

165. Discussion on the Social Role of Science and Technology Museum

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Abstract. At present, public demand for science popularization is getting higher and higher. As an important national science popularization infrastructure, Science and technology museum are facing unprecedented opportunities and challenges. To meet the requirements of the times, continuously strive to raise the standards of our works, and achieve sustainable development, we must accurately locate their social role.

Firstly, this paper analyses the goals, features and functions of Science and technology museum. Then, this paper turns to explore the social role of Science and technology museum. In general, Science and technology museum should be located multiple roles.

Keywords: Science and technology museum, Science popularization, Social role

Introduction

With the social progress, public demand for science popularization is getting higher and higher. Science popularization has turned into a demand for adapting to the modern society and promoting life quality for public, as well as an important foundation of improving the scientific literacy. Science and technology museum are a kind of public-benefit facility serving for the members of the society. At the same time, they are an important platform to advocate scientific approaches, propagate scientific ideas, promote scientific spirit and disseminate scientific knowledge.

Since 1980s, Science and technology museum in China, not only the quantity, but also the scale of construction, have been rapidly developed. However, some new problems have appeared. For example, many museums lack of characteristic, their educational content and style are drab, the management is not enough reasonable, and so on. We can't just seek expansion of the scale, and we should make more positive change, improve the education level and develop our own characteristics, so as to meet the requirements of the times and achieve sustainable development.

The Goals, Features and Functions of Science and Technology Museum

o locate the social role of Science and technology museum, we should understand the goals, features and functions of Science and technology museum firstly. Then on this basis, the model and opinion can be presented.

The goals of science and technology museum

As an informal educational institution, Science and technology museum disseminate scientific and technical knowledge to the public by various activities. Far more important, they promote the public to understand science and technology, learn scientific and technical methods, share scientific spirit and improve the scientific literacy during this process.

The features of science and technology museum

Science and technology museum are a social cultural and educational institution, and they obviously different from other educational institutions.

Firstly, they are open. This openness reveals in every way. For example, their educational objects are all social members, their demonstrations are multidisciplinary and multifactor, and their educational patterns is flexible.

Secondly, they are participatory. The public can actively get involved, and develop their knowledge structures in the course of participating. Science and technology museum put emphasis on subjectivity of the public. They are public-oriented and strive to meet the public's needs.

Thirdly, Science and technology museum are situational. Their essence is that they build an explorations and discovery atmosphere for the public by simulating.

Fourthly, though the education of Science and technology museum is an informal education, it is intentional or planned. It has advanced educational notion, rich educational resources, and comprehensive and multi-layered educational activities.

Finally, they are scientific and interesting. Science and technology museum put emphasis on scientificity because they aim at propagating scientific knowledge and transmitting scientific information. At the same time, to gain the interest and attention of the public, keeping their interesting in education is also essential.

The functions of science and technology museum

Science and technology museum have three basic functions, some are similar to the functions of other science popularization educational institutions, but others are unique.

The first is educational function. This is the primary functions of Science and technology museum. Through such exhibitions as permanent exhibition, thematic exhibition and short-term exhibition, and diversified educational activities (for example, scientific experiments and science popularization lectures), Science and technology museum could reveal the secrets in science, develop the interest of the public in science, explore scientific methods and promote scientific spirit.

The second is service function. It provides a service for implementation of education function and development of Science and technology museum. This includes: providing information and resources about science popularization exhibition, holding training and academic exchanges for schools and other educational institutions.

The third is support function. It is used as a support for Science and technology museum to evaluate their educational function, service function and operation administration, resources development for exhibition and education, as well as deeply study for information and theory about Science and technology museum [1], so that the educational content can be more substantial and keep up with the new times.

The Social Role of Science and Technology Museum

“Care for people, service society” is the starting point and foothold for museums to implement various work. The social function and the own characterized advantages assumed by museums determine that there is no shirking the responsibility for museums to be the indispensable link and multiple roles in the current society. According to the educational function, Science and technology museum should be the disseminator of scientific knowledge, the guide of scientific



Figure 1. Functions of science and technology museum

interests and scientific concepts and the communicator between the public and the scientists. According to the service function, they should be the partner and supporter of other educational institutions. And according to the support function, they should also be the researcher on education and related theories of Science and technology museum and the collector and the performer of the historical collections.

The disseminator of scientific knowledge

It is one of the basic functions of Science and technology museum to popularize scientific knowledge and it can also absorb a wider range of educate without the limitation of age, education background and careers in order

to provide fairer education opportunities for the backwards areas and the vulnerable groups [2]. Therefore, Science and technology museum have naturally become the disseminator of scientific knowledge and the lifelong classroom for the public. Certainly, the way in which museums disseminate scientific knowledge is quite different from the past museums and other education systems in the education hierarchy. It creates a fascinating learn situation and practice place in various advanced ways and methods. Through displaying the scientific exhibits and the rich and colorful educational activities, it attracts the audience to participate in and makes them deepen their knowledge on the exhibits in an unstrained atmosphere in order to enter into the process of exploring and discovering the science.

The guide of scientific interests and scientific concepts

Currently, the target of education has been shifted from the single target of knowledge to 3D targets of “knowledge and skill”, “process and method” and “emotion, attitude and value”. Among the 3D targets, emotion, attitude and skill are the principal targets of education [3]. Therefore, the principal target of Science and technology museum is to promote the scientific spirits, to develop the scientific interests and to make the public establish the scientific world outlook, outlook on life, value and outlook on science and technology. Science and technology museum shall keep pace with the times and allow full play to own advantages. Through creating the learn situation and practice place, they give the public to experience science and apprehend science and stimulate the public interests of learning science; they propose that the public should continuously update scientific concepts in the keen learning atmosphere to develop scientific thoughts and scientific spirits and improve comprehensive quality. Therefore, on the basis of keeping enriching the connotation of exhibits, Science and technology museum can launch a series of activities of “scientific circus” and “scientific lab” to provide the public with precious opportunities to experience the funs and marvels of science, to anneal the ways and techniques of research and to know the scientific spirits of humanities and anecdotes in order to improve their interests and understanding of knowledge and master scientific methods and ideas.

The communicator between the public and the scientists

In the real society, education must be closely related to the social cultural activities and the practical life, so it gives more emphasis on the ability of the public to deal with the practical problems and to participate in the public affairs with scientific knowledge, which gives full play to the “scientific civil rights” of the public [4]. In the recent years, in order to set up the communicative bridge between science and technology and the society, and the scientific and technological workers and the public, as well as to develop the public sense of participation in science and technology and sense of responsibility of scientific and technological society, Science and technology museum have made constant efforts and trials to launch various communication activities on scientific and technological cultures in close cooperation with the social circles in order to make the public experience the charms of science and the elegance of the scientists at short range. For example, China Science and Technology Museum has held the activities of “I share my views on future with scientists”, which is an activity the national teenagers participated in to share views on future with the famous scientists, “‘Science and China’ academician forum on ‘Science Lecture’ in China Science and Technology Museum”, “Expert Volunteers” and so on. There have been many scientists flourishing on the stage of science popularizing in the museum. These activities not only promote the communication dialogues between the scientists and the public but also motivate the public to understand science, and also make museums the scientific and cultural activity center to the public and the platform to disseminate and communicate scientific cultures.

The partner and supporter of other educational institutions

Lengrand presented the educational thought of lifelong learning, which combines social education with school education and regular education with informal education tightly. As the social education place and informal education institution, Science and technology museum have formed an effective supplement and extension to schools and other educational institutions in many aspects of education aim, education objects, education content and education methods with their particular characteristics; Science and technology museum have accumulated many interesting medium and large scale scientific education appliances, so these scientific education resources and such scientific education place entitle students to feel and experience what the classroom teaching can not substitute. Meanwhile, Science and technology museum launch rich and colorful education activities through close cooperation with schools and thus they provide many kinds of service and supports for schools. For example, China Science and Technology Museum opens to the student group for free and provides an extracurricular activity place for schools; at the same time, it keeps strengthening contact and cooperation with middle and primary schools to launch “Jin Peng Lecture”, “the Future Engineers” and a series of branded activities aiming at students in order to make students deepen their understanding and comprehension to science while participating and experiencing. Besides, it holds special training classes on scientific

experiments for the science teachers in schools, which gives the teachers an opportunity to promote teaching level and broaden teaching thinking. Through various measures, teachers, students and Science and technology museum have established a close contact, and also Science and technology museum have become the base to assist schools and other regular educational institutions to reach education targets and train innovative talents.

The researcher on education and related theories of science and technology museum

Science and technology museum are not only the practitioner of science popularization education, but the researcher of education teaching. Developing academic researches and exploring the law of development, exhibition education theory, designing methods of exhibitions and exhibits and management system and mechanism of Science and technology museum, is helpful to establish the correct exhibition education theory and beneficial to develop Science and technology museum. Detailed and in-depth researches can continuously promote the level of Science and technology museum, support our high-level exhibition educational activities and timely reflect the latest research achievements in the exhibition education activities to make up the gap between educational theory and educational practice and improve effects of science popularization education. Up to now, China Science and Technology Museum has made and is making dozens of research topics, such as “National 863 Planning Topic”, “Study on Worksheet Development Based on Science and Technology Museum Resources”, and “Research on Engineering Education Based on Science and Technology Museum Resources”. Some of them have made great achievements.

The collector and performer of the historical collections

Science and technology museum are not only the accumulative treasury embodying the national and ethnological scientific and technological cultures, but also the main front inheriting the history of scientific culture. It has been pointed out in the Construction Standard of Science and Technology Museum made by the UNESCO that one of the three types of exhibits in Science and technology museum are historical collections (the originals and the replicas): “items related to developments of science and technology from ancient times to present and items collected and reserved for displaying the progress of science and technology home and abroad.” London Science Museum, National Air and Space Museum and many overseas reputable science museums all possess abundant of treasures which are strongly attractive to a great number of audiences. But in China, Science and technology museum do not have the function of collection. Therefore, this aspect shall be strengthened by collecting and displaying some precious historical collections, exploring the connotation of scientific culture behind and performing in various ways in order to coordinate exhibition and education and other purposes. In 2004, the Nation approved of giving the spacecraft Shenzhou 1 to China Science and Technology Museum for permanent collection, which is expected to be the moment for the national museum to expand the area of collection research in order to shorten the gap of scientific and industrial museums between our nation and the developed nations [5].

Conclusion

The social role of Science and technology museum shall be rich, active and developing. That what this paper illustrates are not all for it, and these social roles should be combined together or stressed on particular emphasis because of the demands of practical work of Science and technology museum. We must keep on researching, exploring and practising in order to be adapted to the demands of social developments and to better give play to its roles.

References

- [1] China Science and Technology Museum. Report on Ideas of China Science and Technology Museum [R]. Beijing, 2007.
- [2] Hao Keming. Research on Architecture of Contemporary Chinese Education [M]. Guangdong: Guangdong Education Press, 2001.
- [3] China National Institute of Educational Research. Report on Pedagogy-based Ideas of China Science and Technology Museum [R]. Beijing, 2006.
- [4] Scientific and Technical Information Institute of China. Report on Development of International Science Popularization and Ideas of China Science and Technology Museum [R]. Beijing, 2006.
- [5] Chen Simin, Fang Jiazeng. Study on Practice and Comparison of Science Museums between China and British [J]. Science Popularization, 2007, 1: 36-42.