

UDC 008

## Museum as a tool for interaction between science and society

**Oleg A. Smirnov**

PhD in Physics and Mathematics, Associate Professor,  
Department of Applied Mathematics and Computer Science,  
Russian State University named after A.N. Kosygin (Technology. Design. Art),  
115035, 52/45, Sadovnicheskaya str., Moscow, Russian Federation;  
e-mail: smirnovoleg1952@mail.ru

### Abstract

The article discusses the importance of interaction between science and society, as well as the role of museums in this process. Various forms of scientific museums and their functions are described, such as education, preservation and transfer of knowledge, the formation of cognitive interest and professional guidance. Based on the analysis of the activities of scientific museums, the importance of museums for scientists and researchers who can use the collections and archives of museums in their work is indicated. The article also emphasizes the special role of scientific museums in the formation of a culture of scientific knowledge among schoolchildren. The article lists various types of science museums, such as natural science, engineering, medical, history, nature, archaeological, space, science and technology, mathematics and ecology museums. Overall, the article highlights the importance of science museums in education and community development.

### For citation

Smirnov O.A. (2023) Museum as a tool for interaction between science and society. *Yazyk. Slovesnost'. Kul'tura* [Language. Philology. Culture], 13 (4), pp. 8-13.

### Keywords

Science museums, society, scientific community, exhibitions, collections, culture of education.

---

## Introduction

Interaction of society and science is one of the most significant problems of modern society. Science helps society solve problems and create new technologies that improve the quality of people's lives. Society, in turn, supports science by providing it with financial and other resources necessary for research. Museums play an important role in preserving scientific knowledge and passing it on to future generations. They can also stimulate cognitive interest and professional orientation of pupils and students. In addition, museums can serve as venues for scientific conferences, exhibitions and other events that promote the development of science and attract public attention to scientific achievements. At the same time, science for society is often an institution that does not directly relate to social relations, resulting in a decrease in the overall level of education, loss of interest in science and, consequently, limited reproduction of scientific personnel, a decrease in the prestige of this type of activity. To solve this problem, there are forms of dialogue between science and society, the form of which can be a museum space.

## Main content

Currently, various forms of scientific museums of a wide range of profiles are most actively developing. These include traditional museums of nature (for example, the Museum of Natural History in New York, Geology, Ethnography, Engineering and Technology (Leonardo da Vinci Museum of Science and Technology in Milan). There are scientific museums in virtually all countries of the world.

It is obvious that education is one of the main functions of museums. Museums provide visitors with a unique opportunity to get acquainted with the history, culture and scientific achievements of mankind. They are often implemented in an active form, as, for example, in the Museum of Science and Technology "Eksperimentaniya" in Nizhny Novgorod. They play an important role in the preservation and transfer of knowledge and experience from one generation to another, forming a stable cognitive interest and a culture of knowledge.

In general, museums offer educational programs, exhibits, exhibitions, lectures, seminars, conferences, and other events that help visitors deepen their knowledge and understanding of the topics represented in the museum's collections. These programs can be targeted at different age groups, interests and needs of visitors, but in most cases, they are aimed at visitors in the most active stage of the formation of cognitive interest – middle school students and are significant tools for career guidance.

The role of museums is no less significant for scientists and researchers. They can provide access to collections and archives for researchers and scholars. Museums also conduct their own research on various topics related to their collections, and in many cases are the only source of information on scientific topics. It is obvious that some museums may be designed to present historical or cultural aspects without the use of scientific data, such as a "one-piece" or limited-collection museum. However, most museums strive to ensure that their exhibits and programs are based on research and evidence to ensure the accuracy and integrity of the information they provide to visitors.

Science museums play an important role in the dialogue between science and society, as they are places where scientific knowledge and achievements can be accessible and understandable to a wide audience. Museums can help people understand complex scientific concepts and technologies and show how they are applied in everyday life.

Several sources have shown that science museums can stimulate interest in science among children and young people, which can lead to more people interested in science careers. Museums can also

provide opportunities for educational programs that help pupils and students develop scientific skills and interest in science.

Science museums can serve as venues for scientific conferences, exhibitions and other events that promote the development of science and attract public attention to scientific achievements. Such events can help scientific researchers communicate with a wider audience, exchange ideas and experiences, and attract new people to the scientific field.

There are many types of science museums, here are some of them:

1. Natural science museums: dedicated to various sciences such as biology, geology, astronomy and physics.

2. Technical museums: show various technologies and innovations in the fields of mechanical engineering, aviation, electronics, etc.

3. Medical museums: present the history of medicine and its achievements, as well as exhibits related to diseases and treatments.

4. History museums: show historical artifacts and objects associated with different eras and cultures.

5. Nature museums: dedicated to different species of animals, vegetation and ecosystems.

6. Archaeological museums: display artifacts and objects from ancient civilizations and cultures.

7. Space museums: dedicated to space exploration and featuring exhibits related to space flight and exploration.

8. Science and technology museums: show various scientific and technological achievements and innovations.

9. Mathematics museums: present mathematical concepts and theories and their applications in various fields.

10. Ecology museums: dedicated to the study of the environment and its protection, as well as exhibits related to environmental issues.

Let's analyze the activities of some scientific museums in the world.

One of the science museums in Singapore is the Science and Technology Museum "Science Center Singapore". This museum offers more than 100 interactive exhibits that allow visitors to learn more about science, technology, innovation and the environment. The museum has various exhibit areas such as "Space", "Life", "Technology" and "Innovation", which allow visitors to delve into various topics and learn more about scientific discoveries and achievements. In addition, the museum hosts lectures, events and educational programs for schoolchildren and students, making it an excellent place for learning and development.

The Peter the Great Museum of Anthropology and Ethnography in St. Petersburg is one of the largest ethnographic museums in the world. Its exhibition includes more than 2 million exhibits that represent various cultures and ethnic groups of the world. In the museum one can see collections of folk costumes, religious objects, weapons, jewelry, household items and much more. The museum also has separate rooms dedicated to the cultures of the peoples of Siberia, the Caucasus, Central Asia, China, Japan and other regions of the world. The museum also hosts temporary exhibitions and events focusing on various topics in ethnography and anthropology.

The National Museum of Nature and Science in Tokyo includes collections of scientific exhibits dedicated to nature, science and technology. In the museum one can see collections of minerals, plants, animals, as well as exhibits related to astronomy, physics, chemistry and other sciences. The museum also has separate rooms dedicated to the history of science and technology in Japan, as well as temporary exhibitions and events on various science and technology topics.

Therefore, science museums play an important role in society by providing access to scientific information and knowledge. They perform an educational function, providing an opportunity for learning and popularization of science. They host exhibitions, lectures, tours and other events that help people understand science and its importance. In addition, science museums preserve collections, artifacts, and research that are of historical and scientific significance. They also conduct their own research and preserve the results for future generations. No less significant is the fact that science museums are places for entertainment and active recreation. They offer interactive exhibits, music concerts, theater productions and other events that attract visitors of all ages. The social function of a science museum is that they can strengthen connections in a community by creating a place for communication and social contact. They also contribute to the development of tourism and the economy of the region.

## Conclusion

Generally, science museums play an important role in society by providing access to knowledge and research, preserving historical and scientific collections, and providing a place for learning, entertainment, and social interaction.

## References

1. Egorova T.E. (2002) *Tekhnika v kontekste kul'tury: estestvenno-nauchnye muzei FRG* [Technology in the context of culture: natural science museums of Germany]. *Vestnik kul'turologii* [Bulletin of Cultural Studies], 2, pp. 83-88.
2. Gadzhiev M.M., Shakhmardanov Z.A., Razakhanova V.P. (2011) *Regional'nye aspekty ekologicheskogo obrazovaniya shkol'nikov* [Regional aspects of environmental education of schoolchildren in Dagestan]. In: *Sbornik materialov XI Mezhdunarodnogo metodologicheskogo seminara «Biologicheskoe i ekologicheskoe obrazovanie: metodologiya, teoriya, metodika»* [Proc. Int. Conf. "Biological and environmental education: methodology, theory, methodology"]. Saint Petersburg: Tessa Publ., pp. 161-163. EDN SJYMOR.
3. Khorina V.V. (2018) *Provintsial'naya nauka: gorodskie muzei i nauchnye obshchestva Eniseiskoi gubernii poslednei chetverti XIX-nachala XX vv.* [Provincial science: city museums and scientific societies of the Yenisei province in the last quarter of the 19th and early 20th centuries] Krasnoyarsk: Krasnoyarsk State Agrarian University.
4. Klyukina A.I. (2014) *Muzei estestvenno-nauchnogo profilya v dukhovnoi zhizni obshchestva* [Museum of natural science in the spiritual life of society]. *Vestnik Kemerovskogo gosudarstvennogo universiteta kul'tury i iskusstv* [Bulletin of the Kemerovo State University of Culture and Arts], 27, pp. 23-29.
5. Kul'shin V.A. (2015) *Znachenie akademicheskogo (nauchnogo) muzeya v sisteme obrazovaniya, kul'turno-nravstvennogo vospitaniya naseleniya i populyarizatsii nauchnykh znaniy* [The importance of the academic (scientific) museum in the education system, cultural and moral education of the population and the popularization of scientific knowledge]. *Muzei nauchnykh i uchebnykh zavedenii: istoriya, vklad v sfery znaniya i obrazovaniya* [Museums of scientific and educational institutions: history, contribution to the spheres of knowledge and education], pp. 130-136.
6. Murzintseva A.E. (2006) *Muzei Rossiiskoi akademii nauk: istoriko-kul'turologicheskii analiz. Dokt. Diss. Abstract* [Museums of the Russian Academy of Sciences: historical and cultural analysis. Doct. Diss. Abstract]. Ulan-Ude.
7. Razakhanova V.P. (2014) *Novye tekhnologii v metodicheskoi podgotovke studentov-biologov v pedagogicheskoy vuz* [New technologies in the methodological training of biology students at a pedagogical university]. *Izvestiya Yuzhnogo federal'nogo universiteta. Pedagogicheskie nauki* [News of the Southern Federal University. Pedagogical sciences], 4, pp. 100- 106. EDN SAWOLJ.
8. Razakhanova V.P. (2013) *Metodicheskaya podgotovka studentov biologov k resheniyu zadach obucheniya uchashchikhsya* [Methodological preparation of biology students for solving problems of teaching students]. *Izvestiya Dagestanskogo gosudarstvennogo pedagogicheskogo universiteta. Psikhologopedagogicheskie nauki* [News of the Dagestan State Pedagogical University. Psychological and pedagogical sciences ], 3(24), pp. 90-93. EDN SEDKSL.
9. Vorontsova E.A. (2015) *Muzei kak bazovyi element informatsionnoi infrastruktury istoricheskoi nauki* [Museum as a basic element of the information infrastructure of historical science]. *Rol' muzeev v informatsionnom obespechenii istoricheskoi nauki* [The role of museums in the information support of historical science], pp. 40-61.
10. Zeinalova E.V. (2018) *Interaktivnye nauchnye muzei: zarubezhnyi opyt i otechestvennye perspektivy* [Interactive scientific museums: foreign experience and domestic prospects]. *Sotsial'nye i kul'turnye praktiki v sovremennom rossiiskom obshchestve* [Social and cultural practices in modern Russian society], pp. 18-18.

---

## Музей как инструмент взаимодействия науки и общества

**Смирнов Олег Аркадьевич**

Кандидат физико-математических наук, доцент,  
кафедра Прикладной математики и программирования,  
Российский государственный университет им. А.Н. Косыгина  
(Технологии. Дизайн. Искусство),  
115035, Российская Федерация, Москва, ул. Садовническая, 52/45;  
e-mail: smirnovoleg1952@mail.ru

### Аннотация

В статье рассматривается важность взаимодействия науки и общества, а также роль музеев в этом процессе. Описываются различные формы научных музеев и их функции, такие как просвещение, сохранение и передача знаний, формирование познавательного интереса и профессиональной ориентации. На основании анализа деятельности научных музеев указывается на значимость музеев для ученых и исследователей, которые могут использовать коллекции и архивы музеев в своих работах. Также в статье подчеркивается особая роль научных музеев в формировании культуры научного познания у школьников. В статье перечислены различные виды научных музеев, такие как естественно-научные, технические, медицинские, исторические, музеи природы, археологические, музеи космоса, науки и технологии, математики и экологии. В целом, статья подчеркивает важность научных музеев в образовании и развитии общества.

### Для цитирования в научных исследованиях

Смирнов О.А. Музей как инструмент взаимодействия науки и общества // Язык. Словесность. Культура. 2023. Том 13. № 4. С. 8-13.

### Ключевые слова

Научные музеи, общество, научное сообщество, экспозиции, коллекции, культура просвещения.

### Библиография

1. Воронцова Е.А. Музей как базовый элемент информационной инфраструктуры исторической науки // Роль музеев в информационном обеспечении исторической науки. 2015. С. 40-61.
2. Гаджиев М.М., Шахмарданов З.А., Разаханова В.П. Региональные аспекты экологического образования школьников в Дагестане // Сборник материалов XI Международного методологического семинара «Биологическое и экологическое образование: методология, теория, методика». СПб.: Тесса, 2011. С. 161-163. EDN SJYMOB.
3. Егорова Т.Е. Техника в контексте культуры: естественно-научные музеи ФРГ // Вестник культурологии. 2002. № 2. С. 83-88.
4. Зейналова Е.В. Интерактивные научные музеи: зарубежный опыт и отечественные перспективы // Социальные и культурные практики в современном российском обществе. 2018. С. 18-18.
5. Клюкина А.И. Музей естественно-научного профиля в духовной жизни общества // Вестник Кемеровского государственного университета культуры и искусств. 2014. № 27. С. 23-29.
6. Кульшин В.А. Значение академического (научного) музея в системе образования, культурно-нравственного воспитания населения и популяризации научных знаний // Музеи научных и учебных заведений: история, вклад в сферы знания и образования. 2015. С. 130-136.

- 
7. Мурзинцева А.Е. Музеи Российской академии наук: историко-культурологический анализ: автореф. дисс. ... канд. культурологии. Улан-Удэ, 2006. 22 с.
  8. Разаханова В.П. Новые технологии в методической подготовке студентов-биологов в педагогическо вузе // Известия Южного федерального университета. Педагогические науки. 2014. № 4. С. 100- 106. EDN SAWOLJ.
  9. Разаханова В.П. Методическая подготовка студентов биологов к решению задач обучения учащихся // Известия Дагестанского государственного педагогического университета. Психолого-педагогические науки. 2013. № 3(24). С. 90-93. EDN SEDKSL.
  10. Хорина В.В. Провинциальная наука: городские музеи и научные общества Енисейской губернии последней четверти XIX-начала XX вв. Красноярск: Красноярский государственный аграрный университет, 2018. 462 с.