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2011-2015 Review: Science Popularization in China

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Introduction

During the past five years, China has expanded the science popularization team, increased science popularization budget, accelerated the construction of science popularization facilities, and diversified the means and resources of science popularization. According to the 9th scientific literacy survey of Chinese citizens conducted in 2015, 6.20% of Chinese citizens are scientifically literate, up from 3.27% in 2010, beating the initial target that more than 5% of Chinese would be scientifically literate by 2015 and laying a solid foundation for further enhancement of the public's scienceliteracy in the next five years.

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Science Popularization Team

According to the Science Popularization Statistics of China (2015 edition), the country's science popularization team has been expanding on a continuous basis. By 2015 the total workforce dedicated to the cause amounted to 2,012,300, that is to say, there were 14.71 science popularization staffper 10,000 people, up by 14.89% and 12.63% from 2010. Part-time workforce increased from 1,528,000 in 2010 to 1,777,000 in 2015, and registered volunteers of science popularization rose from 2.39 million in 2010 to 3.37 million in 2013.

In response to the shortage of skilled specialists dedicated to science popularization at public venues, large enterprises and research institutes, during the Five-year Plan period, related institutions joined hands with several universities to launch special training programs, with a view to fostering professionals with expertise in science popularization. In 2012 China Association for Science and Technology and the Ministry of Education launched a pilot postgraduate program in six universities, including Tsinghua University and Beijing Normal University, to cultivate professional talents of science popularization. In 2015 the first batch of 98 master's degree holders graduated and entered the labor market.

As the science popularization workforce continues to grow, spending is also on the rise and mostly comes from the government. Total appropriation for science popularization amounted to RMB 15.003 billion in 2014, up by 50.76% from 2010, with 76.01% from the government, up by about 8 percent from 68.42% in 2010. Per capita spending was RMB 4.68, up by 78.97% or RMB 2.07 from 2010.

Science Popularization Museums

The construction of science & technology museums, which sparks the public's interest in science and enlightens people's science perceptions, has been an issue of public concern. Over the past five years, China has strengthened efforts to build science museums. In 2015 there were a total of 1,058 S&T museums in the country, up by 29% or 244 from 2010. Total visitor arrivals jumped more than 78% in the period to 141.07 million. The area of science popularization facilities per 10,000 people was 53 square meters, up by 43% from 2010.

In the five years, China built and renovated 42 S&T museums, and now 155 museums have lived up to national standards, and over50 are still under construction. 220 mobile S&T museums were developed, and 1,071 caravans dedicated to science popularization were running on the road. China Digital Science and Technology Museum recorded an average daily page view of more than 2.2 million. The central government granted RMB 346 million in fiscal subsidies in 2015 to fund the free opening of 92 science museums. Construction of the education bases of science popularization was also advancing at a steady pace. The number of S&T museum increased from 555 in 2010 to 724 in 2014. The total number of national bases of science popularization exceeded 5,000, including those specifically dedicated to science subjects like land resource, environmental protection, forestry, earthquake and meteorology.

Opening Research Institutes to the Public

The past five years has witnessed the successful organization of numerous wonderful public S&T activities. 622 million people participated in public scientific activities in 2014, and at least 6,712 research

institutes and universities & colleges opened science popularization activities to the public, up by 33.3% from 2010.

These activities are carried out in diverse and innovative forms with an emphasis on their interactive and exemplary natures. Take the 2015 Science & Technology Week as an example, a series of activities took place across the country, including "S&T through train", "S&T ambassadors to communities, villages, enterprises and military camps", "opening research institutes, universities & colleges to the public", "bringing mobile S&T museums to northern Shaanxi", "recommendation of national excellent works of science popularization", "national contest of popular science interpretation", "national contest of popular science microfilm" and "competition of future engineers". These activities have motivated the entire society to learn more about popular science, and given full play their important roles in popularizing science and technology and improving the general public's science literacy.

China's science popularization activities have also drawn interest from foreign institutions. At the main venue of the 2015 Popular Science Day, 37 technology organizations, like Harvard University, University of Switzerland and Royal Society of Chemistry, from 23 countries and China's Taiwan and Macau, brought 50 interactive experience programs. These programs included a display of nanometer-themed materials, food and instruments by the American Association of Nanoscience and Technology, the exhibition of "understanding air" by the Massachusetts Institute of Technology, Germany's rocket launch program, as well as Technion-Israel Institute of Technology's "from imagination to innovation" contest.

Science Popularization Websites

During the 2011-2015 period, China has diversified the means of science popularization. The traditional means, like books, journals, radio & TV programs, continued to play big roles, while new media outlets represented by mobile Internet are mushrooming as important means ofsciencepopularization. China had 2,652 science popularization websites in 2015, up by 24.7% from 2010.

The Ministry of Environmental Protection opened a WeChat public account, offering about 2.3 million hours of short films themed on the war against pollution. The National Health and Family Planning Commission advanced the construction of the 12320 health hotline network, and its Weibo accounts at Sina and Tencent have bolstered their influence. The 12320 health hotline has covered about 960 million people. China Meteorological Administration has been striving to build an integrated platform to disseminate meteorological knowledge through its weather channel, weather-themed Weibo accounts and magazines, and its online weather service has 26.35 million users. The Central Committee of the Communist Youth League has mobilized local committees to set up over 128,000 certified Weibo accounts to popularize science.

China Association for Science and Technology launched a special program in 2015 to build an online platform dedicated to science popularization, implement the "Internet+science popularization" action plan, create a well-known brand to facilitate science popularization, and kick off the bidding process for 19 projects under the special program. 12 institutions, including xinhuanet.com, Tencent, Baidu, gmw.cn, guokr.com and yesky.com, were selected and mandated to carry out the projects. The adoption of PPP model to advance the projects has demonstrated their powerful abilities to mobilize the social forces and integrate science resources. In less than four months, these websites produced 1.4TB of data in relation to science popularization, with 1.46 billion page views and 80% from mobile terminals.China Association for Science and Technology launched a special program in 2015 to build an online platform dedicated to science popularization, implement the "Internet+science popularization" action plan, create a well-known brand to facilitate science popularization, and kick off the bidding

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Science Popularization in Rural Regions to Be Strengthened

6.2% of Chinese citizens had scientific literacy in 2015, ahead of the initial target that 5% of Chinese have scientific literacy by 2015. It's noteworthy that only 1.7% of the rural population has scientific literacy due to the huge gap between the rural and urban regions, suggesting more work has to be done to strengthen scientific literacy among the teenagers living in the countryside.

Since 2012, with the support of the China Association for Science and Technology and the Ministry of Education, the Foundation for the Development of Science and Technology Museums in China has raised RMB 20 million from the public to fund a program to build science and technology museums at rural middle schools. By the end of October 2015, a total of 171 museums have been set up across 29 provinces, autonomous regions, municipalities and military corps.

These museums feature a full set of equipment, including 16-18 pieces of science popularization works, a digital museum with 4-5 computers, technology-themed creative works from students as well as multimedia projection equipment. The museums enable adolescents in the countryside, especially those in the impoverished and ethnic regions, to get access to almost the same popular science resources as their counterparts in the city.

After a science and technology museum is put into service, residents and students near the museum can make early appointments and visit the museum for free. Many rural students have brought their parents to pick up scientific knowledge at the museum.

It's learned the foundation plans to seek help from all sectors of the society to build 1,000 science and technology museums at rural middle schools in the next five years.

Statistics about Science Popularization

Proportion of citizens with scientific literacy

6.20% of Chinese citizens had scientific literacy in 2015, up by 90% from 3.27% in 2010, beating the initial target that more than 5% of Chinese have scientific literacy by 2015.

Science popularization talents

The total workforce dedicated to science popularization amounted to 2,012,300, that is to say, there were 14.71 science popularization staff per 10,000 people, up by 14.89% and 12.63% from 2010 figures. The total number of registered volunteers of science popularization rose from 2.39 million in 2010 to 3.37 million in 2013.

Science popularization expenditure

Total appropriation for science popularization amounted to RMB 15.003 billion in 2014, up by 50.76% from 2010, with 76.01% from the government, up by nearly 8% from 68.42% in 2010. Per capita spending was RMB 4.68, up by 78.97% or RMB 2.07 from 2010.

Science popularization museums

In 2015 there were a total of 1,058 S&T museums in the country, up by 29.89% from 2010. The area of science popularization facilities per 10,000 people was 53.23 square meters, up by 43.46% from 2010. Total visitor arrivals jumped by 78.16% from 2010 to 141.07 million. (Data collected as of 2015)

(Source: Science and Technology Daily, March 7, 2016)