

Meaningful Peer Review

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Abstract

The purpose of peer review is to uphold the integrity of the publishing journal, improve upon research activities and papers, and to further advance knowledge within the field of health education and promotion. This article provides an overview of peer review, some guidelines for accepting review assignments, and guidelines for conducting a thorough review that will serve the journal while assisting authors in making new knowledge accessible.

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Advancement of society is dependent upon the creation of new knowledge. This knowledge must be shared (published) in order for society to advance. For academicians in a “publish or perish” world, publication is also a matter of survival. This means that the number of articles written for publication in health journals each year is prolific. Many of these articles contribute greatly to the field of health promotion. Peer review is a matter of separating the wheat from the chafe. It is important that the scholarly literature be accurate and that it makes a meaningful contribution to the field. Maintaining the integrity of these contributions, which in turn impacts our integrity as health professionals, is the role of peer review.

Two hundred sixty-five complaints of research misconduct including fabrication, falsification, and plagiarism were identified by the Department of Health and Human Services’ Office of Research Integrity in 2005. There are varying opinions on the responsibility of peer reviewers to detect research misconduct.

According to the article *Can Peer Review Police Fraud?* (2006), if a reviewer second guesses findings, he or she should voice concerns to the editor. The editor may then address these concerns to the authors; however, “Because journal editors have no legal power, and no access to the raw data, it is nearly impossible for

them to determine whether fraud has occurred without the assistance of university or funding authorities (“Can Peer”, 2006, p. 149).” Conversely, Godoy (2006) states that “A qualified reviewer eliminates/reduces the possibilities of plagiarism, fraud, duplicate publications by an author, or attempts to publish material that has already been published by others (p. 25).” Godoy indicates that this can only be accomplished by reviewers who have maintained currency in the field. Furthermore, reviewers must have an in-depth comprehension of the paper that they are critiquing. This “...eliminates/reduces the possibility of flaws and data falsification in the analysis. (Godoy, 2006, p. 25).”

There are a number of people involved in the publication process. Originating authors, editors, reviewers, publishers, and in some instances associated industries all contribute to the quality of publications (Farthing, 2006). For an interesting discourse on the responsibilities of authors and editors see *Authors and Publication Practices* (Farthing, 2006), which addresses a number of disapproved publishing behaviors, of which reviewers should be aware.

Conducting Peer Review

Neff and Olden (2006) pose the fundamental question in their article *Is Peer Review a Game of Chance?* Using probability theory to

determine how to reduce chance in selection of articles for publication, they derive "... three key recommendations to ensure the integrity of scientific publications in journals: (1) Use an editor or editorial board to prescreen and remove manuscripts of low suitability; (2) use a three-of-three or four-of-four decision rule when deciding on paper acceptance; and (3) use a stricter decision rule for resubmissions (p. 333)."

How then, can we assure that peer review is sufficiently robust to advance both the field and the literature? We can do this by becoming better reviewers ourselves.

Some journal editors provide handy check-off sheets, to help you determine whether or not the article meets the journal's standards. More often, you are simply requested to complete your review prior to the due date assigned.

There are a number of considerations prior to accepting the assignment: (1) Do you have a conflict of interest (Bourne, 2006); (2) do you have the requisite knowledge or expertise (Godoy, 2006); (3) can you do a thorough review on-time? (Bourne, 2006)

Only if you do not have a conflict of interest, and can answer affirmatively to the second and third considerations should you agree to review the paper. Your next step should be reviewing the editorial requirements of the journal. Keep the following recommendation by Bourne (2006, p. 973) in mind at each juncture of the review. "Be sure to support your criticisms or praise with concrete reasons that are well laid out and logical." Just because it's a critique, doesn't mean that you can't say something positive.

Assuming that you have agreed to review the paper, write a review that would make your former research methods professor proud. What are the qualities of a "good" study and are they exhibited in this piece? Do the authors have researchable questions, or hypotheses? Are these clearly stated? Does the study pass the "So what?" test? Have the authors selected an appropriate methodology for answering their questions? Do the questions or hypotheses call for quantitative deductive or qualitative

inductive processes? Have the authors thoroughly reviewed the literature and drawn the connection between their literature review and the current study?

Next consider the authors' research approach. Human behavior is extremely complicated and the study of humans employs a number of research designs, ranging from observational or descriptive, to experimental, quasi-experimental, or some combination thereof. Each research design carries with it relative advantages and disadvantages in dealing with internal and external validity, as well as more mundane concerns as affordability. Researchers can take an inductive approach and build theory, or a deductive approach to test theory. Is the research design employed by the authors sufficient for the task at hand? Have the authors described their sampling method? Is it appropriate for the current study? Is the sample size sufficient? (Babbie, 2004; Isaac & Michael, 1995).

As you begin to consider instrumentation, you will want to know how the instrument was created. Publications vary in their requirements for submission of supportive materials. Have the authors used an existing instrument? Is the instrument valid for the authors' intended usage? Was an interview schedule carefully crafted? Have the authors articulated a well-developed field observation protocol? Was an expert panel involved in providing feedback to instrument developers? What assurances have been provided with respect to reliability and validity of the instrument used? If the instrument is included, does it appear that common rules of instrumentation were followed? (Babbie, 2004; Isaac & Michael, 1995).

The next steps to consider are the authors' data collection procedures and analyses. Have the authors communicated whether or not an institutional review board has approved their study? Were the data collected anonymously or confidentially? How was anonymity assured? What steps will be taken to protect the subjects' confidentiality? Are the data analyses, parametric or non-parametric, appropriate for the level of measurements obtained? If examining a qualitative study, have the authors

articulated a well designed method for analysis? Given the research design, are the findings clearly supported by the analyses performed? (Babbie, 2004; Isaac & Michael, 1995).

Results should include p values or confidence levels for any statistics reported. The research questions should be answered, and any hypotheses either accepted or rejected. Conclusions should be based upon a preponderance of the evidence presented within the paper. Practical significance of any statistics should be discussed. The authors should include recommendations to guide further study. (Babbie, 2004; Isaac & Michael, 1995).

Having met the burden of reviewing the paper from the scientific viewpoint, it is time to take a broader view of the piece in its totality. Do the authors themselves have conflicts of interest? (Laine, Goodman, Griswold, & Sox, 2007). Is the research reproducible (Laine, Goodman Griswold, & Sox, 2007) is the title suitable? Is the abstract a good representation of the study? Have the authors included the most salient points of the study within the abstract? Keep in mind that the goal is constructive criticism and this calls for some level of diplomacy. Lastly, if you were the author of the paper you have just reviewed, would you find your critique insightful, and helpful? (Bourne, 2006).

References

- Babbie, E. R. (2004). *Practice of social research*. (10th ed.). Belmont, CA: Wadsworth.
- Bourne, P. E. & Korngreen, A. (2006). Ten simple rules for reviewers. *Computational Biology*, 2, 973-974.
- Staff. (2006). Can peer review police fraud? Editorial. *Nature Neuroscience*, 9, 149.
- Farthing, M. J. G. (2006). Authors and publication practices. *Science and Engineering Ethics*, 12(1), 41-52.
- Godoy, L. A. (2006). Differences between experts and novices in the review of engineering journal papers. *Journal of Professional Engineering Education and Practice*, 132(1), 24-28.
- Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation*. (3rd ed.). San Diego, CA: EdITS Pub.
- Laine, C., Goodman, S. N., Griswold, M. E., & Sox, H. C. (2007). Reproducible research: Moving toward research the public can really trust. *Annals of Internal Medicine*, 146, 450-453.
- Neff, B. D., & Olden, J. D. (2006). Is peer review a game of chance? *Professional Biologist*, 56, 333-340.
- Office of Research Integrity. (2005). *Annual report*. DHHS Publication Washington DC: U.S. Government Printing Office. Retrieved May 20, 2007, from http://ori.dhhs.gov/documents/annual_reports/ori_annual_report_2005.pdf

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