



How to successfully list a journal in the Social Science Citation Index or Science Citation Index Expanded

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Is the *Korean Journal of Medical Education* eligible to be indexed in the Social Science Citation Index (SSCI) or the Science Citation Index Expanded (SCIE)? How does an editor prepare for application? Although Clarivate Analytics (formerly Thomson Reuters) has disclosed its selection criteria, the quantitative criteria are not clearly expressed, such as the relative value of the impact factor, total number of citations, multiple nationalities of authors, and multiple nationalities of editorial board members [1]. Of all of the items to be considered during the selection process, the uniqueness of the aims and scope is the most difficult item for the journal editor to prepare for the application. Although a journal's competency might fulfill all of the other criteria, the uniqueness or novelty of its aims and scope is the most difficult item to clearly and concisely explain because specific manuscripts might be submitted to at least one journal already indexed in the SSCI or SCIE. Therefore, I suggest a relatively more quantitative checklist for the self-evaluation of journals that apply to the SSCI or

SCIE, based on the Clarivate Analytics' journal selection process and the reasons for rejection received by numerous editors (Appendix 1). Then, I assess the status of the *Korean Journal of Medical Education* to determine its eligibility as a SSCI or SCIE journal.

Why is a journal rejected?

The most common reasons that Clarivate Analytics rejects a journal are as follows. (1) It lacks multiple nationalities among authors. Furthermore, there is too large of a proportion of authors from one country. (2) It lacks multiple nationalities among editorial board members. (3) It has low numbers of citations. (4) The aims and scope are not unique enough or do not clearly fit into a niche compared to journals that are already indexed.

Other comments dispatched to the editors were as follows. (1) There was an insufficient number of articles

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supported by research grants. (2) There were too many editorial board members' articles in a single issue. (3) There were too many articles by one author in a single issue. (4) There were too many non-citable articles. (5) The period from submission to publication was too long. (6) The number of articles per year was less than 20. (7) Research and publication ethics were inadequate; there was no informed consent for identifiable photographs. (8) There was a sufficient number of journals of the same type and from same region.

A journal's self-evaluation checklist for application to SSCI or SCIE

Appendix 1 provides a checklist of suggested criteria, except for the first item, which is required. Clarivate Analytics has not stated the precise values of each item, and the values might relate to a journal's category. The precise values of the selection criteria are difficult for journal editors to assess when they are preparing to apply to the SSCI or SCIE. Therefore, Appendix 1 provides general guidelines for editors to assess their journals' eligibility using journal metrics. All of the quantitative and descriptive items might be improved to reach the highest level, except for the journal's uniqueness. Therefore, a journal's uniqueness in its field, niche, and its geographic characteristics should be stressed in its aims and scope.

1. Explanations of the items

1) The journal has been published regularly for at least three issues

Online-only journals have been published continuously for at least 9 months with at least one article per month and at least 20 articles per year. This is a minimum requirement for selection, and it is information

disclosed without ambiguity.

2) The peer-review system is concrete to guarantee scientific integrity

This item concerns the quality of individual articles. There should be scientific presentation of the research results, which must include clear and concise goals or assumptions of hypotheses, correctly chosen and applied statistical analyses, reasonable and logical interpretations of results, and conclusions based on the purpose and results. Moreover, the results must be reproducible. Editors should do their best to screen for the minimum quality in the submitted manuscripts. There should be no research or publication misconduct. If the peer review system is not thorough, scientific integrity cannot be accomplished. To meet this criterion, I suggest that editors adopt open data policies [2]. If raw or processed data were open, the reviewers and readers would be able to easily assess reproducibility using the same methodology.

3) The period from submission to publication is less than 1 year

When a peer review system is efficient, review and decision on a manuscript is quickly completed with rapid interaction with the submitters. Sometimes, determinations on case reports are delayed because of a large volume of manuscripts. I recommend publication of every article as an "epub ahead of print" upon their acceptance. This approach would be likely to satisfy authors and readers as the fulfillment of the rapid publication process.

4) The proportion of articles written by editorial board members as corresponding authors is less than 0.40

When the proportion of articles written by editorial board members is too high, the peer review system could be doubted. Of course, a journal's editorial board members are its most important contributors and

reviewers. However, articles written by board members should be limited to a certain proportion to provide sufficient publication opportunities to a variety of researchers around the world. The above-stated proportion is a suggestion because it is difficult to know the precise criterion across journals.

5) The proportion of articles in one issue written by the same author is less than 0.30

It is not desirable for any journal to be dominated by one researcher or his or her group. This phenomenon might occur when the number of submissions is small and one researcher or his or her group submits manuscripts to vitalize the journal. Editors should take leadership roles in recruiting manuscripts from numerous researchers in the relevant fields. The above-stated proportion is a suggestion.

6) The proportion of the non-citable articles is less than 0.20

Regarding the impact factor, some manuscripts are treated as non-citable articles, such as those that have many images. It is best when citable articles dominate a journal. The above-stated proportion is a suggestion.

7) The references are formatted exactly as stipulated in the instructions to authors

SSCI and SCIE are citation databases with precisely accurate information on references. When reference lists include errors, the journal is evaluated as poorly edited. Therefore, manuscript editing and/or copyediting is mandatory to achieve accurate reference lists. I recommend that editors employ manuscript editors or request to professional manuscript editing company. In Korea, there is the Korea Manuscript Editors Certification system, and editors can employ trained professional manuscript editors who hold the Certificate [3].

8) The proportion of research articles supported by research funds is at least 0.10

Funded studies have been evaluated and screened by

their funding agencies; therefore, they might be better designed and more scientifically integrated than studies that are not funded. Many authors who submit their papers to clinical journals find it difficult to obtain funding, which is the reason that the suggested proportion is only 0.10.

9) The journal meets research and publication ethical standards

The scope of research and publication ethics is broad, which makes it difficult to identify the core aspects of ethical standards. I suggest the following action plan.

a. The following statement should be at the beginning of the “Instructions to Authors” and/or in the journal’s policies.

“The journal fully adheres to the ethical guidelines for research and publication described in the Guidelines on Good Publication (<http://publicationethics.org/resources/guidelines>), the International Committee of Medical Journal Editors (ICMJE) Guidelines (<http://www.icmje.org>), and Principles of Transparency and Best Practice in Scholarly Publishing (joint statement by COPE, DOAJ, WAME, and OASPA; <http://doaj.org/bestpractice>).”

b. Clarify all of the article processing charges required by the journal.

c. State that all submitted manuscripts are screened using plagiarism identification software, such as CrossCheck (for similarity checks) [4].

d. Add “Conflict of Interest” statements to all published articles.

e. State specific author contributions as authorship credit when there are two or more authors.

f. Clarify the process for handling research or publication misconduct using the flowchart provided by the Committee on Publication Ethics (<http://publicationethics.org/resources/flowcharts>).

g. For life science journals, statements on human or animal rights, statements on informed consent, and

institutional review board approval should be considered depending on the particulars of the research that was conducted. For clinical trials, registration to the clinical trial registry is mandatory. Informed consent for photographs in which individuals could be identified should be mandatory [5].

h. Copyright information must be clearly and concisely described.

i. There should be an archival policy considering the journal's content.

10) The self-citation rate is less than 0.25

Clarivate Analytics reported that the self-citation rates of 85% of journals were less than 15% [1]. Journals that are not indexed in the Web of Science Core Collection (WOS) do not need to consider this item; however, journals that are indexed in the WOS as Emerging Sources Citation Index should control their self-citation rates. This is a suggested rate, and, in the case of a journal published in a regional language, the self-citation rate might exceed 50% because the citation frequency by other international journals is very low due to the language. The limitations of these journals because of language are difficult to overcome.

11) Journal title, article title, author, address, abstract, and bibliographic information are fully descriptive

This is a basic standard of scholarly journals.

12) The language in which the journal is published is English

This is a basic standard of international scientific or social science journals [6]. Journals published in languages other than English that are important to certain fields might be accepted as SSCI or SCIE journals. However, the current likelihood of this is rare. Furthermore, the numbers of citations of the articles in these journals cannot be competitive because of the language barrier. There are cases of dropping journals

from the SCIE because of low citation rates.

13) The aims and scope are unique compared to other SCIE or SSCI journals, indicating that the journal would enrich the database

Moreover, the aims and scope are precisely stated in no more than 150 words. This criterion is an item that is difficult to accomplish. A lucid and precise description would likely persuade readers and editors that the journal is unique in its category. The provided word count is a suggestion.

14) The number of authors' countries a years is at least 10, and the proportion of articles of which the authors are from a single country is less than 0.50

It is difficult to know how many multiple nationality articles would be sufficient. The 10% and 50% values are suggestions, and it is notable that it is very difficult for non-English journals to meet this criterion.

15) The editorial board members and consultants are from at least 15 countries

It is difficult to identify the exact criterion, but at least 15 countries is a suggestion.

16) The total number of citations is more than twice the number of articles published in given year

It is difficult to identify the exact criterion, but twice as many citations as published articles is a suggestion.

17) The manually calculated impact factor of the WOS corresponds at least 30% of the Journal Citation Ranking (JCR) in the specific category

Although the most frequent reason that indexing is rejected is low impact factor, it is difficult to determine the importance of that factor. For example, a journal with an impact factor above 50% in its category was rejected, whereas another journal with very low impact factor was indexed. Therefore, an impact factor value of 30% is a guess. Thus, the impact factor per se is

important; however, it is not the only one factor considered by Clarivate Analytics.

18) The citation histories of authors and editorial board members are sufficient to attract established scholars.

When authors' and editorial members' articles are frequently cited, the quality of the journal can be evaluated as excellent. This factor is considered when journals are new and an impact factor has not been calculated. In addition, famous editorial board members could easily recruit high quality manuscripts. There is not a known value placed on the extent of their performance according to the Hirsch index [7]. It is difficult to recruit manuscripts from well-established authors, but it is possible to recruit editorial board members at a certain Hirsch index level. Although I do not suggest a precise Hirsch index value on this item, I recommend recruiting editors with Hirsch indexes of at least 10.

19) Electronic formats (XML and PDF) are compatible with digital standards

I recommend that a publisher or editors create full text JATS XML files as the digital standard of the journal. This is the ISO standard of scholarly journals on the Internet [8].

20) The aims and scope, editorial board, archives, instructions to authors, and contact information are stated on the journal's website

The journal's homepage on its website should be precise and accurate so that all authors and readers can access the information easily and constructively.

21) A digital object identifier (DOI) is provided for each article

This is the basic standard of scholarly journals. No scientific, technological, or medical journals exist in Korea without DOI numbers because it is a mandatory identifier on all journal articles [9].

22) Journal title, year of publication, volume, and/or issue number, article title, and author names and addresses are stated on the journal's website

This is the basic bibliographic information of all journals.

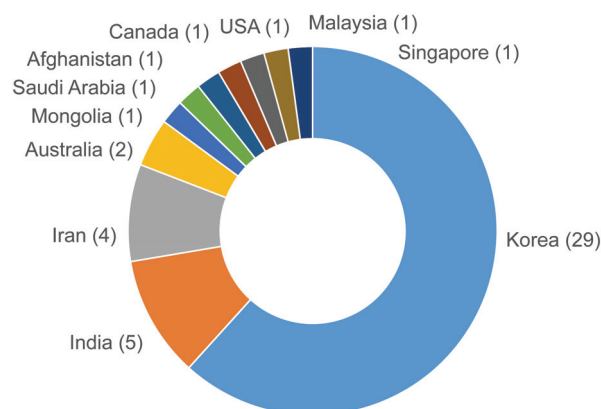
2. What would be the result if this checklist was applied to the Korean Journal Medical Education?

This past September, the Editor of the *Korean Journal of Medical Education* applied to the SCIE. She is waiting for the review report from Clarivate Analytics. All of the criteria listed in the Appendix 1 were sufficiently fulfilled, except for the following three items.

1) Item 14: The number of authors' countries over the most recent years' issues is at least 10, and the proportion of articles of which the authors are from a single county is less than 0.50

An assessment of the data in 2016 found that the number of authors' countries was 11; however, the proportion of single-country (Korean) authors was 0.644 (29 of 45 articles) (Fig. 1). Therefore, the extent of the authors' multiple nationalities might not be sufficient to qualify as an international journal.

Fig. 1. Countries of Authors of the *Korean Journal of Medical Education* in 2016



2) Item 16: The total number of citations is more than twice the number of articles published in given year

In 2016, the total number of citations was 37 and the number of citable articles was 37 (Fig. 2). Therefore, the number of citations was insufficient in 2016.

3) Item 17: The manually calculated impact factor of the WOS corresponds at least 30% of JCR in the specific category

The 2016 impact factor was 0.203 based on the following: The number of citations in 2016 WOS on 2014–2015 articles was 12 and the number of citable articles in 2014–2015 was 59 (Fig. 3). This corresponds to 4.2% of 236 journals in the JCR education and educational research category.

The 13th item, which concerns the journal’s uniqueness, is difficult to assess; however, this journal has

been indexed in Medline since 2015. One of the most important considerations by the United States National Library Literature Selection Technical Review Committee is a journal’s uniqueness for its ability to enrich the Medline database. Therefore, this journal might be unique in the field of medical education. Of course, the SCIE or SSCI perspectives differ from that of Medline, and there might be different opinions among reviewers. I propose that the journal is outstanding regarding uniqueness because it mainly deals with medical education throughout Asia as well as in Korea.

In sum, the three items discussed above (14, 16, and 17) are common responsibilities of Korean editors. When those items’ criteria are met, there might be higher likelihood that the journal will be indexed in SSCI or SCIE.

Action plan to develop the journal as a top-tier publication

Although I stated above that all of the other 19 items’ criteria were met, I suggested adopting an open data policy (above in item 2). Taking this step might clarify the data used in analyses, which might guarantee the reproducibility and soundness of research after the review process. A data-sharing policy for clinical studies should be included, starting with the first issue of 2018, according to the ICMJE recommendations because the journal follows ICMJE principles.

It is challenging to recruit authors from all over the world; therefore, editorial board members should contact relevant researchers in their countries and ask them to consider submitting their papers to the journal. To date, only two journals in the field of medical education in Asian countries are indexed in Medline: the *Korean Journal of Medical Education* and the *Journal of Educational Evaluation for Health Professions*. SCIE and SSCI have

Fig. 2. Total Citations of the *Korean Journal of Medical Education* in Web of Science Core Collection from 2004 to November 2017 [cited 2017 Nov 18]

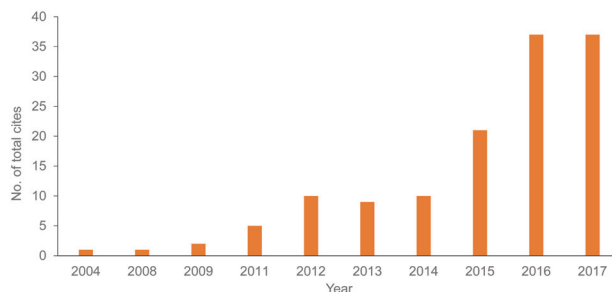
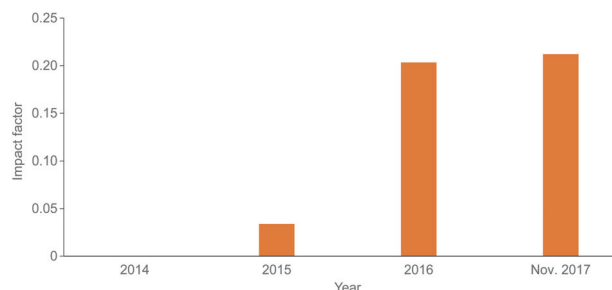


Fig. 3. Impact Factor of the *Korean Journal of Medical Education* Manually Calculated from Web of Science Core Collection [cited 2017 Nov 18]



no indexed medical health educational journals from Asia, except for the *Indian Journal of Pharmaceutical Education and Research*. Therefore, this should be a friendly environment for recruiting manuscripts from Asia.

I suggested above that editors use a checklist to help them to prepare applications to the SSCI or SCIE. When the *Korean Journal of Medical Education* was assessed according to this checklist, there were three weaknesses: proportion of single-country authors, total citations, and impact factor. However, the *Korean Journal of Medical Education* might be able to overcome above weaknesses for three reasons in the near future. First, it began to be indexed in PubMed in 2015 as a Medline journal. Second, it has been searchable via SCOPUS since 2015 as a Medline-sourced journal title. Finally, it has been listed in PubMed Central since 2016 after it changed its language to English. Therefore, until 2016, its exposure to global researchers was limited. I anticipate that the total citations and impact factor will increase each year because of the open access policy. The uniqueness of the journal's aims and scope is another journal's strengths. The editors of Clarivate Analytics are specialists in scientific disciplines with substantial experience; therefore, they are very capable of determining a journal's value. We, the editors, should do our best to produce a high quality journal, and, then, we should wait. After that, the editors at Clarivate Analytics will undertake the selection process.

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Disclaimer: Although all items in the checklist were fulfilled, selected by SSCI or SCIE is not guaranteed. On the contrary, even when some items are not accomplished, there is a chance of acceptance as a SSCI or SCIE journal. Readers should understand that the values presented in the checklist are suggestions.

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Appendix 1. Checklist for Journal Self-Evaluation for Eligibility to Be Indexed in the Social Science Citation Index or Science Citation Index Expanded

Number	Item used for journal selection	Yes/no
1	The journal has been published regularly for at least three issues (online-only journals have been publishing continuously for at least 9 months with at least one article a month, and at least 20 articles per year).	
2	The peer-review system is concrete to guarantee scientific integrity.	
3	The period from submission to publication is less than 1 year.	
4	The proportion of articles written by editorial board members as corresponding authors is less than 0.40.	
5	The proportion of articles in one issue written by the same author is less than 0.30.	
6	The proportion of the non-citable articles is less than 0.20.	
7	The references are formatted exactly as stipulated in the instructions to authors.	
8	The proportion of research articles supported by research funds is at least 0.10.	
9	The journal meets research and publication ethical standards.	
10	The self-citation rate is less than 0.25.	
11	Journal title, article title, author, address, abstract, and bibliographic information are fully descriptive.	
12	The language in which the journal is published is English.	
13	The aims and scope are unique compared to other SCIE (or SSCI) journals, indicating that the journal would enrich the database. Moreover, the aims and scope are precisely stated in no more than 150 words.	
14	The number of authors' countries over the most recent years' issues is at least 10, and the proportion of articles of which the authors are from a single county is less than 0.50.	
15	The editorial board members and consultants are from at least 15 countries.	
16	The total number of total citations is more than twice of the number of citable articles published in given year.	
17	The manually calculated impact factor of the Web of Science Core Collection corresponds to at least 30% of the Journal Citation Ranking (JCR) in the specific category.	
18	The citation histories of authors and editorial board members are sufficient to attract established scholars.	
19	Electronic formats (XML and PDF) are compatible with digital standards.	
20	The aims and scope, editorial board, archives, instructions to authors, and contact information are stated on the journal's website.	
21	A digital object identifier (DOI) is provided for each article.	
22	Journal title, year of publication, volume, and/or issue number, article title, and author names and addresses are stated on the journal's website.	
Total		