Twenty principles of being a scientists – the author and the reviewer

Authors' Contribution:
A Study Design
B Data Collection
C Statistical Analysis
D Manuscript Preparation
E Funds Collection

Roman Maciej Kalina[1ABCDE], **Bartłomiej Jan Barczyński**[2ABCDE]

[1] Faculty of Physiotherapy, Academy of Physical Education, Katowice, Poland
[2] 4 MEDICINE REK LLP, Warsaw, Poland

Source of support: Departmental resources

Received: 17 July 2014; **Accepted:** 14 August 2014; **Published online:** 21 August 2014

ICID: 1126168

Abstract

Young researchers promotion is unquestionable investment of any society. The aim of this paper is the recommendation of twenty principles, which following significantly enhance the recognition of the new researcher of science, worthy of this name. Brave compliance to these principles of every new researcher being creating two new scientific specializations – science of martial arts and science of extreme sports – is a hope for the development of these sciences according to the highest standards. There are no neither better nor worse sciences. The science is one. However there are scholars, which – irrespective of the represented discipline and scientific specialisation – by every work are giving the proof of both the solid knowledge and the highest ethical level, which at the same time are not lacking the creative courage. However they are other who are lacking these advantages. Difficult and thankless role of editors of scientific journals is selection of manuscripts and the most competent reviewers in order to ensure every basic and detailed sciences (sub-disciplines) sustainable development.

Keywords: Global Knowledge Society • science of extreme sports • science of martial arts • young researcher

Address for correspondence: Roman Maciej Kalina, Department of Health Promotion & Research Methodology, Faculty of Physiotherapy, Academy of Physical Education, Mikołowska Street 72A, 40-065 Katowice, Poland; e-mail: kom.kalina@op.pl

Introduction

Young researchers promotion (rationally thinking person reasonably say: *the new scientific personnel*) is unquestionable investment of any society. If we look at this issue from the perspective of the Global Knowledge Society the question raises: if national communities or associated in larger structures (the European Union is perhaps a good example) are matching as for general criteria of this promotion?

The natural course of things is that a candidate standing at the threshold of a scientific career can very quickly become a reviewer of research accomplishments the scholars even much older – including own teachers. We are not fantasising. From time to time make it appear "modern" trends in the science (fashionable fields of research, the incentives to publish a lot and quickly after obtaining the Ph.D. degree [1] etc.), or principles administratively imposed, recognising what is "real" scientific achievement and which does not meet this criterion. Today, in many countries these *magical* criteria are *Impact Factor* and *Hirsh Index* [2-5]. In Poland and the former Soviet Bloc countries the problem is still expressive [6]. It does not matter what you publish, but where you publish. Paradoxically, the scientist can achieve very high personal citation index based on many critical references to his/her papers.

Since the science of martial arts is still emerging research field (sub-disciplines) [7, 8], we cannot exclude, that the scholar with a high *Impact Factor* (not necessarily high *Hirsh Index*) can be the reviewer of the publications much older colleagues. However,

for the development of young scientific personnel, much more important issue is the awakening of the three features that determine a **true scientist**: openness for continuous education, a high ethical level and creative courage. The first two issues highlighted Jarosław Rudniański nearly forty years ago in the introduction to the publication "*Science: creativity and organization*": "(...) a real scholar is only the one who combines a high level of expertise with a high level of ethics" [9 , p. 5].

Today Harriss and Atkinson [10] emphasize the need to respect ethical standards in sport and exercise science research. Since new researchers of the new scientific specialisation „science of martial arts" [7, 8] and „sciences of extreme sports" [11] are generally both masters of certain martial arts/combat sports, or have a significant achievements for extreme physical activity, therefore we believe they should not run out of courage in taking difficult research challenges.

The aim of this paper is the recommendation of twenty principles, which following significantly enhance the recognition of the new researcher of science, worthy of this name.

Twenty principles

1. Before you submit your manuscript to the editors accept a role requires the auto-mentor and auto-reviewer.

2. Instructions for authors are similar in most scientific journals, but no instruction does not indicate how to handle with the quality of manuscript – this is the domain of the content. Content of the publication paper is in some sense a synthesis of your individual education, talent, determination, sensitivity, self-discipline and ability to self-criticism, ability to use words, courage, fear anxiety, vanity, reliability, ethics and many other factors.

3. Instructions for reviewers are not generally practiced. Thus, the content of the reviews (apart from the formal part of the "Reviewers Questionnaire", but not from the "Comment" of the various elements of the questionnaire and the "Comments and Suggestions for Author (s)") is determined practically identical factors of personality as the author of the evaluated publications (see above). Distinguishing factor reviewer from among beginner's should be experience. However this is also the weakest point of contact the two parallel worlds of science. Regardless of that science as a whole is one (see section 6), the scientific schools are different – in the detailed meaning.

4. Your most important reviewer is the collective – the readers. Do not delude yourself by mirage of *the Impact Factor*. Published in the journal, which is reading by professionals and people interesting the knowledge of phenomena which you explore. Substantive and friendly criticism by readers of this category is worth more than a prestigious award for an article, where your contribution is minor.

5. If the average level or even good is unacceptable for you, you are on the right way. Firstly ask yourself the elementary question, whether manuscript fulfils the highest standards of the scientific publication – original, review, other category? This is an important step towards sure bringing up in two parallel worlds of science.

6. The purpose of science is knowledge, so in that sense, science is the only one. Products of science are well founded statements and scientific theories. Only such products of your research work will be included into the science. The responsibility of the reviewer mission cannot be overestimated, as these publicized most valuable knowledge. The biggest difficulty – select the right reviewers.

7. The multitude of specific scientific disciplines and scientific schools are not barriers in creating the universal rules of communicating researchers in continuously changing roles – of the author and the reviewer. On the contrary – are the main stimulators of progress. Potential enemies of such communication are: scientific jargon understood as a whole, the ambitions and lack of tolerance of individual scientists and research teams, misconducting reviewers. The allies: logic knowledge, research methodology, praxeology, teleology, ethics and reliability. Specialist knowledge (the author and the reviewer) is a necessary condition, on the one hand to be a worthy partner of professionals already recognized as an authority in a particular field, on the other hand to have a substantive basis for the creation of valuable knowledge (alone or in a team). The universal ally – wisdom (each individuals or scientific community) and the ability to strength the

knowledge in a manner available to specialists, even from the separate fields of science and educated people who are not scientists.

8. At the core of the beauty and value of science is an infinite number of problems that can be made – very important, important, less important ... banal. Even the most banal are useful. Though in training the mind, such as during the seminar. If you can identify them avoid disappointment hoping that the manuscript will receive approval of a major scientific journal editors. Banal problem, but not the same as banal text. Correctly solved the banal problem deserves fair assessment reviewer and the right decision – approbation for his ability to use the scientific method and reasoned refusal to publish the paper.

9. No matter that on the scientific method scientists do not have a single view. No matter that some doubts whether it is legitimate to distinguish such a method. It is important to awareness that since the products of science are well-founded statements and theories, so formulation these products, must be preceded by precise procedures to which the consent almost all the people the formal status of the scientist. Factor in disciplining the mind and the performance of each researcher and the reviewer should be an elementary canon of logic: "from true premises to true conclusions".

10. Scientific method – in contrast to the methods to solve practical problems faced by millions of active people every day – there are five basic elements: (a) precisely formulated issue (problem) submitted a question or a sequence of questions; (b) an appropriate method (in the most general sense) solution of the problem: in empirical research – observation or experiment; in theoretical study – correct reasoning; (c) the need to justify own research data; (d) the comparative results of its own compared to the previously published empirical data, and for theoretical research – adequate to the formulated issues – the main comparative results (empirical data, views, methods, effects, implementations, etc.); (e) formulate conclusions nature of cognitive and / or application. It's not all. The formulation of scientific issues (questions / questions) should be preceded by the disclosure of true premises (scientific facts based on empirical data and / or the most significant effects of reasoning), and research assumptions (de facto indication of limitation, because the researcher cannot control all factors remaining in the relationship the phenomenon or phenomena that are research).

11. Theories and hypotheses about the values of explaining the phenomenon or arrangement phenomena are the most valuable effects of the scientific method.

12. The structure and content of scientific publications (your manuscript) should reflect variant form of the used scientific method. Reflecting methods of empirical research is the original article about the prevalent editorial structure (background and study aim, material and methods, results, discussion, conclusions, references). Mapping methods of theoretical research is a review article which editorial criteria are not explicitly prescriptive. Similarly, the lack of definition (editorial criteria) other types of publications which are generally intuitively are classified as scientific (often popular science).

13. One of the major pitfalls not only editorial and not only semantic but also substantive nature (and thus providing a strictly scientific qualifications of the author and reviewer – see section 7) is purpose formulate a scientific publication. Purpose occurs because of different levels to communicate with those to whom the publication is addressed. The purpose of promotional theses (bachelor, master, doctoral, etc.) is first to provide direct proof their scientific competence adequate to the application level (the work of this category are marked on the title page information – such as *doctoral dissertation*). The aim of any scientific publication is the knowledge of a certain fragment of reality, and written form – even at the initial insight paper – provides information on the variant applied the scientific method. The most important among the objectives of any scientific publication – or some form settled knowledge – is a reference to its core, the layers of research. So the most important is the purpose of research (empirical or theoretical). Short editorial formula "target article" is not an error if the content informed just about "purpose of research".

14. To distinguish between categories of purposes of a scientific publication is a simple indicator of the overall scientific orientation anyone who

creates knowledge and who is studying the scientific literature. The world's scientific literature is full of publications in which the purpose are formulated as follows: "the aim of work is to investigation ..", "the purpose of this paper is to evaluate ...", "goal of study is comparative ..." etc. Thus, is justified elementary question: what method and by what means (means are intermediate objectives in achieving the main objective) author reaches so formulated objectives?

15. After a stand-alone answer to that above question come to the conclusion that a very important indicator of scientific qualifications of all subjects responsible for a publication (author, reviewers, subject editor, scientific board, editor–in-chief, etc.) is the formulation of the purpose.

16. Subtle indicator of verifying of scientific qualifications of the same subjects is properly respected the ordinal variable during the presentation of research results. If the criterion is to organize the empirical data, e.g. the alphabetical name indices, or if the representation of empirical data are the order of the survey questions, this is evidence of a crisis of perception purpose of research (sense of question/questions) and the capacity for preparing a clear answer.

17. The same subjects assign responsibility for the publicized incomplete conclusions from empirical research (the domain of the original articles). Repeat the research results is common. Again, refer to the basics of logic: the result, concrete observation statements, is a premise for the next sentence, or conclusion. Maybe simple scheme - about high degree of generality – will help you in this important process of realization of scientific research, *"most of the experimental data authorizes the conclusion that ..."*

18. Contrary to appearances, this is how the rewrite references may have consequences beyond the circle of subjects jointly responsible for the quality and form of publication, than the circumstances described in subsections 13-17. Respecting the number references in the set of the alphabet as an ordinal variable (instead of year of publication) is certainly evidence of a lack of diligence. Negligent editing the journal names may cause the reader does not reach the original article or lose time to search for the article in another journal with the same or similar name. Serious consequences are relate to efficiency and reliability evaluation of scientific journals. This is such an important global problem concerning the administration of the sphere of science, that there should be no malpractice show ISSN or DOI cited journals. This practice can become a rule that binds all the bases of the scientific literature.

19. The essence of the beauty of science is uninhibited thinking and the ability to consolidate its effects. Imagine – your published manuscript may be evidence of your immortality. It's the only principle and the only time in your scientific activities, which tolerate emotional thinking. This is a unique moment.

20. Proceed the same with each manuscript and do not underestimate any of these rules, it does not fall into a rut and do not lose the instinct of a scientist two parallel worlds of science – of the author and the reviewer!

Conclusion

Brave compliance to these principles of every new researcher being creating two new scientific specializations – science of martial arts and science of extreme sports – is a hope for the development of these sciences according to the highest standards. There are no neither better nor worse sciences. The science is one. However there are scholars, which – irrespective of the represented discipline and scientific specialisation – by every work are giving the proof of both the solid knowledge and the highest ethical level, which at the same time are not lacking the creative courage. However they are other who are lacking these advantages. Difficult and thankless role of editors of scientific journals is selection of manuscripts and the most competent reviewers in order to ensure every basic and detailed sciences (sub-disciplines) sustainable development. The scientific employee as the proponent of the knowledge is obliged "(...) *to find out and to condemn pseudo-scientificness hiding behind the scientific phraseology"* [12, p. 17].

Conflict of interest

Authors declare that there are no conflict of interests.

References

1. Bonetta L. The Postdoc experience: not always what you expect. Science 2008: 32: 1228-1232
2. Hirsch JE. An index to quantify an individual's scientific research output. PNAS 2005; 102 (46): 16569–16572
3. Garfield E. The history and meaning of the journal impact factor. JAMA-J Am Med Assoc 2006; 295(1): 90-93
4. Kierzek R. Polska nauka w indeksie Hirscha – zestawienie ocen parametrycznych wybranych polskich uczelni wyższych oraz instytutów naukowych Polskiej Akademii Nauk. Sprawy nauki 2008; (6-7): 29-35 [in Polish]
5. Kuś M, Mankiewicz L, Życzkowski K. Porównywanie indeksów Hirscha uczonych i instytucji naukowych. Sprawy Nauki 2009; 144 (3): 30-33 [in Polish]
6. Barczyński BJ, Graczynski M, Kalina RM. Barriers Restricting the Free Dissemination of Scientific Achievements: Own Experiences in Crossing Walls and Bridges. J Hum Kinet 2009; 22(22): 7-14
7. Kalina RM. Science of martial arts as the new scientific specialty. 2nd World Scientific Congress of Combat Sports and Martial Arts. In: Cynarski WJ, Kubala K, Obodyński K, editors, Proceedings. University of Rzeszów. September 17-19, 2010: 34
8. Kalina RM, Barczyński BJ. Archives of Budo Science of Martial Arts and Extreme Sports – A reason for this new branch journal. Arch Budo Sci Martial Art Extreme Sport 2013; 9: 1-9
9. Rudniański J. Nauka: twórczość i organizacja [Science: creativity and organization]. PWN 1976 [in Polish, abstracts in English and Russian]
10. Harriss DJ, Atkinson G. Ethical Standards in Sport and Exercise Science Research: 2014 Update. J Sports Med 2013; 34: 1025–1028
11. Bąk R. Definition of extreme physical activity determined through the Delphi method. Arch Budo Sci Martial Art Extreme Sport 2013; 9 17-22
12. Komitet Etyki w Nauce przy Prezydium Polskiej Akademii Nauk. Dobre obyczaje w nauce. Zbiór zasad i wytycznych [Good manners in the science. A set of principles and guidelines]. Warszawa 1994 [in Polish]

Cite this article as: Kalina RM, Barczyński BJ. Twenty principles of being a scientists – the author and the reviewer. Arch Budo Sci Martial Art Extreme Sport 2014; 10: 53-57