

PEER REVIEW - CASE STUDY

Shortly after receiving tenure, a biological sciences associate professor was invited to be a program officer for the National Science Foundation, with a focus on undergraduate programs. He was honored to be offered this three-year appointment and arranged for an extended leave of absence from the university. During his first year he kept in regular contact with the two graduate students in his laboratory but once they graduated he decided not to accept new students until he returned to the university. His role as program officer was very demanding and he was not able to keep up with the published literature in his field of research.

After completing his term at the National Science Foundation he returned to the university. His goal during that first semester back was to catch up on the literature in his field and prepare a grant proposal. He was pleasantly surprised to find that one of his former graduate students had been hired as an instructor in his department. Shortly after his return he received a request to review a manuscript from a leading journal in his field. In looking over the manuscript, the faculty member noted that its focus was rather tangential to his. Furthermore, he knew that there were probably published papers in the general area that he had not yet read. He considered returning the manuscript to the editor with a note explaining why he was not able to provide the requested review; however, he felt that serving as an external reviewer for this journal would look good for both his annual report and his eventual plans for promotion to full professor, and for the grant proposal he planned to submit.

On reflection he realized that his former graduate student was much more familiar with the specific issues addressed in the manuscript that he was asked to review. He rationalized that engaging her help would benefit both her—by providing professional experience—and him. She was happy to help out and within a few days provided the faculty member with a detailed and well thought-out review. She was also very excited about a specific protocol that the authors in the manuscript had developed and was anxious to adapt it to her own use. She was unclear, however, on some of the specifics. Based on the review that the graduate student had provided, the faculty member was sure the manuscript would be published, but he also knew that this would be many months from now. He suggested that the graduate student contact the authors directly to get the additional information she needed for the protocol.

Question: Are there any challenges with this peer review?

PEER REVIEW CHALLENGES

Procedural challenges include:

- Ensuring that manuscripts and proposals go to the appropriate individuals or review groups
- Ensuring that manuscripts and proposals from new professionals receive equitable treatment, i.e., avoiding a process that favors established researchers ("old boy" network)
- Realizing that errors made by reviewers, including personal biases, are more difficult to recognize than errors made by authors or grant applicants

Ways to address procedural challenges include:

- Having editors/granting agencies include authors/proposal writers in the decision process for determining appropriate reviewers
- Establishing clear guidelines for peer reviewers
- Establishing periodic assessments of the reviewer pool and the configuration of review panels

Conceptual challenges for successful peer review processes include:

- Understanding the limits, as well as the strengths, of the peer review process
- Realizing that there is little information on the "success" of the peer review process, i.e., on its effectiveness in selecting the best, regardless of the criteria used

Ways to address conceptual challenges include:

- Encouraging studies on the peer review process
- Striving to develop criteria for selecting reviewers that will ensure the integrity of the process

Ethical challenges for successful peer review processes include:

- Recognizing that an inherent conflict exists in the peer review process. Those individuals likely to be in the best position to serve as peer reviewers are also the ones most likely to benefit from privileged material contained in the documents reviewed.
- Applying guidelines for eliminating potential conflict of interest too stringently may result in a compromised peer review process since those capable of providing an accurate and accountable assessment are likely to be disqualified.

Ways to address ethical challenges include:

- Continuing to revise the guidelines for conflict of interest to achieve a workable balance between this concern and the ability to identify appropriate peer reviewers
- Recognizing the importance of trust among professionals. Developing trust can be facilitated by providing a strong ethical foundation for individuals entering the profession and by accepting that even though the system of peer review may appear to work, it is not foolproof.