

Challenges Facing Modern Academia: Perils, Pitfalls and Future Promises

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As we celebrate ten years of publishing the New Zealand Medical Student Journal, with the first issue released in March 2004, we would like to reflect upon some of the difficulties that face modern academic publishing.

PUBLICATION BIAS

Positive or statistically significant results are more likely to be published than studies reporting negative results, giving us a false impression of the true effect of interventions by over-representing the positive or negative effects of drugs and interventions, while many of the studies showing no-effect are hidden. Publication bias creates a systematic and often deliberate difference between what we know and what we don't know.

PAYWALLS IN ACADEMIA

A paywall is a system that prevents users from accessing articles online without a paid subscription to that journal, or without paying a fee for use of that article. This limits access to research to those who can afford it. Supporters of this model say it maintains quality in academic publishing, however, authors are not paid for their submission, and in fact they can incur quite heavy costs during the process. Large publishers control hundreds or even a few thousand different academic journals.

"PUBLISH OR PERISH"

This is a phrase that describes the pressure in academia to rapidly and continuously publish academic work. Publishing demonstrates productivity and helps disseminate ideas to the wider community of academics. Ranking of research institutions and resource allocation to them can be based on their output. Although the number of publications has merit as a tool for evaluation, it fails to measure other important contributions such as teaching, mentoring and services to the public. Excessive focus on publications alone can also be counterproductive, with less time for in-depth analysis, leading to fewer high-quality publications and more 'noise'.

REPRODUCIBILITY

This refers to the ability of an experiment to be replicated independently and accurately, producing the same result. It is an important principle of the scientific method that tests the validity of results. Although it has long been discussed, recent concerns have been raised about the degree of reproducibility of laboratory research and how this is impacting further studies using them as a basis.

IMPACT FACTOR

Does good science have a value? The impact factor of a journal shows the average number of citations per paper published in that journal over two years, and is often used to gauge the influence of a journal in its field. It has become a convenient though potentially

misleading measure of a journal's 'importance'. This problem is made worse when individual papers or researchers are assessed based on the impact factor of the journal they publish in.

On a positive note, the world of academic publishing is undergoing a major change in its structure. Increased digitisation and increased journal subscription prices have fuelled the open access moment, which aims to make the dissemination of already publicly funded research freely available to other researchers and to the public, as well as promoting free re-use rights. In particular, the last decade saw a rapid growth in the number of open access articles and open access journals.

As we become part of an increasingly scientific profession, it is vital that we familiarise ourselves with the strengths and shortcomings of the research enterprise which continues to shape modern medicine. With that, we hope that you will enjoy this special issue and invite you to write to us with your thoughts and comments. We would like to express our heartfelt gratitude to Associate Professor Stewart Mann, Associate Professor Peter Larsen, Dr Andrew Smith, Dr Stephen Ritchie and Dr Anthony Jordan for their input and expert opinion on the scientific content of this issue. Finally, we would like to acknowledge the year-long effort of the 2013 Editorial Team, whose content has been partly incorporated into this issue.

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FURTHER READING

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