representative of manuscript's content. (minor)

b. Abstract: Is concise, approximately within word limit. Enough detail for the reader to understand purpose of study, what was measured and how measures were obtained. Enough results to know data outcomes. Some interpretation of the data exist so that the "what does it mean and why is it important" is evident.

c. Keywords: Useful search terms. Keywords should not replicate any words in the title. (minor)

2. Introduction

a. Is the problem investigated important and original? Good. Is it is just a rehash of previous work in the area? (if unsure, look up prior literature; some journals provide you with list of prior research).

* If the problem is trivial and adds nothing new to our knowledge, and this cannot be fixed with a revision, this is reason for rejection.

* If the problem is somewhat interesting/new but fairly minor, adding only a little new information or methodology, consider if manuscript may be more suitable as a technical note (if journal has that category).

b. Purpose(s) or aim(s) clearly stated and fit well with the problem being investigated.

c. What does the author surmise will happen? Is there explanation/justification for the expected outcomes that are based on scientific principles and/or scientifically logical? [This is common mistake novice researchers make].

Method

a. Is the information provided sufficient to determine if the right methodology /protocol was followed? (Guidelines for what should be reported are often available from professional societies.)

b. If human participants were involved, is there a statement that informed consent was obtained and that the study was approved by the institution's human subject review board?

c. Was the testing order appropriate to avoid biasing due to the order that the conditions were tested in?

d. Were appropriate research design methods used?

e. Were the data appropriately reduced/calculated/analyzed? Correct variables selected to test the anticipated outcomes?

f. Were appropriate statistical tests chosen? How does the reader know if the assumptions for using parametric tests were met? Posthoc tests appropriate? How was effect size calculated?

g. Bottom line: Considering all of the methods used, are the validity and reliability of the data acceptable?

Results

a. Are the data reported so that you can see for yourself the values and a corresponding measure of variability (e.g., standard deviation)? Except for judicious selection, values are not repeated in both text and in tables/figures?

b. Have the data been presented in the best manner, e.g., a good graph used rather than a hundred tedious tables?

c. Is there enough information to evaluate the statistics, e.g., the F- value is reported, along w/df? You also need to decide if some sort of other information regarding power or effect size is appropriate to request if not reported.

d. Are the table titles and/or figure captions clear and identify what is depicted in the table or figure? Abbreviations from the text should only be used in figures or tables if defined in the figure caption or table title (unless the abbreviations are fairly obvious or common).

e. Are the data that you believe are important to answer the research question reported or should other outcomes also be reported?

f. Do the data MAKE SENSE?? This is easy to miss. Are the values reasonable? (I once reviewed a manuscript where the strength values were 4 times that reported by anyone--- turned out the values were incorrect). Are the units correct (and in metric system)? Do the table values, graphs and/or text match? Are the degrees of freedom correct if reported?

Discussion

a. Does the author use the results of the study to support whether the expected outcomes occurred or not?

b. Does the author use in the Discussion the justifications for the anticipated outcomes presented in the Introduction? Are other explanations of the outcomes present that should be explored?

c. Are the interpretations that are presented supported by the data and/or previous studies and scientific concepts?

d. If other relevant studies exist in this area, does author contrasts those findings to those of current study?

e. For nonsignificant findings, do authors explore reasons? What should not be done is to unequivocally state for nonsignificant findings that the values were the 'same' or that the treatment made no difference or that different test conditions showed no difference. Lack of rejecting the statistical null hypothesis only means failure to have demonstrated statistical differences between test conditions.

f. Does the author recognize limitations to the study?

g. In a conclusion statement (at end of Discussion unless journal has a separate, Conclusion section), does author generalize results within boundaries of the outcomes reported and subject sample?

References

a. If manuscript likely will be accepted with only minor changes, check that the reference style is correct and consistently applied in text and in reference list.

b. Check quickly to see if references used are likely up-to-date.

Some journals only allow peer-reviewed journals; others may allow peer-reviewed books, too. Most do not allow referencing abstracts or short papers from conference proceedings.

Tables/figures

a. Check quickly to make sure that they are 'readable' and follow principles of good presentation of data in tables and/or figures, e.g., figures are labeled correctly, and are readable.

b. Are the tables/figures used visually appealing?

c. Some journals have limits on the number of tables/figures.

Remember: you will be providing feedback to the section/editor-in-chief, and separately, feedback to the authors. Give positive feedback, constructive feedback, enough to improve paper, but not so much as to overwhelm the authors-

OK- now if you were unsure about whether to accept the manuscript before the intense reading, maybe you're ready now.

Writing up the Review:

Overall: you will be providing feedback to the section/editor-in-chief, and separately, feedback to the authors. To authors: Give positive feedback, constructive feedback, enough to improve paper, but not so much as to overwhelm the authors.

Your written comments for each of these audiences are broken down into a) *major comments* and b) *specific comments*.

Major Comments

a. Comments to the journal: Are not shared directly with the authors. Usually goes to a section editor (and may/may not be shared with the other reviewers, too, depending on the journal) after everyone has voted. The Editor-in-Chief may choose to read your reply, too.

Start with the purpose of the study. Then, concisely provide a rationale for your decision, particularly if you vote no or to vote to require revise revisions. If a superbly done study, no comments are needed beyond 1 sentence.

b. *Comments to the author(s)*. Be honest, but at the same time use respect and tact. List the strengths of the article are, too- even if the manuscript is really bad (if possible). It's no fun to get nothing but negative remarks from someone- and it also gives the impression that maybe you're being too extreme, hence, making your opinions less valued by the author(s).

Start with something positive. Example:
"The question of how best to improve flexibility is a very important question in our field. This study could provide an important contribution to this research area..."

For general comments, here is the place to cover the "big" problems/controversies /questions regarding the study. The study is too long; the Introduction does not provide any rationale as to the significance of the study, hence it is not clear why this study is important... The Discussion doesn't appear to answer the questions raised in the Introduction. The Methods used were flawed, hence the results are not valid. etc. Manuscript needs a good editing job for grammar, typos...

DO NOT EVER TELL THE AUTHOR YOUR VOTE HERE. Sometimes the voting sheet is given to the authors (it's a form provided by the sec. editor). Sometimes it is not and that information is withheld from the author. So, it's best just not to say anything about how you voted.

*** If the manuscript is totally unacceptable, then your review may be finished. *If*, you choose to do so, and it will not take much of your time and you want to be helpful to the authors, consider providing a few, major suggestions for improvement that would help the authors in the future. (Ex. "You may find it helpful to have a colleague review your manuscripts before submission. This would benefit you because…")

Specific comments section to the authors

Use this section for a manuscript that needs revising, but has a good chance of acceptance: be fairly detailed for everything you think *is important enough* to be revised the way you think it should be revised. However, if the manuscript is poorly written throughout, don't try and redo every single sentence. Just suggest to the authors to fix these problems, in general.

Be sure to identify exactly where in the manuscript you're referring to- most manuscripts have page and line numbering. (Ex. "Pg 5, line 5: … Why did you choose…")

It is OK to give comments that could cover an entire section- for example: Methods "Throughout this section, the equipment used and the protocol appears to be mixed together such that it is difficult to follow the Methods section. For example, on pg. 2, ..."

So, for this section, go back through the manuscript and type up your notes you wrote to yourself. It is fine to ask the author questions- "Pg 10, line 3: Why did you use a sampling frequency of 100 Hz for a rearfoot motion study? Is this a sufficient sampling rate?"

For an unacceptable study, consider whether you want to provide feedback. If so, just focus on the highlights of the big stuff that you believe needs changing without spending too much time on it. If you choose to do this, the purpose would be to provide some help to an author to help them learn how to do better next time, or how to fix to submit the manuscript elsewhere.

BUT-- your time is valuable, so don't do as thorough a job as you would for a manuscript that would accept- because for an accepted manuscript- you're the quality control person.