

Good Editorial Practice: Editors as Educators

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There may be valuable research going on in the developing and financially less-privileged countries, but it usually does not reach international visibility, in spite of a large number of scientific journals in these countries. Such journals are not only invisible but, by perpetuating a vicious circle of inadequacy, may be directly damaging to the local science and research culture. We call for an international action to help journal editors in less privileged countries. International associations of editors may be leaders of these activities by defining, promoting, and perhaps controlling good editorial practice, as a main criterion for international recognition of a journal. However, the editors of small journals have the power and moral obligation to become a stronghold of quality and advancement in their scientific community. Their educational "tools" are editorial integrity and author-friendly policy. Editors can teach the authors study design, statistical analysis, precision, punctuality, research integrity, style and format of writing, and other aspects of scientific communication. The editors of "big", mainstream scientific journals can act as global educators, teaching and providing guidance to editors of small journals. The editors from developed countries as leaders, and editors from less advantageous environments as teachers are the key figures in shaping research communication in less privileged scientific communities.

Key words: bibliometrics; cross-cultural comparison; education; professional; retraining; indexing; journals; periodicals; practice guidelines; practice patterns; professional; publishing; training support

The guest editorial in this issue of the Croatian Medical Journal describes future activities of the World Association of Medical Editors, WAME (1), an electronic community of more than 500 editors of medical journals all over the world. WAME aims towards setting standards of editorial work and education programs for editors of medical journals especially those in financially less-privileged countries. The ideas outlined below in our article have contributed to the discussion about the ways to help such editors and has shaped the future strategy of WAME.

We have recently described and analyzed the weaknesses of scientific medical journals from less advantageous environment (2). In this article, we will operationally call these journals "small", to emphasize the smallness of their scientific communities or their peripheral position to the mainstream science (2). Such journals are usually published in English and obviously aim to present scientific reports from their local environments,

which can offer internationally important information. Small journals published in the local language should have educational function (3), but they most often bring articles that their editors classify as "scientific" or "professional", although they do not present original work or novel findings or have any educational value (4). Thus, journals in both English and local language end up striving to achieve international visibility, mostly through becoming indexed in widely used bibliographic databases, such as MEDLINE, Current Contents, and Science Citation Index. Only a small minority of them reaches this goal, while the rest continue to live in anonymity, often for decades (5-9). For example, only 4,300 out of 22,400 periodical titles received by the National Library of Medicine, the world's largest medical library, were indexed in MEDLINE in 1999 (10).

The limited pool of potential contributors, who are also scientifically relatively weak, insufficient financing, inadequate pool of reviewers, poor review process,

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and the communication/visibility barrier of the local language or poor English constitute a vicious circle of inadequacy of small journals (2): until they solve these problems, small journals cannot become visible, but because they are not visible they cannot efficiently solve the problems. We have argued that some of these journals can be helped to reach internationally accepted standards and join the mainstream science because: 1) they may provide an important contribution to the scientific knowledge in general, 2) they can publish data on local specificities that have general importance, and 3) they can serve as a medium for training local authors in writing and, consequently, increase research standards (2,11). We suggested, on the basis of our own experience (12), a series of concrete activities by which these journals can be helped and their quality improved (2,11).

However, if such journals do not realize this potential, they will remain not only invisible and insignificant, but will directly damage local science and scientific culture. Directly and indirectly, they thwart and slow scientific advancement, build upon feeling of false self-containment of the scientific periphery, and create an atmosphere of “intellectual apartheid”. The scientists think and work continuously on an inadequate and often damaging level, believing that the “big, developed world” if not discriminates against them, and then at least does not care for them. We will also propose a relatively achievable and potentially effective way of addressing the problem: it would be a concerted effort of the journals from the mainstream science focused upon the editors of small journals. The key function of editors from big journals is to educate their colleagues from small journals, and that of the editors of small journals to become educators in their environments.

Adverse Effects of Small Medical Journals

The negative influence of small journals upon their local scientific environment is mediated through their direct support of weak science and inadequate investigators, which in turn influences the whole scientific atmosphere - its criteria, teaching, communication, and scientific output (Fig. 1).

Journal-Author Vicious Circle

Weak journals yield low quality products (13), which is directly related to their low publishing criteria. As shown in the central part of Figure 1, weak publishing criteria are reflected in inadequate peer review, inadequate language, invalid reporting (study design, statistics), poor style and format (abstract, key words, referencing), and, what is most important, inadequate editorial policy, which ranges from poor work to questionable editorial integrity.

However, this is only one side of the coin. Poor reports published in such journals are *recognized and valued* as reports of acceptable scientific quality, as equivalents to reports published in international journals (14), making thus small journals the key medium of scientific recognition and academic advancement! The fact that a poor scientific product is locally viewed as a product of acceptable quality exerts several damaging effects: (a) the authors gain respect and influence (recognition, promotion, post at key administrative functions) in their community; (b) cut off from the mainstream science, the authors themselves start believing that their work is sufficient and fail to perceive incentives for improvement; and (c) the authors become a powerful obstacle to the change of criteria towards internationally accepted standards.

This vicious circle is much more difficult to break than the one described for small journals themselves (2). Here the obstacles are not only the lack of knowledge, size of the community, and financial resources, but also the state of mind, thwarted scientific criteria, and mutual support of weak authors and weak journals.

Wrong Criteria

The criteria for scientific recognition and academic advancement differ enormously from country to country (15). These differences are generally not known, discussed, or brought up to common standards. The developed world uses mechanisms that rely on incentive for production and survival in a highly competitive environment. The mechanisms and criteria in small countries may be completely different, often protective of local journals and coupled with *avid pro suo* principles, political influence, nepotism, and no responsibility for the public interests. Such a system has indeed deserved the name of “academic corruption” (16).

False Recognition

Small authors, small journals, and small scientific communities take a completely different direction from the mainstream - measurable, competitive - science. Since authors of weak journals achieve recognition on account of their inadequate products, they often fail to develop incentive to perform better, to follow international standards, and to properly value any kind of effort and result (Fig. 1, upper right part). Instead of facing their problems by learning more and working harder, they rest on their “laurels”.

Once the poor publications in the local journals become the key criterion of (local) scientific and academic recognition, these journals become important not only to their owners, publishers, and editors, but also to their authors. The authors obtain academic titles and

importance, and at the same time reject international standards and refuse quality analysis or any discussion on standards and criteria. They themselves form a system, perfectly built into the social and psychological body of their society.

Absence of Control Mechanisms

Weak journals have few readers and are not indexed, which both makes them invisible (Fig.1). Paradoxically, instead to incentive and struggle, this invisibility turns into “advantage”: it excludes control, supervision, or any kind of evaluation. The state, which finances the journals (eg, through the ministry of science), usually legalizes the established system of research criteria(17). For example, almost as a rule, every new Croatian minister of science and technology declares that “publishing in indexed should not be mandatory for academic advancement because, as far as he or she knows, there are journals that are not indexed but are leading international journals”. The end result is that the state and its (or other public) institutions do not want and do not know how to execute quality control. True science is not only absent, but devalued and looked down on as well, as if it were hobby of rich westerners and a few local eccentrics.

Inadequate Teaching

Due to their distorted views and inadequate understanding of literature, weak authors are not only mediocre as clinicians and poor as researchers (Fig. 1, center), but also inept as teachers (Fig. 1, bottom). Through promotion and recognition based on their invalid scientific production, they obtain positions of decision- and opinion-making, which results in production of inadequately trained young researchers, poor student teaching, low criteria, and general promotion of inadequacy.

Misleading the Public

The weak researchers who reach high positions and esteem in the local environment through publishing in weak journals are neither capable nor care to provide pertinent information to the public. However, since they constitute the most prominent authorities in the society, their information is taken at the face value, and thus, as in the case of inadequate formal teaching, the publicist ill-informed and misled. The situation is worsened by the fact that such authorities often publicly advocate their distorted views about criteria, advancement, and possible future development.

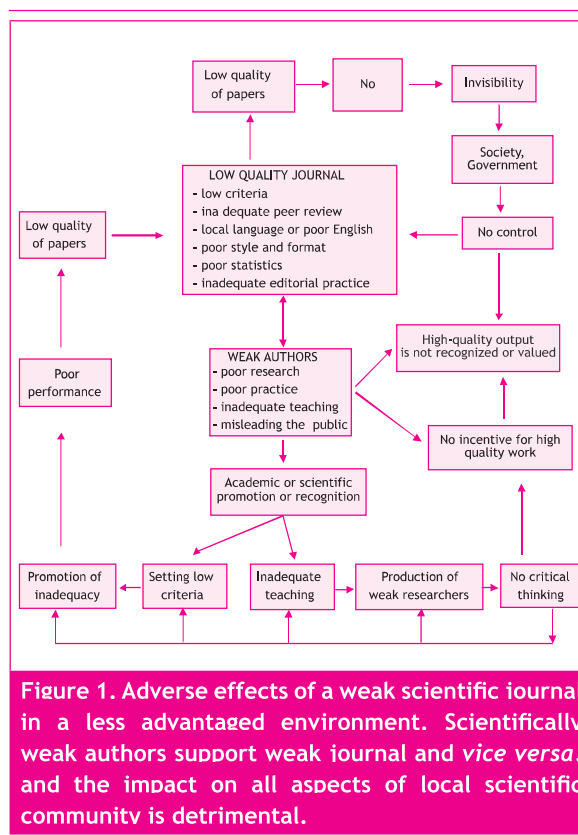
Global Improvement of Editorial Work: Joint Action for the “Big” and “Small”

Journals

In the last few years, different strategies have been proposed to facilitate the exchange of health information

and knowledge between the developed and less developed scientific communities(18-20). We believe that the editors from less advantaged countries could play an important role involving this problem. Together with their colleagues from mainstream medical journals they may join forces to improve their work, journals, and research standards in their medical community.

The initiative should come from global associations of editors, such as the World Association of Medical Editors (1), in cooperation with other associations of science editors, such as the European Association of Science Editors, Council of Science



Editors, publishers, bibliographic institutions, and research institutions (Fig. 2). International organizations of editors should first define “good editorial practice”, as has been defined for other areas of research (21,22), and then advertise educational role of editors.

Definition of Good Editorial Practice

Good editorial practice can be defined by actions listed in Table 1, and by publication standards set by the International Committee of Biomedical Journals Editors (23). Since editorial work produces printed (or web) documents, good editorial practice can be monitored, evaluated, and improved. International editors’

associations could consider acceptance of good editorial practice and editor's education a prerequisite for membership, as well as advise bibliographic institutions to adopt the assessment of good editorial practice as the main criterion in journal indexing. Good editorial practice could also be used as a key financing criterion by governments or other financing bodies in small countries. A small journal, seeking financial support or inclusion in bibliographic databases, should first have to define and develop its own editorial practice (guidelines for authors, reviewer's form, authorship statement form, conflict of interest statement), and then prove by its published data or its editorial documents that it has had followed good editorial practice as outlined in Table 1. Fulfilling minimum criteria on this level would be a prerequisite for further evaluation (Fig. 2). Again, it should be emphasized that this procedure would not only make evaluations for indexing or financing easier and more just, but, what is much more important, greatly improve the quality of journals.

The international scientific community, associations of journal editors, funding agencies, academic institutions,

and governments would thus acquire a tool for measurement, a mechanism of influence (improvement), and a component of feedback mechanism, which would improve journal quality (and subsequently the quality of science), offer incentive to editors, and form quantitative basic criterion for journal evaluation. Of course, this can not be done in a very short time. There could be, for example, a five-year transition period during which the journals to be funded should accept, apply, and follow good editorial practice (Table 1). In another five years a journal should achieve at least some kind of international recognition, i.e., become indexed in at least one of the bibliographic databases. With good editorial policy at hand, international associations of science editors, or even bibliographic institutions, could offer advice and/or expertise to funding bodies regarding the strategy of supporting local journals. Such expertise could be extended to all other potentially interested parties, such as local professional associations or the journals themselves.

Editor as a Teacher - the Role to Be Established

Weak journals in the scientific periphery are not the sole cause of all problems, but there is no doubt they are one

Table 1. Good editorial practice: minimal requirements

Requirement	Comment
1. Regular publication of the journal	This is the first and key criterion
2. Style and format	Follow international standards ("Uniform requirements for manuscripts submitted to biomedical journals")
3. Editorial Board	Recruit colleagues dedicated to editorial work Appoint statistical editors and editors dealing with research integrity and medical ethics
4. Editorial documents	Guidelines for authors Review form Authorship statement form (ask for conflict of interest)
5. Manuscript records	Each manuscript should have its identification number Keep all key documents for each manuscript, including dates (received, reviewed, accepted/rejected, published)
6. Peer review system	Set up a reviewing system and keep reviewers' files: <ol style="list-style-type: none"> Mark their field of expertise. Keep records of manuscripts they have reviewed (at least their number) Publish reviewers' list each year
7. Author and Subject Index	Do this in the last issue of each year
8. Basic data on the journal and editorial work	Publish regularly (eg. every five years) data on your journal: <ol style="list-style-type: none"> Number of papers received, reviewed, and accepted. Basic data on peer review
9. Alert bibliographic databases of your Journal and your editorial work	Provide documents on your editorial practice
10. Continuing education	Learn about new developments in journal editing and publishing

of the key factors contributing to the perpetuation of scientific inadequacy, and one of the strongest links in the vicious circle of inadequacy. In this respect, it would be better for the local science if these journals did not exist at all. However, we suggest a different remedy, one that may not only abolish the source of the problem,

but also turn into an efficient mechanism of improvement. We believe that the editors of small journals have the power and moral obligation to become a stronghold of quality and advancement in their scientific community. Editors should be educators of their authors, reviewers, and other collaborators. Their collaboration can make small journals allies and not adversaries of science in their environment.

Editor as a teacher has two strategic tools - editorial integrity and author-helpful policy. With his or hers editorial integrity (Table 2) the editor sets the standards of publishing and research, which are effectively transferred to the local scientific community by the very nature of the publishing process. Author-helpful policy (Table 3) enhances this transfer and builds up research integrity standards in the scientific community. The key points of the two strategies can be outlined in the following way.

Teaching Authors. Every editor of a scientific journal has a strong influence on the authors, simply because he or she decides whether their works get published or not. This is a great power, especially because editors are usually independent of outside influences and thus may have strong editorial (moral) integrity (24). Regardless of a journal's importance, the editor can educate his or her authors in all aspects of communicating their work to the scientific community (11, 12).

(a) Presentation of data. Each journal defines its style and format, but most follow basic guidelines for publishing biomedical research (23). By asking authors to follow these guidelines as close as possible, an editor not only keeps the standard of the journal's style, but also teaches authors a very important part of communicating scientific research: format of the scientific article, completeness of data presentation, correct citation of the literature, organization of tables, design of figures, and other details in papers which support their scientific validity. All those who work with authors from less advantageous environments know how difficult it is to get them to fulfill all required albeit simple formalities (25). Insistence on these issues is the first step in the education of authors.

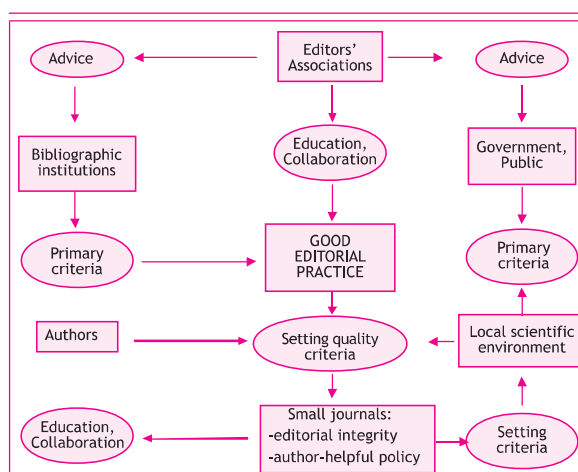


Figure 2. Proposed interaction of international editors' associations and small journals and their authors on the other.

(b) Study design. As the study design has been set long before the final results reach the editor, little can be done to change this aspect of research. However, even at this stage the editor can educate the authors, in two ways. One is to tell the authors the weaknesses of their study openly and in the greatest possible detail. This can be done by asking reviewers to pay special attention to the study design and make clear comments to the author directly or to write about it to the editor. Although time-consuming, this is much better than just rejecting the manuscript, usually politely claiming the rejection "due to space limitations" or "backlog of papers waiting to be published" - this is discouraging and educationally useless. The other approaches to establish an author-helpful "pre-review" system (12), in which authors are encouraged to submit their work at an early phase. Editor's critique and advice thus improves the quality of the study, increases the pool of potentially publishable papers, and educates authors for their future research (26). In our experience, the work with authors at an earlier stage of their research is not regarded as a promise of publication either by authors or editors (26).

More fundamental improvement of the design of research studies is not in the editor's hands but falls within the realm of university education. Nevertheless, editors can provide incentive for or organize writing and communication courses on different educational levels (26).

(c) Statistics. Teaching authors the importance and standards of statistical analysis (27) can be performed

through author-friendly statistical review of the papers, again preferably at an earlier stage of the research. Inclusion of at least one, and possibly more statistical editors in the journal's editorial board is the best approach, together with the general effort to improve teaching of statistics in biomedicine.

responsibility, concentration on detail and clarity, honesty, and politeness. The value of the editor for authors is comparable to the power of a parent over a child; for the very same reason, it should be exerted with love, care, wisdom, and long-term educational aims.

(d) Communication. Communication of the editor with the authors contains much more than just the submission and acceptance/revision/rejection letters. The line of communication opened by the submission of a manuscript offers the editor numerous possibilities to influence authors' communication skills: punctuality, sincerity, professionalism,

Peer Review and Reviewers. Reviewers are dependent on the editors seemingly less than authors, but once when a scientist decides to do the review, he/she actually accepts a position similar to the author's. The editor can teach the reviewers the same communication skills as the authors: punctuality, sincerity, professionalism, responsibility, honesty.

Table 2. Editor as a teacher: editorial integrity

Activity	Advice
Keep track of all manuscripts	You may need documentation for appeals or other disputes
Review every paper properly	This often fails in practice: avoid "special cases"
Keep publishing order of manuscripts	In the long run, it pays off: minimize "special cases"
Use authorship statement form	Ask authors to describe their individual contributions
Check for duplicate or salami publications	Let authors know that you care about these issues
Ask about conflict of interest	Ask actively, do not wait for spontaneous disclosure
Establish research integrity service	Never close eyes on obvious or even suspect misconduct
Limit the number of papers by individual authors	Favorite authors rise suspicion of nepotism
Don't publish your own papers in your journal	Don't write many editorials, avoid publishing your research in your journal

Table 3. Editor as a teacher: editorial integrity

Activity	Advice
Be timely in informing authors about your decision, respond promptly to their queries	Authors like timely and straightforward information
Praise and award cooperative authors	Use imagination, and care for authors
Actively solicit articles for the journal	Passive waiting will not produce good manuscripts
Introduce a pre-review process	Help authors to improve their report before peer review
Strengthen journal's statistical expertise and criteria	Check papers at receipt and after acceptance
Do not reject papers for poor language	Return the manuscript to authors with advice on improvement
Insist on proper citation of references	Check references for each manuscript
Always check galley proofs	Less experienced authors underestimate this work
Produce comprehensive but readable guidelines for authors	Make them available free, on-line, and in printed form
Combine kindness and strictness	Strictness is more important and comes with kind pre-review of the manuscript

Politeness, use of argument in disputes, and concentration on detail and clarity. The reviewers' position is very sensitive to the issues of conflict of interest (28), and this should always be kept in mind, both as a potential danger (for the objectivity of the review) and a chance to teach. To avoid such conflicts in a small scientific community, editors of small journals should always send a manuscript to at least one foreign reviewer. Our experience is that circulating a detailed and serious review among other reviewers (preserving the anonymity of the reviewer) grossly improves their subsequent reviews.

Spreading Knowledge. As a journal can exert negative influence upon the local environment (Fig. 1), it can equally well set sound criteria and spread quality standards in its environment, if it is read. In the beginning, the editors can stimulate discussion at their institutions (university, research institute, etc) about the quality, capacities, and potentials of research and publishing. The latter is especially important, because in a small scientific environment the most difficult task is to break the feeling of inability, futility, and hopelessness of "following the rich and developed". When such a community acquires a successful journal that "made it", it gets more difficult to dismiss authors who published in international journals with phrases "he or she was lucky" or "foreigners helped him or her".

Research Integrity. Technical and economic advantage as a challenge for moral weaknesses *a priori* burdens the scientifically weak environment with all kinds of scientific fraud (16,29,30) (Fig. 1). Lack of control and incentive to improve aggravates the problem. Introducing any aspect of research integrity control into the editorial process (29, 30) can be extremely beneficial. In this context, it is not important to really detect and prosecute scientific frauds, or even directly prevent them, but to introduce the awareness of the importance of moral integrity into the local scientific (and thus all other) culture. Redundant and replicate publications, forgery, plagiarism, false authorship, and interest-driven biases (29) may not disappear, not even diminish, but the scientific community will receive a message that somebody somewhere does care. This can mean a significant change, and, ultimately, an improvement.

Time for Action

The role of the editor as a teacher should be practiced on all levels of editorial work, as described in previous paragraphs. The editor's educational "tools" can be grouped under two large policies: editorial integrity (Table 2) and author-helpful policy (Table 3), each of them containing at least ten different mechanisms.

These actions can not only improve the quality of the journal (12, 26, 31) but also exert a significant educational role.

Specific education of editors, primarily in mastering good editorial practice (Table 1), can be offered. This line of action can be further elaborated and transformed into levels of education and/or quality control and assurance, similar to the system being developed in higher education (32). Ultimately, during the procedure of inclusion into bibliographic databases (Fig. 2), formal proofs of editors' education would be evaluated as a part of good editorial practice (Table 1). Financing of editors' education should not pose serious problem, first because even small journals receive funding and can spare something for education, especially if it becomes an important criterion for assessing their editorial work. International funding agencies and institutions, especially those concerned with developing countries, could also fund such courses as a good investment for their goals. The courses could be organized by regional editors' associations and could be oriented to a specific region - to gather editors from similar environment, problems, language, and goals. Such courses, especially if organized as small workshops, would not be expensive because they would not involve long-distance travel. Our experience with a course on writing in biomedicine, which we organized in Croatia with the colleagues from *The Lancet* and the Cochrane Collaboration and where we gathered young researchers from several countries in the region (Bosnia and Herzegovina, Croatia, Macedonia, Slovenia, Yugoslavia), showed us that such a course could be organized with relative ease and great benefits for the local research communities.

Think Globally, Act Locally

With this article we wanted to explore the reasons for the current state of publishing and science in less-privileged countries and to give support for global action to improve editorial work in medical journals (1). Knowledge is the property of the whole humankind, so that any local advancement will affect the global scientific community. To paraphrase René Dubos' ecological argument "Think globally, act locally" (33), the time may have come for editors of medical journals to turn global publishing problems into action by considering social, economic, and cultural differences in local scientific communities. Education of editors on the global and local level may create a critical mass of knowledge and people to improve health researching the world. The interactive triangle of the international associations of editors, local editors, and local authors has a real chance to make a change in international communication between scientists and scientific journals.

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