

## Can We Judge High Quality Scholarship?

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Scholarly activity has become an essential component in the careers of most optometric faculty and can be vital in career advancement, but evaluating scholarship can be a formidable task. Faculty and promotion review boards are faced with the difficult challenge of demonstrating or judging the quality and impact of scholarship. Faculty often employ

qualitative measures, such as external review by an expert or colleague peer-review, to help establish the quality of scholarship with promotion review boards. Scholarly activity can be broadly defined to include the discovery, integration, application and teaching of knowledge.<sup>1</sup> The knowledge becomes scholarship when it is assessed by peers and made public.<sup>2</sup> The process of dissemination most often involves the publication of scholarship and the peer-review system.

The peer-review process is one standard for establishing the quality of scholarship. Scholarship is reviewed, critiqued and judged by experts in the field before acceptance for publication. Overall the process works well to ensure high quality publications. However, the peer-review process is not foolproof and all reviewers may not share equitably in the time, talent or motivation needed to accomplish an unblemished process.

There are a number of metrics dedicated to evaluating scholarship. Research into these metrics can be overwhelming and confusing. Each method has a specific purpose with limitations impacting usefulness and accuracy. Any method based on citation counts has inherent weaknesses. These weaknesses include content of the database (e.g., quantity and type of journals indexed, inclusion of conferences) and self-citations and context of citations (e.g., citations in editorials, letters to the editor). Impact factor, h-index and

altmetrics are commonly used methods of judging journals and scholarship and are discussed here to provide readers with some insight and baseline knowledge.

Impact factor, as reported by the Web of Science, is a “measure of the frequency with which the ‘average article’ in a journal has been cited in a particular year or period ... Thus, the impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years.”<sup>3</sup> Impact factor cannot be used as a measure for an individual manuscript. It is often inferred that publishing in a high impact journal is an indication of a high quality paper. This is flawed thinking because it is based on an assumption that high impact journals only accept high quality manuscripts. Because impact factor reflects an average, a small number of highly cited papers can skew the data and contribute to a high impact factor. Journal policy can also influence impact factor. Journals that favor review articles, which are more frequently cited than research articles, can have artificially high impact factors.<sup>3</sup> Additionally, there is controversy about whether impact factors can be independently reproduced.<sup>4</sup> In addition to impact factor, other metrics, such as acceptance rate, immediacy index, cited half-life, aggregate impact factor, source normalized impact per paper and Eigenfactor, are applied to journals.

What metrics are available for judging individual scholarship? The h-index, sometimes called the Hirsch index or number, was created by Jorge Hirsch and has been in use since 2005. H-index is used to measure the quantity and quality of an individual’s work.<sup>5</sup> The index is based on an individual’s most cited papers and the numbers of citations the papers have produced.<sup>5</sup> Although this method takes into account both quality and quantity of an individual’s work, it is not without criticism. The database used to identify and tally total publications and citations can impact and vary

the final h-index.<sup>6</sup> Therefore, for example, the h-index calculated from Scopus vs. Web of Knowledge may be different. The h-index can be used within a discipline but not across disciplines.<sup>7</sup> My research revealed that h-index values are prevalent in the sciences, and baselines for comparisons can be found in the literature. However, h-indexes are not as prevalent in the healthcare fields, and baselines may be difficult to find. Because the h-index involves number of publications, its usefulness can be limited in the earlier years of a career or a short career.

The growing use of technology and changing times has influenced the development of a new set of tools for evaluation, known as altmetrics, which can be used to judge journals or individual scholarship. Altmetrics can include the number of times an article was viewed, downloaded, bookmarked or cited. The use of altmetrics for determining quality of publications is still new and controversial. Altmetrics may only demonstrate engagement rather than true quality or impact. For instance, a controversial paper may have many tweets but demonstrate low quality or little impact in science or medicine.

Faculty members and promotion review boards face a difficult task when assessing promotion information. It is apparent to me that accurate, reliable and fair judgement of scholarship, especially when that scholarship is outside an individual's area of expertise, is a challenging task. Judging scholarship by using several metrics may prove to be the most beneficial method. Even though the assessment of scholarship remains challenging, the goal of faculty should be a consistent pattern of high quality scholarship.

## References

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