



What is a scientific article and does every PhD student have to prepare it?



Reliable and independent scientific research is the fundament for the development of our society. Since the 17th century, researchers and philosophers have been wondering what is the purpose of scientific research. Depending on the era and the most dominant paradigm, the most important goals of science were the improvement of the human life conditions or looking for better explanations for anything that needs an explanation. However, there is an important question, what would happen if scientists left their discoveries for themselves? Why do we need science if we don't have the opportunity to share it with the rest of society? For this reason, many different methods of science dissemination have been developed. One of them is the scientific article.

According to the definition of a scientific article in the Ordinance of the Minister of Science and Higher Education from February 22, 2019 (Dz.U. 2019 pos. 392) on the evaluation of the quality of scientific activity, a scientific article is a peer-reviewed article published in a scientific journal or the peer-reviewed proceedings of an international scientific conference. The article must present originally and creatively a problem-based or comprehensive analysis of specific scientific issues. In addition, it is supported by footnotes, bibliography or description of scientific techniques appropriate to the discipline. The primary goals of scientific articles are to publish original research work and to review research conducted by others. Today, the articles are crucial for the dissemination of knowledge and the evolution of science. To achieve their goal, articles must effectively share knowledge. For this reason, articles should be easy to understand clear, accurate and concise. This is especially important in the technical sciences, where elaborate comparisons and metaphors, dedicated to literary texts, change their meaning and reduce their clarity.

The key thing to note is the specific structure of scientific articles. For instance, articles describing experimental work are often arranged chronologically into five sections (abbreviated as IMRaD): Introduction, Methods, Results, and Discussion. This format of scientific publication is usually outlined in the author guidelines of many prestigious scientific journals, although other journals and types of articles may require a different and unique structure.



But why is the structure of the article so important? Typically, pre-checked scientific articles are sent to reviewers who assist the journal editor in deciding whether the article is suitable for publication. For this reason, a skillful choice of article structure and its readability can increase the chances of publishing.

Additionally, after publication, our article must be accessible and engaging enough for readers to find interesting parts and cite them in their work. Therefore, articles should not only report on our findings but also persuade the audience that our research is innovative, intriguing, and has a significant effect on our scientific field. For this reason, it's crucial to logically emphasize key elements of the article such as the motivation for the study, novelty, key findings, and the implications arising from our work.

When we already know what a scientific article is, what it consists of, and what characterizes it, we can raise the question: does every doctoral student have to prepare a scientific article? The answer to this question can be found in art. 186. par. 1 of the Higher Education and Science Law from July 20, 2018 (Dz. U. z 2023 r., poz. 742 as amended). According to this article, the doctoral degree may be awarded to a person who has:

- 1 scientific article published in a scientific journal or in peer-reviewed materials from an international conference, which, in the year of publication of the article in its final form, was listed on the official ministry list, or
- 1 scientific monograph published by a publisher, which, in the year of publication of the monograph in its final form, was listed on the official ministry list, or a chapter in such a monograph, or
- a work of art of significant importance.

Therefore, to obtain a doctoral title, it is not necessary to demonstrate the authorship of the scientific article. The legislator also takes into account the authorship of a scientific monograph or a work of art of significant importance.

This is particularly important for PhD students who represent scientific fields where publishing of scientific articles is not as common. Examples may include humanities and arts, where a common practice is to present artistic works (such as musical compositions, literary works, or paintings) as the achievement necessary to meet basic requirements. It's also important to remember that meeting the minimum requirements may not be sufficient to obtain a PhD. This is because the University may add additional requirements. An example of such a practice could be adding to the education program the necessity to publish a certain number of scientific articles with a specified ministerial score (e.g., each publication worth a minimum of 40 points, totaling at least 100 points).



In summary, scientific articles are the primary tool for researchers to disseminate the results of their research. In many disciplines, the quality and quantity of scientific publications are indicators of a researcher's status, and the publishing of research papers allows for career development. Sometimes it even means survival in the annals of science, where the prevailing belief is often "publish or perish." As an author of several articles, I greatly recommend writing them. In my opinion, scientific articles allows me to share my research with the scientific community and enables me to evaluate my results and develop my scholarly profile. To conclude, a small piece of advice from me: Experiment, write and publish! (the order of words does not matter here)



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