

Guidelines for assessment of publications for contribution to scholarship: A view point

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Summary

Background: There does not seem to be a uniform method of assessment for promotion in the various tertiary institutions in Nigeria. The result of this is that a professor in one institution may just qualify to be a senior lecturer in another in the same country. An attempt is being made in this write-up to devise a method of standardization for promotion in tertiary institutions in Nigeria.

Method: Literature dealing with peer review process, writing clinical research papers, and assessment were reviewed. Also various methods of assessment for promotion in some tertiary institutions were studied.

Results: There are six areas of assessment of the publications of a candidate for academic promotion. They are (a) the quality of the journal where the article were published; (b) the type of research; (c) the scientific quality of the paper; (d) the relevance of the paper to the author's discipline; (e) the numerical position of the authorship of the candidate being assessed; (f) and the number of publications.

Conclusion: Having a clear-cut and more objective way of grading a prospective candidate will ensure uniformity, allow the candidate to work realistically towards a goal and to aim high, reduce subjective assessment, reduce the chances of injustice, and encourage non-indexed local journals to aspire to get indexed or die a natural death.

Key-words: Uniform assessment, Standardization, Promotion, Tertiary, Institution.

Résumé

Introduction: Il paraît qu'il n'y a pas une méthode uniforme pour une évaluation afin d'assurer un avancement des institutions tertiaires diverses au Nigéria. A la suite de cette observation, un Professeur de faculté dans une institution peut être simplement accepté comme maître de conférence dans une autre dans le même pays. Il s'agit d'un effort à travers cet article, d'imaginer une méthode de uniformisation pour l'avancement des institutions tertiaires au Nigéria.

Méthode: La littérature qui traite le processus du bilan du pair, composition des recherches, et évaluation ont été passés en revue. Et aussi des méthodes d'évaluation pour un avancement dans quelques institutions tertiaires ont été étudiées.

Résultats: Il y a six niveaux d'évaluation de la communication d'un candidat pour un avancement académique. Ils sont les suivants: (a) La qualité du journal à travers lequel cet article est publié (b) Le genre du recherche, (c) La qualité scientifique de cet exposé, (d) La pertinence de cet exposé par rapport à la discipline de l'auteur (e) L'état numérique de la paternité du candidat dont il s'agit, (f) et la quantité de la publication.

Conclusion: Si on arrive à avoir un moyen plus objectif et bien défini pour évaluer un exposé d'un candidat potentiél,

ceci va assurer une uniformité et va permettre au candidate de travailler avec réalisme vers un but et provoquer son ambition, réduire une évaluation subjective, réduire le risque d'injustice, et encourager les journaux locaux non-indexés à aspirer d'être indexé ou bien avoir une mort naturelle.

Introduction

Publications of manuscripts can be traced back to after the Renaissance when scientists began exchanging letters about their work.^{1,2,3} So in actual fact, the idea of academic publishing is to disseminate knowledge, to improve patients' care and to correct previously unknown errors in treatment. Any academic who is doing this therefore deserves to be compensated in form of promotion. Unfortunately, in academic circle this has been reversed. Academics now publish to get promoted, and not necessarily to disseminate knowledge. The results of this philosophy are disputable and unscientific articles appearing in non-indexed journals of questionable standards.

Infact, it is well known that a group of academics can start a journal over-night in their department to publish all their articles of questionable scientific value just to have publications for promotion exercises, and not for the sake of disseminating knowledge. In many such cases, as soon as they achieved their objectives, and the promotion exercises have been completed, such journals disappear from circulation.

To forestall this practice, many international indexers have strict guidelines before a journal is indexed.⁴ Therefore for practical purposes, articles in non-indexed journals are usually not rated as papers of serious scientific value, even though many good articles have been seen in non-indexed journals.⁵ As a matter of fact, many highly rated international journals do not accept citations from non-indexed journals.

Our formal education in the universities does very little to prepare us for assessment of publications for promotion. Therefore, when confronted with this, we act by intuition, and by our own personal experiences, hoping for the best! But this produces a non-uniform cadre of Professors, Readers, and Senior Lecturers even in the same community! A Professor in one university may rate only as a Senior Lecturer academically in another university.

This paper, therefore attempts to devise a method of assessing publications for promotion in tertiary institutions.

Parameters to consider for scoring

There are essentially six aspects of publications that require evaluation: They are (a) the quality of the journal where the article is published; (b) the type of research; (c) the scientific quality of the paper; (d) the relevance to the author's discipline; (e) the numerical position of the authorship of the candidate being assessed; (f) and the number of publications.

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(a) The quality of the journals where the articles are published

The Impact Factors (IF) are widely used to rank and evaluate journals.^{6,7} Impact Factors as defined by Garfield are the "ratios obtained from dividing citations received in one year by papers published in the two previous years. Thus the 1995 impact factor counts the citations in 1995 journals issues to "items" published in 1993 and 1994".⁶ Smith⁸ mentioned that IF "is calculated by dividing the number of citations of papers in the journal by the number of papers that could be cited. Also Seglen⁷ clarified it further "the recorded number of citations within a certain year (for example 1996) to the items published in the journal during the two preceding years (1995 and 1994) divided by the number of such items (this would be the equivalent of the average citation rate of an item during the first and second calendar year after the year of publication." He also mentioned that "the Science Citation Index database includes only normal articles, notes and reviews in the denominator as citable items, but records citations to all types of documents (editorials, Letters, Meeting abstracts, etc.) in the numerator...".⁷ However, evaluating a journal on the basis of Impact Factor (IF) has certain flaw because as Garfield⁶ pointed out this "simply reflects the ability of journals and editors to attract the best paper available."

The Impact Factors of many journals used by the academics in Africa have not been determined, therefore this cannot be used at present to assess journals. To rate the journals therefore, we have used the following: International Indexed journals = 5; Local Indexed journals = 4; Others non-indexed journals = 1.

To award a score, if we assume that the candidate (whom we shall refer to as Dr. Acada for this presentation) has a total of accepted 26 valid publications, with 5 in International Indexed journals; 10 in Local Indexed journals and the remaining 11 in Local non-indexed journals, his score will be calculated as follows:

$$(5 \times 5) + (4 \times 10) + (11 \times 1) = 76.$$

Total score obtainable if all his publications were in international indexed journals will be $(26 \times 5) = 130$.

The score for Mr. Acada in this section will be $76/130 \times 100 = 58.5\%$

However for the same 26 publications, if the distribution is as follows: 10 in international indexed journal; 5 in local indexed journals and 11 in non-indexed local journals; then using the same criteria his score will be $(10 \times 5) + (5 \times 4) + (11 \times 1) = 81/130 \times 100 = 62.3\%$

To get a cut-off point of about 70% with this 26 publications, Dr. Acada has to have something like this: 9 in international indexed journals; 10 in local indexed journals and 7 in non-indexed journal. This will give a score of $45 + 40 + 7 = 92/130 \times 100 = 70.8\%$

The numbers of publications do not really matter much here if they are not in indexed journals. In fact, it is actually a disadvantage to the candidate to present many articles in local non-indexed journals, as shown by this example:

If Dr. Acada has 35 publications distributed as follows: 5 in international indexed journals; 5 in international indexed journals; 5 in local indexed journals and remaining 25 in local

non-indexed journals; his score will be as follows: $(5 \times 5) + (5 \times 4) + (25 \times 1) = 70/(35 \times 5) \times 100 = 40\%$

(b) The type of research

In the medical and biomedical settings various research studies can also be evaluated and scored.^{9, 10} These can be grouped into five categories: (i) animal and laboratory studies with controls, clinical trials, intervention studies, and prospective studies (5 marks); (ii) cross sectional analysis, retrospective cohort, case-control, nested case-control, and epidemic investigations (4 marks); (iii) case reports, chapters in books, books, and review articles (3 marks) (iv) articles on medical education (2); (v) letters to the editor, technical reports, proceedings, and brief reports (1 mark).

If Dr. Acada has 8 prospective studies, 12 retrospective studies, 5 case reports, and 1 technical report, his score will be $(8 \times 5) + (12 \times 4) + (5 \times 3) + (1 \times 1) = 104$.

Total score obtainable from his 26 publication is $(26 \times 5) = 130$

The score Mr. Acada obtained in this section therefore will be $104 / 130 \times 100 = 80.0\%$

Therefore the more work the candidate does in (i) and (ii), the higher the score in this section.

(c) The scientific quality of the research

This assessment is subjective and is dependent on the assessor^{11,12} But it is not totally arbitrary since the assessor is usually an expert in the candidate's field of specialization. The scientific quality of the article is scored as follows: Excellent 5; Very Good 4; Good 3; Fair 2; Poor 1.

If Dr. Acada has 3 Very Good; 6 Good; 11 Fair and 6 Poor articles, his score will be $(3 \times 4) + (6 \times 3) + (11 \times 2) + (6 \times 1) = 58$

Total score obtainable from his 26 publications if all are Excellent is $(26 \times 5) = 130$

The Score Dr. Acada obtained in this section therefore will be $58/130 \times 100 = 44.6\%$

(d) The relevance of the publications to the discipline

This should not create any problem because usually the area of specialization of the candidate is always clear-cut. Occasionally however, the candidate may wander to an area that is peripheral to the discipline, or different from the discipline. This occurs more often than not when the candidate is the fifth or fourth author of the publication. This can be scored as follows: Relevant to the discipline 5; Peripherally relevant 3, Not relevant to the discipline 0.

If Dr. Acada has 22 relevant publications; 2 peripherally relevant publications and 2 not relevant publications; his score will be as follows:

$$(22 \times 5) + (2 \times 3) + (2 \times 0) = 116.$$

Total score obtainable if all the 26 papers are relevant = $(26 \times 5) = 130$

The score Dr. Acada obtained in this section therefore will be $116 / 130 \times 100 = 89.3\%$

(e) The numerical position of authorship in the publications

In many publications, the first author is usually regarded as the leader of the team and usually contributes most to the

publication. The further the position of the author the smaller is the contribution to the manuscript, except on rare occasions. Therefore on the basis of this assumption the numerical position for authorship can be graded as follows: First Author 5; Second Author 3; Third Author 2; Others 1 point each.

If Dr. Acada is the First author in 12; second author in 10; and fourth author in 4, his score will be $(12 \times 5) + (10 \times 3) + (4 \times 1) = 94$

Total score obtainable from his 26 publications if he were the first author in all will be $(26 \times 5) = 130$

The score Dr. Acada obtained in this section therefore will be $94 / 130 \times 100 = 72.3\%$

(f) Grading by the number of publications

The upper limit of numbers to be used for calculation in this section can be worked out as follows: when a candidate is employed as lecturer grade 1 he or she usually has 3 - 5 publications (at least 3) at the time of employment. It takes at least 3 years for such a candidate to be considered for promotion to the grade of a senior lecturer. Assuming he has 4 publications every year, his total number as a senior lecturer will be 15 publications. It takes another 3 years at least to be considered for promotion to the grade of a Reader. Thus the 4 publications per year can be extrapolated from senior lecturer to Reader to give 27 publications. Promotion from the grade of a reader to that of a professor is at least a period of 3 years. Using the same criterion of 4 publications per year, the upper limit of number for calculation for professorship will be 39 publications.

Therefore the calculations in this section will be as follows:

For the grade of Senior Lecturer 15 articles are regarded as the upper limit for calculation. So, if a candidate for that post has 8 publications, his score in this section will be $(8 / 15 \times 100) = 53.3\%$

For the grade of a Reader 27 articles are regarded as the upper limit for calculation. So, if the candidate has 26 publications (like Dr. Acada) his score will be $(26/27 \times 100) = 96.3\%$

For the grade of a professor 39 articles are regarded as the upper limit for calculation. So, if the candidate has 26 articles (like Dr. Acada) his score will be $(26/39 \times 100) = 66.7\%$

It is obvious from here that in this section Dr. Acada with his 26 publications is qualified to be a reader (96.3%), but not qualified to be a professor (66.7%).

Discussion

The fate of Dr. Acada will now be determined by the average of all the scores. If the application is for the grade of a Reader, the score will be as follows: $(58.5 + 80.0 + 44.6 + 89.3 + 72.3 + 96.3)/6 = 73.5\%$

But if the application is for professorship, then the score will be as follows: $(58.5 + 80.0 + 44.6 + 89.3 + 72.3 + 66.7)/6 = 68.6\%$

Taking 70% as the pass mark, these scores show that Dr. Acada is qualified to be promoted to the grade of a Reader, but not qualified to be promoted to the grade of a professor. The main difference here is in the number of publications.

All the six areas of assessment considered here are based

on the assumption that they all have equal weighting for assessment exercise. Ideally articles in non-indexed journals should not be scored because it is doubtful if such articles can stand up to scrutiny in a court of law. But in this paper non-indexed journals are scored one mark for the purpose of giving every journal a score, but the scoring is weighed in favour of journals that can readily disseminate knowledge because they are indexed. Also, in this exercise the journals are scored based on where published and whether indexed or not. This is not without some flaws. Ideally, it would have been nice to classify the journals as excellent (5), very good (4), good (3), fair (2) poor (1) and non-indexed (0). But without the impact factors of the journals, this may not be possible. It will most likely depend on the impressions of the assessor. But even with the impact factors available, this may even be considered as arbitrary because as Garfield⁶ pointed out it «...simply reflects the ability of journals and editors to attract the best paper available.»

In considering publications for assessment, not all listed publications in the curriculum vitae may merit consideration.^{14, 15, 16} Duplications, articles with no acceptance letter, or letter of acceptance more than 2 years without publication should not be considered valid. Also articles with only letters of submission, acknowledgement, or correction are not considered valid. Articles that have no bearing to the discipline of the candidate are also not considered valid publications.

In this exercise, authorship position was scored accordingly. However, some experts who have dealt with many academic assessment and promotion,^{17, 18} feel that numerical position of authorship may not be relevant¹⁸, and what is important is the contribution of each author to the planning of the project, and actual execution of the project. It is felt that multi-disciplinary research is now the norm especially in the discipline of science. The problem here is how to quantify the various contributions of each participant in the research project.

Books and chapters in books are treated as research articles and also graded as such.

We have awarded marks to case reports and letters to the editor in this exercise because it is not the title or the length of a research paper that is important, it is the content of the paper. Glen Davis' case report on Parkinson's disease made great contribution to the understanding of the disease^{3, 5} Also, the article by J. D. Watson and F. H. Crick on the structure of DNA for which they won a Nobel Prize, and which appeared in Nature in 1953, occupied just over half a printed page.^{3, 5, 13}

The term Associate Professor is a misnomer in the context that is being used in some institutions. It is appropriate in the American university system where there are three levels of promotion: Assistant Professor, Associate Professor and Professor. In the system similar to that of the British universities there are four levels of promotion: Lecturer, Senior Lecturer, Reader (not Associate Professor) and Professor.

The average of all the scores in the six sections will give the overall score of the candidate, and anyone with a score of 70% and above is considered successful.

Conclusion

Assessing academics for promotion has very little clear-cut guidelines. But for the sake of uniformity some sort of universally accepted formula is necessary in a community. Having a clear-cut and more objective way of grading a prospective candidate will ensure uniformity, allow the candidate to work realistically towards a goal, and to aim high. It will also reduce subjectivity in assessment, reduce the chances of injustice, and encourage non-indexed journals to get indexed or to die a natural death.

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