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A brief overview of some crucial ideas associated with research publication

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Abstract

Research is vital to higher education. Higher education is being promoted, and consequently, there certainly is an increase in student enrolments and an elevation in the number of teachers required by universities and other higher educational institutions. Even though the 'system' of higher education is expanding, awareness about some important concepts related to academic research and research publication is still low. It is very important that a modern-day researcher should have awareness of concepts like indexing of journals, journal metrics, open access, peer-review process, peer review scams, predatory publishing, reference management, etc. This article presents a brief overview of some crucial concepts and issues associated with research publication and is aimed at being an introductory guide that can be of some assistance to early career researchers when they begin exploring the landscape of scholarly publication.

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1. Introduction

The system of 'higher education' is gradually getting bigger- universities are expanding, and student enrolments are increasing in multiple countries around the world (Matthews, 2016). Nowadays, teachers and, quite often, students involved in higher education are expected to contribute to high-quality research in their fields. As a result of this increase in the sheer number of people involved in research, a lot of new 'knowledge', through high-quality research, is being created in a very short span of time. This is, for sure, good news but associated with this system of higher education is a bit of bad news too. In India (and probably in many other countries), there is a large section of student- researchers and even young teachers who are just unaware of some basic concepts and some 'must-have' ideas associated with research publication. A recent study conducted on a sample of university teachers in India from various disciplines and various parts of the country concluded that even university teachers have less than the desired level of awareness about important concepts, norms, and regulations associated with research in higher education (Kureethara, 2019). Early career researchers might be good at what they do, but if they don't know and appreciate the importance of something as basic as the concept of 'indexing', then they are much more likely to submit their innovative and brilliant ideas to journals that aren't indexed and end up negatively impacting the 'reach' of their ideas. Similarly, today, student researchers, young academicians, and scientists should also be informed enough to recognize predatory journals with very poor publication practices. There should be an understanding that having an impact factor is surely a mark of quality, but just because a journal does not have an impact factor, it doesn't automatically imply that it's completely fake or predatory. Young inexperienced researchers should know the existence of peer review scams so that they can make wise and informed decisions. The purpose of this article is to highlight some of the most crucial issues associated with research and research publication.

The importance of Indexing

The reach of a research article surely gets reduced or suppressed if it is published in a journal that's not indexed. In this day and age of the internet, if a journal is not a part of an online search system, its chances of success are very slim, and being represented by any indexing service makes sure that a journal is indeed a part of that search system (Dhammi&Haq, 2016). Researchers consider indexes as one of the indicators of 'good quality academic work' and always prefer referencing articles from journals that are indexed (Padula, 2019). Padula (2019), an expert in the area, mentions that if a journal is included in indexes like Web of Science, JSTOR, MEDLINE, etc., then one can be almost certain that it follows some core publishing

standards like having Digital Object Identifiers (DOIs), International Standard Serial Number (ISSN), a fixed publishing schedule, etc. Besides giving an assurance that a journal has some basic standards related to publishing, different indexing agencies have additional requirements for inclusion in their respective indexes like insisting journals to mention the full name and affiliation of their editors, making their peer review policy publicly available, etc. These additional requirements increase the overall standard and indexes with higher standards are seen as more trustworthy by researchers (Padula, 2019). So nowadays, indexing plays a central role in reach and impact of research articles.

Journal metrics

Indexing agencies use certain metrics like Impact Factor, Cite Score, etc. These metrics are mostly means of rating journals and giving researchers an idea of the overall 'quality' of the journals. As a journal metric, Impact Factor (IF) is probably one of the most popular among researchers. In this section, two different journal metrics have been briefly described, starting with Impact Factor. Impact Factor is a product of Clarivate Analytics and is based on the database of Web of Science. If we consider the research reports and reviews of a journal in year one and the next year and get an idea of the citation counts to these contents in the third year and then divide this citation count by the number of research reports and reviews in first and second year, we get IF (Pendlebury, 2009). In some disciplines like those related to medical sciences, rapid citations take place. Natural science and medical science based journals are more likely to have higher IF than Social Science and humanities journals. Even though it is commonly believed that higher IF indicates greater importance of a journal, there is also an understanding among some experts that just the 'number' of citations cannot be the sole parameter for determining journal quality (Walter, Bloch, Hunt & Fisher, 2003). Quality of an article won't be of much importance if it lacks or has little relevance to one's own work, and this, obviously, does play an important role in the selection of references (Aksnes, Langfeldt&Wouters, 2019). Numbers can be an indicator of popularity but whether it really is an indicator of quality is indeed worth pondering over and should impact factor be seen as a direct indicator of the importance of a journal is really a contentious issue in some academic circles. When Cite Score (the other metric that we will briefly see) was launched by Elsevier, some experts in the area saw it as a new metric that can compete with Impact Factor (Courtney, 2017). I, personally, do not see Cite Score as something 'better' or 'worse' than Impact Factor. I will elaborate on my position later in this section, but first, I will briefly introduce Cite Score and mention how an expert (who probably sees Cite Score as a competition of IF) makes a comparison of the two journal metrics.

Cite Score is calculated by first taking into account the number of citations a journal got in three previous years, and then this number is divided by the number of documents published in these three years ("Scholarly Publishing Resources", 2019). Comparing IF and Cite Score Courtney (2017), a research impact expert and a librarian, mentions that:

1. Cite Score can be accessed freely at no cost, while Journal Citation Reports (JCR) –the database for calculating IF, isn't free.
2. The journal list from where cite score is calculated is considerably larger than Web of Science's.
3. More humanities and social science journals are there in Scopus Journal List- the list on which Cite Score is based.
4. Cite Score has a 3-year citation window. Elsevier claims that in 'slower-moving' subject areas, i.e., subjects where rapid citations aren't the norm, two years' worth of data is too short to determine the influence or quality of a journal.
5. Besides regular articles, editorials, letters, or even just abstracts are included while calculating Cite Score. Impact factor, on the other hand, does not take them into account.

The comparison above might indicate that I am slightly biased towards Cite Score. I want to emphasize that I don't have any such bias. Impact Factor (IF), in fact, has helped the research community in a variety of ways for a long time. It has a special place in the research community. Some countries rely on IF to ensure the advancement of knowledge in their countries. Brazil has established a "Qualis" scale based on the average impact factor of their publications, which is used to grade students and faculty, and China offers monetary rewards to editors of different journals, and this distribution of rewards is based on IF (Ferreira, Antoneli&Briones, 2013; Hugget,2012). There are experts who probably would have waited eagerly for the arrival of a formidable competitor of Impact Factor. They have their reasons for it. But my opinion about journal metrics differs slightly both from those who see cite score as their favorite and those who are positively biased towards Impact Factor. Even though I see the arrival of cite score largely as a good thing, but for me, there is no direct comparison and a consequent judgment that cite score is above or below IF. The arrival of cite score means there is another journal metric available, but I cannot claim that IF is better or worse than cite score. For me, these are just metrics, and choosing between them is a subjective decision that depends on a variety of factors (like the subject area, etc.). In my opinion, the primary concern of a modern-day researcher should be the platform where one's ideas (in the form of a research article) have been

presented. Researchers should ensure that the platform provides a good enough reach for their ideas. If a journal X, covering a specific area or field of study, has a high Impact Factor then the conclusion I will draw is that X attracts a lot of good articles in that area, and it will indeed be a great platform to present my work. I will certainly assume that X will be a place where leading experts in the area provide valuable feedback after evaluating a submitted manuscript. But I will not obsess about getting a place in a high IF journal only. If, for some reasons, my ideas do not make it to journal X (with high IF), then looking for other journals would be the next logical step and, in my opinion, as long as the journal I choose next is indexed and provides a decent peer review, its fine for making a submission.

Some Indexing agencies and their policies and practices

The indexing agencies or organizations behind different indexes like Scopus, Ulrich's periodicals directory, CrossRef, etc., have certain policies, and after having a closer look at some of the policies of these organizations, one can become aware of one's responsibilities as well as rights as an author. Even though some of the 'requirements' from prospective authors of these journals can be 'usual' and 'not entirely unexpected' for many researchers, it's still worth glancing over. Elsevier (which manages the SCOPUS database), for example, asks authors to be careful about the selection of research areas and not submit articles that are mundane or redundant (Elsevier, n.d.). It is quite possible that reading up the policies of these indexing agencies can reintroduce one to the importance of giving proper acknowledgment to the work of others. According to Elsevier's policy, meant for editors, a journal should encourage transparency and honest reporting. Elsevier also asks the editor to ensure that peer reviewers and authors have a clear understanding of what is expected from them (Elsevier, n.d.). Another important policy of the indexing agency acknowledges that editorial decisions can be appealed against, and for that, there should be a mechanism or a standard procedure, which should be transparent and unbiased. And similarly, yet another part of the policy cautions the editors against using any unpublished material which was disclosed in the research by someone, artificially increasing any journal metric, etc. (Elsevier, n.d.). Getting a sufficiently accurate idea about what is practiced in editorial offices of the journals indexed by this and other agencies can be beneficial to a lot of researchers.

Peer Review and Peer Review Scams

At the heart of the publication process is peer review. It is the review of a submitted article done by someone who is an expert in the area and generally outside the editorial board of the journal. Peer review assists the editor in making editorial decisions. It also helps the author in improving their paper by providing them constructive criticisms. Peer review is one of the most crucial ways to ensure quality in a publication (Masten& Ashcraft,2016).

The peer review processes these days, unfortunately, are getting affected by peer review scams. Reporting on the issue Ferguson, Marcus &Oransky (2014) described a case where the process of the peer review was so quick that it baffled the editor of a certain journal. This journal, as part of their policy, invites authors to suggest the names of potential reviewers. When the journal followed up the case with that author, they found that this renowned researcher named himself and his close friends to do a peer review of his submissions. Since he or his colleagues did the reviewing, the process took no time to get completed. Acts like these are on the rise, and even very good journals that earlier used to ask authors to name a reviewer are re-examining their peer review policies (Ferguson, Marcus &Oransky, 2014).

Open Access and Predatory journals

Journals require some resources to run. To keep publishing, they need to take care of the editorial and peer review costs. Traditionally, the publishers have had all the rights to the articles in their journals, and anyone who wants to use any article from the journal must obtain permission and/or pay some fees before it can be accessed (PLOS, n.d). Earlier, if one wanted an article from a journal, it simply implied that a person is in need of a copy that had to be printed and hence earlier, individuals were expected to pay printing costs too, but in this day and age of internet and online distribution, printing costs are not much relevant.

Today we have open access journals that help disseminate knowledge freely. These journals generally provide free and immediate access to readers almost anywhere in the world, and most don't put restrictions on the reuse of the contents of the journal. But these journals run their businesses by charging the researchers who wish to publish their works (Conte, n.d.). Generally called Article Processing Charges (APC), these charges can be as high as $5000 (Conte, n.d). There are open access journals that charge much less, but the cost of publishing in these journals is one of the most vital factors that influence the decision of a researcher to go ahead with it. There is no doubt that publication in these journals increases the reach of an article enormously because prospective readers have to pay nothing to access them.

The 'author-pays' model of open access publishing is, unfortunately, being exploited nowadays by some publishers. Beall (2012) calls the journals released by these publishers as 'predatory'. Publishers of these

journals are, quite simply, dishonest and just aim to make money by charging very heavy publication fees. They will accept articles with very questionable content and often have no peer review at all or a very improper one (Memon, 2019). Beall (2012) believes that because of growth of these types of journals genuine researchers and legitimate journals suffer the most. For researchers, especially the less experienced ones, getting their articles published in journals like these won't be much of a successful step towards expanding the reach of their ideas. And the 'good' journals now face a new kind of unhealthy trend in the publication business because of rise in unethical publication houses. When there are questionable publication houses in the market which offer a very small submission to publication time then for the 'good' journals, to stay in competition in this new market, the pressure to give prospective authors a much smaller submission to publication time only increases and this can negatively affect the whole peer review culture and might lead to creeping-in of some unethical practices even in 'good' quality journals (Beall, 2012).

Although Beall's list has been helpful to many researchers, it has been controversial and is not considered the final word when addressing the issue of ethics in research and questionable publication practices (Berger &Cirasella, 2015). The usage of the term 'predatory' has been especially criticized. It has been questioned that what exactly constitutes predatory behaviour in the publishing business. The word predatory actually covers a very broad spectrum of publication practices. At one end of this continuum are the less experienced and amateurish publication houses where younger, less experienced, but genuine scholars might submit their work. Probably the reviewers of these journals might not have the record of being rank holders of the universities they finished their degrees from, and they might not be ranked among the top twenty experts in the world in that field of study, but they still have good knowledge of the subject they will review. These publication venues can, at the most, be called low quality, but they don't have an intention to deceive. At the other end of this spectrum is a publishing house that deliberately misleads authors to make money and is not interested in the dissemination of knowledge of any kind (Berger, 2017). Probably in this kind of journal, no review at all might happen. Clubbing both of these types of journals or publication venues under the common term predatory is not an accurate description of things. Moreover, a large number of publication houses considered 'predatory' by Beall come from developing countries and some researchers feel that this might be because of a bias against non-western editorial boards (Emery, 2012). Furthur, Berger and Cirasella (2015) believe that Jeffrey Beall doesn't have a very supportive view of the Open Access system itself. So Beall's list and the word predatory do have some significant criticisms that a modern researcher must know before making a strong conclusion and judging a journal.

Reference Management and Unique Identifiers

Any discussion of important concepts related to research publication will be incomplete without discussing reference management and unique identifiers. It will be an understatement to say that these concepts play significant roles in the universe of modern research publications. There was a time when references were simply written on small cards and stored in boxes (Fenner, Scheliga&Bartling, 2014). Reference management has come a long way since then. Reference managers are software packages that don't just allow all the scholarly publications relevant to one's work to be stored and managed digitally, but modern reference managers also do things like allowing retrieval of all kinds of citation-related information from online bibliographic databases (like SCOPUS), working together with word processing software(like MS Word) for easier and quicker in-text citation, sharing of reference information and provision of collaborative editing to all members of a small group of researchers working together on a single topic, etc. Reference managers rely on standard metadata formats like BibTeX and RIS. Almost all reference managers support one or both these formats and so switching from one reference manager to another is quite convenient. More importantly, making a backup of the reference list, which is totally independent of the reference manager software package one is currently using, is also possible. There are a lot of reference managers available today. The list includes EndNote, Mendeley, Zotero, RefWorks, CiteULike, etc. Mendeley is owned by Elsevier, and one of its remarkable features is the ease with which it can manage PDF files. Once a relevant PDF file gets imported into Mendeley, information like authors, title, etc., can be easily extracted by the reference manager. Another special feature of Mendeley is the recommendation of research papers to authors. This function is more or less similar to what an online shopping platform like Amazon does. On Amazon, often after buying a product X, a customer gets a notification that people who bought X also purchased Y. The recommendation system of Mendeley is somewhat similar. Other reference managers mentioned before (Zotero, EndNote, etc.) have their own set of special features, and no one is 'above' or ' better' than another. The choice of reference manager depends on the researcher. I have chosen to describe some features of Mendeley just to elaborate a point that modern reference management software packages are indeed helpful to researchers.

Unique identifier is another crucial concept that people involved in research should know and appreciate. Getting discovered in the sea of research publications is a challenge for any young researcher nowadays. The most common way, obviously, to identify someone is by his/her name, and traditionally researchers have

been identified in the same way (Fenner&Haak, 2014). But this identification system is not reliable. Some names are very popular, and many people do change names (for example, often after marriage). Relying on an identification system based solely on names is not a good idea when decisions regarding grants and promotions are to be taken. A counter-argument can be made here that most interactions between researchers, nowadays, take place by simple online tools like email, videoconferencing, and other social media platforms, and emails do have a unique username, and so what's the need for an additional identifier. The concept being presented here is of a standard identifier which is widely recognized and used by different researchers, academic institutions, publishers, etc., and which connects the researcher with her/his work. Open researcher & Contributor ID (ORCID) is one such concept. The identifier is interdisciplinary and is not restricted to only one or a few disciplines. It's also not limited to any geographical area. When all research output –papers, monographs, books, data, etc. gets linked to a certain ORCID iD then not only identifying individual researchers in a more reliable way becomes possible, but it also saves valuable time of researchers as they do not have to spend hours on administrative activities. The usefulness of ORCID iD can be better understood in situations when one is required to properly communicate to a funder and is expected to be very careful when making a list of all relevant publications of any institution. Getting this unique digital identifier is absolutely free.

Conclusion

The purpose of this article is to provide a brief overview of some of the most crucial concepts and issues associated with research publication. The world of research and research publication is a busy place these days. A lot of researchers are regularly presenting their ideas on appropriate platforms and are contributing to the generation of a lot of 'knowledge' very quickly. But before venturing out in this world and ensuring that their remarkable work finds a suitable venue, a young researcher should acquaint herself or himself with some ideas and issues. The first among them is indexing. Indexing ensures that a journal is part of an online search system and is indeed discoverable. The quality or 'attractiveness' of an indexed journal is generally indicated by a metric like Impact Factor or Cite Score (or some other metric). Peer review is a very important part of the overall publication process and is the best source of constructive criticism. These days peer review scams do happen, and researchers should watch out for that. Open access journals ensure free access to almost anybody, but they ask authors to pay heavier fees. The author-pays model can sometimes be a way to dupe researchers, and this is how a predatory journal runs its unethical business. The article closes with a short description of reference management packages and unique identifiers.

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