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A List of Research Problems Encountered in the Peer Review Process
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SUMMARY

This study presents problems related to the peer review of research articles; some problems have been observed by the authors, and other problems have been studied in previous researches. The objective is to identify and classify the problems, and therefore suggest future researches that can be initiated in the field of peer review by authors that continue our research. The process of reviewing research articles has been investigated and modeled in previous published researches. Based on the experience of the authors as peer reviewers, recommendations have been searched on how to do a review process. Next, based on interviews to colleagues who work at the university and had to do article review, the authors have found problems related to the peer review process. From previous researches, problems are identified and described; some of the problems found in previous researches match the problems found in the interviews. As

a result, a list of problems related to the peer review process and to the peer reviewer profile is presented. In conclusion, problems related to the peer review process and to the peer reviewer profile exist that have not been studied yet. The relationship among the various problems encountered has not been modeled yet. This research presents a list of problems that will conduct to future studies about peer review.

Key words: Peer reviewed approval, peer review process.

RESUMEN

Este trabajo presenta los problemas relacionados con la revisión por pares de los artículos de investigación; los autores han observado algunos problemas y se han estudiado otros en investigaciones anteriores. El objetivo es identificar y clasificar los problemas y, por consiguiente, proponer futuras investigaciones que continúen con nuestra investigación y que los autores puedan iniciar en el campo de la revisión por pares. El proceso de revisión de los artículos de investigación ha sido investigado y modelado en investigaciones anteriormente publicadas. Sobre la base de la experiencia de los autores, como de colegas revisores expertos en el campo, se han buscado recomendaciones sobre cómo realizar un proceso de revisión. Luego, sobre la base de las entrevistas hechas a colegas que trabajan en la universidad y que tuvieron que realizar la revisión de los artículos, los autores han encontrado problemas relacionados con el proceso de revisión por

pares. A partir de investigaciones anteriores, se identifican y se describen los problemas. Algunos de los problemas encontrados en las investigaciones anteriores coinciden con los problemas hallados en las entrevistas. Como resultado, se presenta una lista de problemas relacionados con el proceso de revisión por pares y el perfil del colega revisor experto en el campo. En conclusión, existen problemas relacionados con el proceso de revisión por pares y con el perfil del colega revisor experto en el campo que no han sido estudiados aún. Todavía no se ha modelado la relación entre los diversos problemas encontrados. Esta investigación presenta una lista de problemas que conducirán a futuros estudios sobre la revisión por pares.

Palabras claves: Aprobación revisada por pares, proceso de revisión por pares.

INTRODUCTION

While being a peer reviewer, and looking for recommendations on how to review a research, the authors of this article found that many problems exist, and have been studied, related to the peer review process. The process demands from the reviewer time and effort, apart from knowledge in the field of the article. The reviewer needs bibliographic resources to verify the references and confirm that there exists a sequence of ideas. Previous studies about the profile of the reviewers have included gender and country of origin, as well as personal characteristics. Age, experience, and current praxis (academic or in the field of work) have been related to the knowledge of the reviewer.

The reviewer works on his own, since to keep his anonymity, he or she may not contact the author, or other reviewers, and this is a job made by one person, not by a committee. Even when there are other reviewers, each of them works on his own. The contact with the editor is limited to accomplish dates, and to give a final answer.

Reviewers are an important part of the organization in every journal, magazine, transaction, and publication. Some figures in table 1 show how many reviewers have been acknowledged by different journals. The journals and years were selected because of their availability through EBSCO.

Table 1
Number of reviewers acknowledged by journals.

Journal	Publisher	Year	Number of re-viewers acknowledged
Journal of Psychiatric and Mental Health Nursing	Blackwell Publishing Limited	2007	191
Journal of Psychiatric and Mental Health Nursing	Blackwell Publishing Limited	2008	286
Journal of Psychiatric and Mental Health Nursing	Blackwell Publishing Limited	2009	158
Multiple Sclerosis Journal	Sage Publications Ltd.	2010	383
Transplant Infectious Disease	Blackwell Publishing Limited	2007	99

Journal	Publisher	Year	Number of re-viewers acknowledged
Transplant Infectious Disease	Blackwell Publishing Limited	2008	126
Transplant Infectious Disease	Blackwell Publishing Limited	2009	187
Zoonoses and Public Health	Blackwell Publishing Limited	2007	177

In the search for a better method of peer review, it is expected to find a sequence of steps to follow. However, these steps exist as a checklist of parts, and even if these parts exist in the article, their presence does not guarantee quality. The steps also remind due dates, but not contents. It is important, therefore, to give reviewers tools to perform their jobs. Some publishers provide tools for reviewers. Elsevier, for example, offers full access to Scopus for 30 days. The peer reviewer can check the bibliographic references or even detect fraud.

This article will give a list of the problems identified. The research question for the article is: What is the relationship among the various problems that a peer reviewer faces? The purpose of this article is to find a series of problems related to the peer review process.

Description of sections

This Introduction section presents the problem to be studied, which is the lack of a list of problems faced by the peer reviewers and

the relationship among these problems. The Problem Background will identify the problem, which has been mentioned and has appeared in previous researches but has not been presented as a model. The Literature Review will find previous studies that mention specific reviewers' problems in an isolated way. The Materials and Methods section is a description of the interviews done by the authors, and the comparison with the literature review. The Results: List of Problems to Be Studied section, presents a list of problems found, when describing the peer review process and the peer reviewer profile. The Discussion section describes the problems found and proposes to model the relationship among all problems.

Description of the Peer Review Process

Before a peer review process, the editor decides if the article title, summary and contents are suitable for the selected journal. The process begins when a potential reviewer, usually an expert in the same research field of the article to be reviewed, receives an electronic invitation

from the editor of a journal, who in turn received a request from an author to publish a research article. The process is monitored by an electronic management system, which will create two links for the potential author, one link for acceptance and one link for refusal of the invitation. If the potential reviewer accepts the invitation, he will be assigned the article, resources for answering, and depending on the journal, resources for accessing databases in order to check the references. A final due date is given; before this date, the reviewer is supposed to read the article, confirm the references, and write an opinion about the achievements of the article. This achievement is related to the new knowledge discovered, the applications of the knowledge and why it is useful.

During the process, the editor may assign resources to the reviewer, such as access to research databases for 30 days. After the 30 days, the reviewer will keep no benefit at all. An administrative resource at operational level is the use of an intranet access, to follow the progress of the review, and to keep partial comments. The reviewer may at any time, after the review is done, revise the work he has done.

The expected result is an accept/reject

answer. An accepted answer may come with recommendations on how to improve the article; the recommendations must be accomplished as a previous condition for the article to be published. However, a rejected answer can give the opportunity of revising and correcting for a second review, or be as extremely definite as a recommendation for any other journal.

So, what is missing? What else does a reviewer need? A series of problems are mentioned in the literature, all of them are described without any relationship to each other. For example, a common problem for reviewers is lack of time, being the reason that they must work in paid jobs. Another problem treated apart is that the review process is not paid. Can a model study the relationship between time devoted by the reviewer and payment received? Abundant articles give recommendations for authors, when their articles are rejected; but recommendations for reviewers, steps for reviewing or a standard reviewing process are not given. A research about the review process needs to be done, updated with the various ways that the editor has to assign papers. A model to relate the various problems encountered is also needed.

PROBLEM BACKGROUND

The process of reviewing research articles has been investigated and modeled in previous published researches, for example Cummings and Rivara (2002); Happell (2011); Lovejoy, Reverson & France (2011). In this

process, research articles with potential to be published, are assigned by editors to selected peer reviewers. Recommendations have been given, for authors and for reviewers. Recommendations for reviewers deal with the

problem of how to review objectively a research. Recommendations for authors are about how to get an approval of the reviewer and of the editor. Some recommendations for authors deal with: Authors' guidelines, download templates, submission, manuscript preparation, review process, copyright, publication ethics statement and article processing charge, if they exist. For example, Cummings and Rivara (2002) presented suggestions on how to respond to comments of editors and reviewers. Happell (2011) focused on dealing with, and responding to, the comments of reviewers. By providing an overview of the process of editorial review, her article offered an approach to responding to reviewers' comments when undertaking major revisions. Otherwise, the alternative for a rejected manuscript is resubmission to another journal. Lovejoy, Reversion and France (2011) published a primer for novice and seasoned reviewers, arguing that most doctoral students and early career professionals receive little formal or informal training in conducting peer reviews.

Cummings & Rivara (2002) also recognized that reviewers are donating their time to improve authors' manuscripts, since reviewers read papers with a fresh eye and offer a chance to improve the work; however, at the end, the authors, not the reviewers, and not even the academic editor, if any, will get the credit for those improvements. Therefore, with the reviewers' suggestions, a question appears: is any recognition to the reviewer necessary?

To give a definition, Kranish (2005) described peer review as "the basic process for checking medical research, in which other researchers judge whether papers meet scientific standards. Under the system of peer review, a researcher submits findings to a journal for publication. Along with a review by editors, the article is sent to several specialists in the field. These reviewers are not paid for their time, their names are usually not published, and their comments usually remain secret. If an academic editor acts to improve the writing, his services are usually requested and paid by the author. Reviewers are usually not allowed to contact the researchers directly to ask questions, and they do not try to replicate the research" (p. 1). Thus, although an objective definition of peer review is given, the definition by Kranish highlights the fact that reviewers are not paid and remain anonymous.

In the search for a definition, description and recommendation to improve the process, problems have been identified from previous studies. As in any process, reviewing research articles is related to a series of problems; many of these problems have been studied and mentioned as follows in the literature review (Goodlee, 2002; Kleinert, 2008; Kranish, 2005).

LITERATURE REVIEW

The initial search for suggestions on how to review an article, has led to identify problems; therefore, it is the intention of this research to describe the existing problems.

Anonymity versus recognition.

Authors have written supporting recognition of reviewers. Finally, the publication is dependent on the contributions of time, expertise and talent from scholars in the field who provide critiques to authors through peer review (Broome, Dougherty, Freda, Kearney & Baggs, 2010). Godlee (2002) is for the recognition of reviewers, and presented four key arguments in favor of open review. Kleinert (2008) reported on the importance of peer reviewers to a scholarly publication, and titled his article “Peer reviewers deserve recognition”. Nevertheless, nothing has been done yet.

Payment.

Kranish (2005) described two cases in which peer review had failed to identify serious flaws in the research. He found that it was almost impossible to discover what had happened in the vetting process, since peer reviewers are unpaid, anonymous, and unaccountable. Moreover, their reviews are kept confidential, making it impossible to know the parameters of the reviews. Kranish reported about suggestions for reviewers to drop their anonymity and allow comments to be published. Also, there is a proposal that peer reviewers be paid to ensure a more even quality of review and analysis among all journals.

Ethics.

Ethical issues have been widely studied by Broome, Dougherty, Freda, Kearney & Baggs (2010), who described the ethical concerns of 1,675 reviewers of nursing journals. They presented six questions about ethical issues, such as conflict of interest, protection of human research participants, plagiarism, duplicate publication, and misrepresentation of data and ‘other’.

Reviewer assignment.

Wang, Shi and Chen (2010) studied the reviewer assignment problem (RAP). They mentioned that limitations of manual assignment exist, and conducted a survey on automatic approaches that appeared in academic literatures. The first stage in any approach, manual or automatic, is the one that attempts to distribute submitted manuscripts to competent referees, called reviewer assignment. The stage is divided into three phases: (i) search reviewer candidates, (ii) compute the degree of match between each manuscript and each reviewer candidate, and (iii) optimize the assignment. The matching degree measures the fitness of a manuscript and a reviewer. The fit is estimated by two criteria: the correlation of reviewer expertise and manuscript topic, and the conflict of interest between them. Kolasa and Krol (2011) analyzed artificial intelligence algorithms to paper reviewer assignment problem. They studied genetic algorithms (GA), ant colony optimization (ACO), and tabu search (TS), and tested the

performance of these algorithms in paper reviewer assignment. Then, they proposed two hybrid methods: the ACO GA and GA TS algorithms, and conducted computational algorithms using different data sets. They showed that the hybrid methods combine efficiently the mentioned algorithms; they are effective and achieve good results.

Reviewers suggested by authors.

Wager, Parkin and Tamber (2006) compared the performance of author's nominated reviewers with editor's chosen reviewers in terms of review quality and recommendations about submissions in an online only medical journal. As a result, they found that reviewer source (author or editor nomination) had no impact on review quality.

Gender.

The problem of differences in editorial board reviewer behavior based on gender was studied by Wing, Benner, Petersen, Newcomb & Scott (2010). They included 6,062 manuscript reviews assigned to male and female editorial board members. They concluded that, although there are differences based on gender of editorial board members' recommendations about manuscript triage, turnaround time, and editors' grades assigned, these differences do not affect editors' decisions about manuscript publication.

Internationalization: Country of origin of the author and of the peer reviewer.

Zhang, Yuan and Jiang (2003) mentioned Katz

(2001), who noted that a criteria for judging a journal as international is carrying out a thorough internationalized peer review programme. The problem was that there were no ready-made international peer review guidelines to follow. Zhang, Yuan and Jiang considered that the absence of an implemented international peer review was a weakness.

Internationalization: Bias due to internationalization.

Bornmann and Daniel (2009) examined the peer review process at the journal *Angewandte Chemie International Edition* for evidence of potential sources of bias. They showed that the number of institutions mentioned in the Acknowledgements of a manuscript, the share of authors having institutional affiliations in Germany, the institutional address of the referee, and 'author suggested a referee for the manuscript' have statistically significant effects on the referees' recommendations. Also, the number of institutions that are mentioned in the Acknowledgements and the share of authors having institutional affiliations in Germany are potential sources of bias in the editors' decisions. However, this study did not go out of the limits of the studied journal.

Causes for results of the review.

In a study by Kearney, Baggs, Broome, Dougherty and Freda (2008), they found, according to various authors, causes for results of the review, which correspond to the profile of the reviewer. These causes were: a) Causes for achieving better quality in the results of the

review: reviewers who were younger (although age is not specified), reviewers working in a university environment, and reviewers with statistics and research expertise gave better quality results in the review process. b) Factors not related to review quality: years of reviewing, academic rank, reviewer gender, degree, years of experience, and being trained in peer review process had no effect on review quality.

Other problems mentioned by Kearney, Baggs, Broome, Dougherty and Freda, under the title Reviewers' Comments on the Worst Aspects of the Reviewer Role, were: a) Time

required, b) reviewing weak manuscripts, c) little compensation or recognition, d) stressful to critique and make judgments, and e) weak papers published despite critique.

In another research, Baggs, Broome, Dougherty, Freda, & Kearney (2008) found that "Nursing journal reviewers are generally very satisfied with double blinding and believe it contributes to the quality of papers published" (p. 131). For Fischer (2010), the best published research involves reviewers performing a value added role in promising research.

MATERIALS AND METHODS

First, the authors of this article mentioned some problems they have had in the past, while being reviewers. Although lack of time has been mentioned as the main problem, the authors feel that in previous assignments they have accomplished their results on time. The second step was given in a project to publish an internal journal at Universidad Wiener; Universidad Wiener was previously described by Un Jan & Contreras (2011). A group of eight university professors were given the duty of reviewing thirty articles that had been previously selected. The review was programmed for October and November 2011. Instructions were given for the review process: the articles had to follow

a structure adopted by the University. When interviewing this group of eight professors about the problems they had, lack of time was the common problem. The review process demanded extra working time, for which the professors were not paid. Although the professors did not ask for an extra payment, they preferred to do extra work in other universities where they were paid. So, the problem of time was finally related to a problem of payment. The third and last step was to compare this short experience with the literature review shown above. A common problem in the first two steps is related to payment. From the two previous steps, the following proposal is presented.

RESULTS

List of problems to be studied

There is no previous classification of problems related to the process of peer review. The literature reviewed shows that when a problem is identified, it is studied individually, without locating the problem in a context of general problems. From the literature review, following problems arise:

- a) A problem mentioned but not studied is anonymity versus recognition of the reviewer. Although reviewers do not ask for recognition in any way, there has been no research to hear their voice.
- b) Another problem mentioned but not studied is the lack of payment for the job of peer review. Kranish (2005) suggested payment, although he did not mean to represent the voice of the reviewers.
- c) Apart from payment, other reward problems are: recognition as reward and, rewards in other material ways, such as discounts for acquiring subscriptions, or even giving free subscriptions (Zhang, 2003).
- d) The country of origin of the peer reviewer is not mentioned in a published article. Country of origin seems to be important: every journal is associated with its country of origin, and every author is also associated with its country of origin, these associations give prestige to the country. Therefore country of origin of peer reviewer should also be mentioned.
- e) The country of origin of peer reviewers is sometimes, but not always, mentioned in the annual acknowledgement of the journals. The country of origin of the peer reviewer can be identified only when the editor mentions it in the acknowledgement at the end of the year, in which case the countries are related to the journal, but not to a single article.

DISCUSSION

This research has found two kinds of problems: Problems related to the peer review process and problems related to the peer reviewer profile. The problems have been identified from previous studies, but they have not been fully studied. The problems found have been studied independently, no cause effect relationship has been applied, and no model has been built to relate the problems. This research concludes with an invitation to study the above mentioned list of problems. The list of problems presented as a classification, will conduct to future studies about peer review.

This research is based on previous experience that the authors of this article have had as reviewers; however, it is the intention of the article to give a more formal research. Problems related to peer review process have been identified. The experience of the authors leads to the search of recommendations about the peer review process; the literature revised shows hints, but also finds new problems. The result highlights a list of problems that must be considered when assigning reviewers.

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