

DOI: 10.7596/taksad.v7i4.1860

Citation: Bakanov, R., Egorova, L., Mayorov, V., Tumanov, D., & Tyabina, D. (2018). Popularization of Science in the Russian Mass Media: Challenges of Multimedia Formats. *Journal of History Culture and Art Research*, 7(4), 381-386. doi:<http://dx.doi.org/10.7596/taksad.v7i4.1860>

Popularization of Science in the Russian Mass Media: Challenges of Multimedia Formats

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Abstract

This article reveals the problems that are typical for the current state of popularization of scientific knowledge and scientific achievements in the Russian mass media. In terms of possible efficiency and effectiveness the authors analysed new formats currently used to cover the topic of science in the press at both the federal and regional levels. The content and comparative analyses of the five most popular Russian scientific journals and their websites (from the quality of articles to the structure of the websites of these journals, gaming, infographics, and the use of social networks in the practice of scientific popularization) enable us to conclude that journalists still have not explicitly taken full advantage of the new multimedia features provided by the Internet. In our opinion, this practice is not conducive to the "promotion" of the results of scientific research on mass audience. The authors of the article note the poor training of students of faculties and departments of journalism in the Russian universities concerning their acquired competencies related to their possible future professional activity in scientific or popular science journalism. The results of the research supplement the conclusions through the examples from the current practice of the Russian popularization of scientific knowledge to the results of research contained in current literature.

Keywords: Russian journalism, Popular science journalism, Science, Popularization of scientific knowledge, Multimedia, Gaming, Internet, Social networks, Website.

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Introduction

The purpose of the article is to identify and study the practice of popularizing scientific knowledge with the help of websites and accounts in the social networks of leading Russian popular science journals.

Now, the narrator's skill directly influences on whether he will be able to gain the audience's interest to his subject or not. To cover the topic of science in the media and its achievements, the authors need not only serious knowledge of the issue, but also the ability to communicate information to a wide audience in an easy and simple way (not primitively), to convey the meaning of certain scientific facts, phenomena or discovery without any distortion. The modern practitioner of the popularization of scientific knowledge must have a way with words to create images that facilitate the perception of the described phenomena by associative thinking, to explain the meaning of scientific terms that are incomprehensible at first glance, to write in a simple way about complex things.

At the same time, he needs to gain the capabilities of multimedia platforms and use information and communication technologies in order to reach a significant segment of the audience that does not read newspapers and magazines and does not watch TV, but is constantly online. If the author wants to be understandable to Internet consumers, then he should study the network behaviour of the audience. It is necessary to know them and adapt to them.

In this article, the term "Popularization of scientific knowledge" refers to the definitions that A. Sergeev formulated in his studies (2008): 1) "The process of dissemination of scientific knowledge in a modern and accessible form for a wide range of people, who have a certain level of training to obtaining information; 2) "Interpretation" of specialized knowledge into the language of a poorly prepared reader, listener".

Throughout its history, the popularization of the science of the mass media around the world has been turned to a layman in the relevant field of knowledge. For example, at the beginning of the 18th century, its target audience in Russia was literate population called to the civil service, who needed to improve their educational level. In Russia N.I. Novikov was one of the first famous publishers whose educational activities (second half of the XVIII century) gave an impetus to the expansion of the audience of social groups in the popular scientific audience.

At present, a practitioner of the popularization of science requires not only skilful in writing, but also implement these skills on a multimedia platform, in the context of new forms of information dissemination. It is necessary to learn not only how to write, but also know and effectively use new, audiovisual forms of popularization of scientific knowledge. These forms together with the printed version should help the audience understand and comprehend complex scientific facts and phenomena, and possibly engage in the process, then independently prepare texts.

The quality of popularization of scientific knowledge in the mass media has repeatedly become the subject of scientific research by scientists from different countries. The results of our study supplement the conclusions of such authors as M. Bucchi (2012), P. Bowler (2015), D. Brossard (2009), L. Merhy (2016), A. Crece (2015), H.P. Peters (2013), Z. Pavic, A. Sundalic (2017), A.S. Scherer (2010), M.M. Bassols, A. Cros, A.M. Torrent (2013), E.G. Konstantinova (2009), G.G. Kopylov (2004), E.A. Lazarevich (1981), I.Yu. Lapina (2007), V.V. Uchenova (1968) in the field of the quality of the practice of modern popularization of scientific knowledge in the Russian media and the application of various multimedia techniques aimed at simplifying the perception and effectiveness of mastering information to the proposed audience. The results of the research can be included in programs for training journalists – practitioners of science in universities, further training courses or short-term creative seminars, as examples of the current process of popularizing scientific knowledge in Russia.

Methods

The empirical basis of the research comprised the publications on the scientific achievements published in the five most popular Russian scientific editions, as well as their websites and accounts in social networks: “Nauka i Zhizn” (<http://nkj.ru>), “Znanie – Sila” (<http://znanie-sila.ru>), “Vokrug Sveta” (<http://vokrugsveta.ru>), “Populyarnaya Mekhanika” (<http://popmech.ru>), and “Tekhnika Molodezhi” (<http://technicamolodezhi.ru>). The chronological period of the study was 2015-2017. We were interested in how the editions of traditional popular science media mastered the Internet and used their own multimedia resources to effectively popularize scientific knowledge among the audience.

During the current research the following methods were applied:

1. A meaningful analysis of the content of the given editions and their sites, as well as the accounts in social networks to reveal the forms of promotion that the editions began to use while mastering the cyberspace, and the way that these forms were aimed at simplifying the perception and effectiveness of obtaining information to the proposed audience;
2. Comparative method, which enables to determine the extent and how often the editions of popular science journals use various methods of popularizing scientific knowledge.

Results and Discussion

1. Editorial offices of popular science media use little possibilities of Internet sites to popularize scientific knowledge. The prevailing form of submitting information about science on websites continues to be a printed text. In the magazines “Vokrug Sveta” and “Nauka i Zhizn” the text is published either in a curtailed form, or simply “breaks off” (sometimes in a half-word). In “Populyarnaya Mekhanika” the articles are posted on the site in the “one-to-one” ratio. All texts are accompanied by photographic material, which is sometimes not immediately understandable in terms of content.

2. Some editorial offices have difficulties with monitoring the quality of their website publication. This can be seen on the websites of the magazines “Znanie – Sila” and “Tekhnika – Molodezhi”. The sites have several pages for headings. There are links to news and several recently published articles in the magazine on the front pages. However, opening other pages, the readers can get frustrated and feel “deceived”. In section “Headings” there are articles published from 2009 to 2012, but the latest publications are not given. In the “Archive” section readers can find the journal’s issues since 1933, but in order to find and read the target article it is necessary to know exactly which of the issues it was published in, because you will have to buy the issue. There is no advanced search by author or article’s title in this section. Here the readers can buy issues for 2010-2015. The editorial offices of other journals offer such a service, but they do not promote it as intrusively as in the journals “Znanie – sila” and “Tekhnika – Molodezhi”.

3. The websites of the popular scientific publications studied so far do not actively use technical, technological and creative opportunities for popularization of scientific knowledge offered by the Internet platforms. The most developed form for the present is *interactivity* – the opportunity for each reader to comment on the publication on the site or posted on social networks. On the websites of the magazines “Nauka i Zhizn”, “Vokrug Sveta” and “Populyarnaya Mekhanika” the audience commented on articles more actively than they did in social networks, where each post (the announcement of the material and a link to its address on the journal's website) accumulated more “likes” (several dozens each) and “re-posts” than comments. The editions’ sites (with the exception of “Populyarnaya Mekhanika”) have a separate section “Forum”, where readers can discuss the quality of publications in the journal and magazine, offer their topics for coverage, criticize or praise the editors. For example, a large space on the forum of the site of the journal “Tekhnika – Molodezhi” is taken by negative letters from readers who are

not satisfied with the editorial policy of the newspaper. There is little discussion of articles in comparison with other editions.

4. Some editorials apply new forms of popularization of scientific knowledge on their portals. For example, the magazine "Nauka i Zhizn" has a video section, in which stories are collected in an accessible form, narrating about specific scientific facts. Each of the stories has several thousand views. Also, there is a daily post – "Fact of the Day". It is a short (1 sentence) message with a link to a recent article on the portal. In our opinion, such a way can be effective: it is enough for someone to become acquainted with a fact, others will want to go over the details to the article published in full. The editorial staff of the journal "Populyarnaya Mekhanika" together with the leading Russian publishing houses offer its readers to pass online tests devoted to the actual problems of modern science or its most important events. At the time when this article was prepared, the text "What do you know about the Russian cosmonautics?" was topical. Once the person gave the correct answers, the visitor could try to win the prizes: popular science books. Tests, the results of which have already been summed up, are also freely available: they can be passed at any minute. Have you made a mistake? It does not matter, because you can answer questions in unlimited number of times.

In addition to the tests, on the web portal of the edition "Populyarnaya Mekhanika" there is a section "Lecture room". But it deceives the audience's expectations: instead of compiling video files of speeches by well-known scientists, users are offered extended announcements of lectures with attractive headings ("Is intellect transmitted by inheritance?", "How is it to be "normal"?", etc.) and illustrations. To watch many of the lectures, you need to buy a ticket. Therefore, in our opinion, this section can be considered rather one of the marketing techniques aimed at attracting the audience to a commercial product (lecture of a scientist). Hence, the idea of popular science is realized through a possible commercial benefit.

5. The centre stage to the process of popular science is still taken by the published text. Despite the further development of online sites and communicative multimedia capabilities, it is the conventional (not visual) text that becomes the main component of online testing in "Populyarnaya Mekhanika" and in the heading "Fact of the Day" in "Nauka i Zhizn". The visual text (photo reports, infographic, gaming – the process of using game thinking and the dynamics of games for engaging the audience and solving problems) is not used yet. Even in the posts in social networks, the emphasis is put on the acceptance of the printed text, and not on the accompanying pictures, although they should receive the attention of the readers as the semantic "anchors".

6. In the modern practice of the Russian media, the problems of science do not receive attention duly. In our opinion, the editorial offices of the five studied editions do not fully use their Internet resources to popular science. They almost duplicate the printed issues of publications. To interest new audience, first and foremost, the young, it is vital to understand the target audience groups of journalists' published information in the Internet, and know public preferences in this area. It is necessary to combine different forms of popularization, focusing specifically on the unhindered distribution of popular scientific information through its own network resources, and not on the currently observed positioning of sites as an online store of electronic versions of journals and magazines. It is crucial to strengthen the educational function of these resources, work on the quality of information and forms of popularization, and only then seek to monetize labour.

7. At present, the following problems of popularization of scientific knowledge are typical for the modern Russian media space:

- indifferent attitude to science of a significant part of future and practicing journalists;
- difficulties in mastering the art of scientific popularization;

- inadequate training of students at faculties and departments of journalism of Russian universities concerning their acquired competencies related to their possible future professional activities in the field of scientific or popular science journalism;
- the lack of a high status of a scientific journalist in modern society;
- commercial instability of popular science projects and the resulting low level of income in this area;
- inability of projects of this direction to the current market conditions in the country, based on the lack of an effective management system, marketing strategy, the resulting low rating and the inability to attract the financing necessary for their successful operation;
- insufficient degree of public interest in the development of popular science;
- limited state support for this sphere;
- due to certain stereotypes the scientific community still tends to form an ambiguous attitude towards the popularization held by colleagues, which can jeopardize the scientific career of practitioners of popular science.

8. The situation in the Russian media market with the popularization of scientific achievements calls for new and young authors to change and prepare in high schools for popular science journalism. We need initiative and creative professionals who could gradually restore the authority of scientific journalism in Russia.

Conclusion

The results of our study complement the findings of Y. Zhu and K. Purdam (2017), F. Ren and J. Zhai (2013), F. Papanelopoulou, A. Nieto-Galan and E. Perdiguero (2009) through the results of the identification of the practice of popularizing scientific knowledge in the well-known Russian popular science magazines and examples of the use in this process of editorial sites and resources in social networks. The obtained results also supplement the studies of Z. Pavic, A. Sundalic (2017), A.S. Scherer (2010), M.M. Bassols, A. Cros, A.M. Torrent (2013) in terms of the possibilities of transforming popular scientific media texts and using in them techniques to attract and keep the audience' attention when they are republished on various web resources of the editorials. Following M. Bucchi (2012), P. Bowler (2015), G.G. Kopylov (2004) and E.G. Konstantinova (2009) we believe that modern editions should use more diverse available multimedia resources, technologies and opportunities for popularization of scientific knowledge.

Acknowledgements

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

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