A Case Study Analysis of Social Organizations Participate in Science Communication in China

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Abstract--**The research mainly uses the case studies method, the qualitative research method and the comparison study method to analyze whether social organizations participate in science communication in China is valid.**

About the contents of the research, the study firstly introduces the establishment of the Activity Center in the First Senior High School in Hong he county, Yunnan province. Secondly, the study describes the management and operation mode of the center. Next, the main body of the study focuses on whether the Activity Center as a science communication approach is a feasible way, in this part of the paper, it compares the functional properties of the Activity Center in the case and the general science and technology activity centers in China.

The conclusion of the study is that the Activity Center in the case can be used as a carrier for science communication, for it disseminate science knowledge, has scientific concept, put emphasis on scientific training methods, and can improve the scientific literacy of students. The research also analyzes the conditions for social organizations involved in science communication. The conditions include establishing interests sharing, investment, motivation and supervision mechanisms to form a multi-win-win situation.

I. IMPORTANCE OF THE RESEARCH

A. Social organizations participate in science communication in the developed countries

The main mode of science communication in developed countries includes education, regular science activities, (newspapers, magazines, radio and TV, etc.), as well as mass media science venues. The funding in this regard comes mainly from social organizations, government, and personal donations. Let us take the case in U.S.A as an example, the National Science Foundation (NSF) are in great support of science communication work, NSF funds for science communication is mainly through informal science education, according to the nature and the scope of the science activities which gives different levels of funding, the shortage of funding for activities will be available through other funding sources. Most developed countries get it done either through taxation, other ways or encouraging social organizations and business to support science activities, for instance, the Australian Science Festival activities, 62% of its funds come from community donations. One third of the annual funding of American Museum comes from the private sectors, the proportion of collectively owned museum in the U.S. is as high as 90%.

B. Social organizations participate in science communication in China

The main ways adopted for science communication in China are almost as same as that of some other countries currently. Among them, the science communication infrastructure is an important way for citizens who gain access to science resources. China's science communication infrastructure has begun to take shape from point of view of its type and quantity. The main categories include Science and Technology Museum, Natural History Museum, Planetarium, Profession (trade, industry) Science and Technology Museum, Comprehensive Cultural and Educational Center of Science and Technology Activities, Science Activities Room, Science Bulletin Boards, Science Caravans, the Public Places with Function of Science Communication Education, the Research and Education Facilities open to the public, and Enterprises Facilities open to the public and so on. In terms of volume, at the end of 2011, there were 1681 science venues which have buildings with more than 500 square meters.

The investment in science infrastructure mainly relies on government finances in China. There are few other channels, these remains a big difference compared to that of the developed countries. From the year of 2006 to 2011, in addition to 2010, it is a special case, although the overall social donations increase year by year, in the correspondingly specific year, the social donations is still lower than the other investment in the science communication. We can see that in 2011 statistics[1], for example, the total amount of 10.53 billion yuan going into science communication funding. Among them, government funds at all levels is about 7.259 billion yuan, 68.94% of the total investment; self-financing is about 2.565 billion yuan, accounting for 24.40%; public donations is about 84 million yuan, accounting for 0.80%; Other investments being 622 million yuan, accounting for 5.91 percent. Obviously, social organizations investment ratio is lower in science communication.

[1] Ministry of Science and Technology of the People's Republic of China, "*China Statistics of Science Popularization*," Beijing: Science and Technology Academic Press, pp.58, 2013.

TABLE1: THE SCIENCE COMMUNICATION FUNDING STRUCTURE FROM THE YEAR 2006 TO 2011 IN CHINA (UNIT: 100 MILLION)

The year / The structure	2006	2008	2009	2010	2011
Government funding	32.50	47.00	58.94	68.08	72.59
Social donations	0.78	0.83	0.98	1.37	0.84
Self-financing	10.62	12.30	19.29	23.79	25.65
Other inputs	2.92	4.82	7.91	6.26	6.22

The data source: Ministry of Science and Technology of the People's Republic of China, "*China Statistics of Science Popularization*," Beijing: Science and Technology Academic Press, pp.58, 2013.

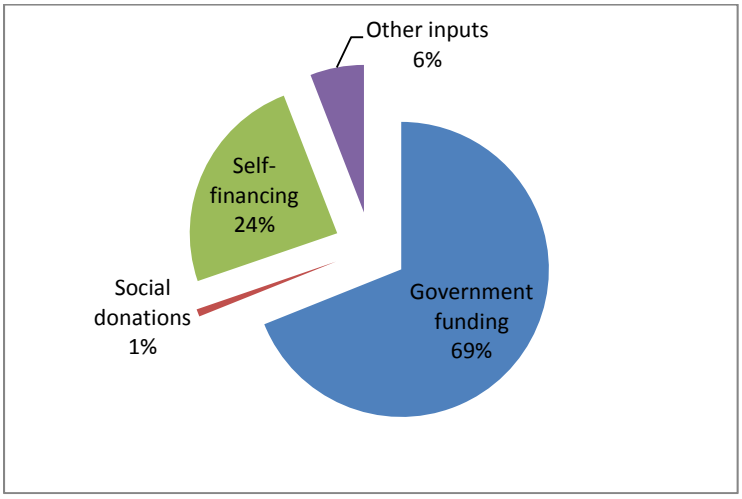

Fig1: China's Science Communication Funding Structure in 2011
The data source: Ministry of Science and Technology of the People's Republic of China, "*China Statistics of Science Popularization*," Beijing: Science and Technology Academic Press, pp.58, 2013.

C. The importance of the research

The Chinese government is aware of the above data which shows that social organizations rarely participate in science communication. "Law of the People's Republic of China on Popularization of Science and Technology" hugely encourages social organizations to participate in science communication. The third clause of the law clearly states that "State organs, armed forces, social organizations, enterprises, institutions, organizations and other grassroots organizations should carry out science popularization work." And the sixth clause clearly states that "state-sponsored social forces are encouraged to establish the science popularization career." The thirteenth clause clearly states that "science is the common task of the whole society. Social organizations should participate in various science activities." China also introduced the "Implementation Opinions on the Outline of National Action Scheme of Scientific Literacy for All Chinese Citizens "(2006—2010—2020) to encourage the social organizations to participate in science communication actively. They are not clearly the specific measures for the social organizations to participate in science communication. Based on the above，the study uses the Activity Center in Hong he county, Yunnan province as the case, through the introduction of its operation mode and the results achieved, to analysis the implementation details of social organizations directly involved in the youth science communication in the underdeveloped areas, and to find an effective way for social organizations to have them participated in the science communication.

II. A CASE FOR WORLD VISION PARTICIPATE IN THE ACTIVITY CENTER IN HONG HE COUNTY, YUNNAN PROVINCE

World Vision is an international charity which carries forward the spirit of humanity and fraternity, it's purpose is to serve the poor and care for people in need, encourage those to face up to poverty and disaster with them ,and work together to overcome difficulties that may crop up. World Vision founded in 1950 was originated in a lonely girl's love. Its main project types are for children, disaster relief and reconstruction, education, health, agriculture, forestry environment protect / small-scale infrastructure, orphans, and other urban ministry and so on.

A. The initial target to establish the Activity Center

Hong he county is quite poor, where a majority of high school students come from rural areas, most of the them are introverted, therefore they want a platform to showcase their abilities to the public. After learning something from World Vision helping project, school leaders and school committee thus proposed a plan to apply for the establishment of such

center.

According to the aforementioned introduction regarding Youth League and World Vision, there used to be a long and arduous way to get the application done successfully, it was such a hard-won consultation, which called for well-planned preparations. The consultation time lasted for nearly two years prior to 2007, the main issue was concerning whether to establish center or not? In the absence of some relating cases previously, can the center be successfully established? In the end, the two sides decided to build the Activity Center, but a new problem was emerging during the process of the building of the center after the decision was made. First, the problem is the workplace, the school class rooms are in short supply, and the school can make only one classroom as the Activity Center room. Finally, the School Committee and World Vision staff both would be responsible for the Activity Center after several exchange of ideas, they made the necessary investment in basic facilities, while preparing a preliminary program for the activities. The Activity Center was formally established in 2008.

B. The investment in the Activity Center

1) The hardware investment

World Vision supply the Activities Center stores 785 books in 2008, as the number of books is limited, the Activity Center inspired the school students for book donations, a total number of more than 500 books has been donated until now. These books are mostly graduates textbooks or supplementary information, which enriches the library resources to some extent.

Currently, there are 2 bookcases (1 large, 1 small) in the Activity Centers, 12 tables, some chairs, and benches which are provided by the school, the bookcases come from the waste shelves transformation in Xinhua Bookstore.

As an effective complement to the school library, the Activity Center has almost covered science books, literature, story books; while the number of school library books is primarily textbooks and supplementary materials.

2) The capital investment

The Activity Center's annual funding is 500 yuan (RMB), which comes from World Vision and school, and they can apply for additional expenses from the Vision.

3) The software investment

The Activities Center organized a variety of activities, and World Vision is primarily responsible for the activities, such as guiding students how to be engaged into interactive activities in the program and how to help to teach poor children learn scientific knowledge in the countryside and so on. Activity funds and specific guidance will be completed by World Vision.

C. The management and the operation

1) Managers selected from the students, and need to undergo a rigorous selection process

In terms of selecting the Activity Center managers, firstly, they must write job ads, the first written by the school committee advertisement, later written by the Activity Center person; Then, according to the advertising content, posting recruitment posters; Next, student enrollment, the amount of a total enrollment for the first time was more than 50 people, the number of enrollment for the 2nd time was more than 30 when it came to talking about the number of students signing for it; the next step is that all students enrolled in the lecture hall to make personal simple self-introductions of themselves (5-10 minutes), the judges from World Vision staff in Hong he office who are responsible for the Activity Center, school teachers and the old Communist Youth League members, participated to give every student a score by assessing their comprehensive performance; after the first round, the top 10 of the students entered into the next round of interviews, after the second round of interviews, the students should make conversations with the judges. The conversations are about: are you having sincerity to do the work? Can you act with other members of the team in the Activity Center? etc., as appropriate requirements of the selected, he/she will be selected for the Activity Center staff.

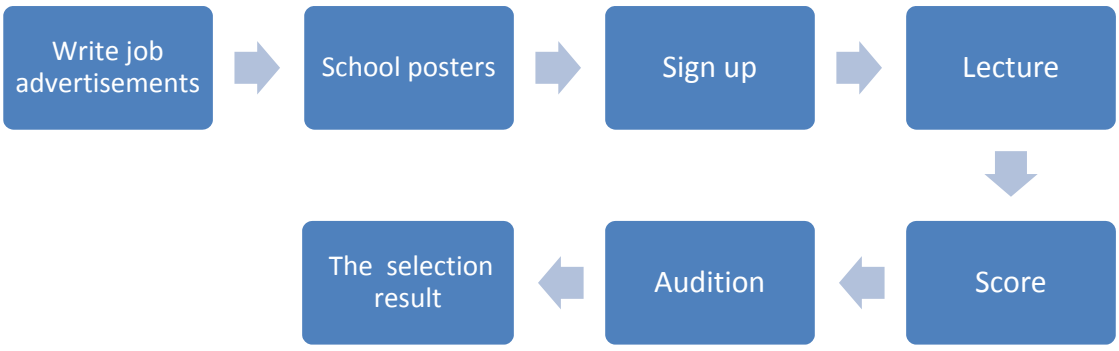

Fig2: The selection process of managers in the Activity Center

2) Specific management measures

Under the guidance of World Vision, the specific management of the Activity Center is divided into three parts: planning, personnel management, financial management, and materials management.

Planning

In the first week of each semester, the Centre's activities make plan, the main objectives and content of the activities are arranged by semester. Usually, there are biweekly meetings, the main content is a summary of the work within two weeks, to identify the main problems, discuss solutions, and so on.

Internal personnel management

Specific measures: There are four individuals, two periods of duty (11:40-13:45 a time; 17:25-19:00 a time) daily, each time by two people on duty, a loan officer in charge of registration and maintaining the order, the other one is responsible for cleaning. Students can read a book or do homework in the Activity Center while on duty, but they are not allowed to play games, and do something else.

Financial Management

The amount of annual funding for the Activity Center is 500 yuan, shared by World Vision and school. Financing is made public regularly to World Vision and school, generally once a month. And after this, the Activity Center can receive funding for the next month. There are two ways to make the financing open to the public, firstly, they use their own money when it comes to reimbursement, where they give the invoice or receipt to the school committee and World Vision for reimbursement after buying things at the end of the month; the other is to make budget firstly, then the Activity Center applied for funds for Youth League and World Vision. If the budget request is reasonable, annual expenditure of 500 yuan can be obtained. The current reality is that 500 yuan is basic enough with the big events separately by World Vision.

Library card fee withdrawal from activities funds, but the performance activities and visit orphanages and nursing home costs were paid another by World Vision.

Materials Management

The activities center staff must check the number of books, damaged status regularly. Students on duty should manage the bench, checkers and other supplies. The staff is also responsible for activities props and other materials.

D. The effectiveness of the Activity Center

As a way to enhance student scientific literacy, and a platform to show students themselves, the Activity Center is an effective complementary part to institutions featured by formal education. The Activity Center is under the direct leadership of the school. Meanwhile, it is ably assisted in the successful completion of World Vision, which is run by the guidance and supervision of World Vision. The following content will introduce the Activity Center from the functional properties to explore its possibilities as a pathway for science communication.

1) The Activity Center disseminate scientific knowledge

Extracurricular readings in the Activity Center enrich the students' reading content greatly. According to the statistics by the staff, the number of the daily visitors is from a dozen to a hundred.

The Activity Center provides a good learning environment for everyone, where students can read science, literature and other interesting reading materials, which enrich their knowledge, broaden their horizons. In the survey, one student said: "Classmates were very happy here, we can relax," " after school, at the Activity Center we can read our favorite books, such as foreign literature, science books, readers and other magazines, this reading way is equivalent to having access to entertainment activities. " It shows that the Activity Center provides students with access to a channel of scientific knowledge, and plays an important role in the promotion of science communication literacy to some extent.

2) The Activity Center focus on the scientific method

Under the guidance of World Vision, the Activity Centers focus on the science ideas and assist them in gaining an insight into relationships among human, technological and social spheres in the process of the activities，whose aim is to cultivate the scientific methods ultimately.

Field survey methods

They will go to homes to pay a visit to those students getting funds once every year. In order to well develop specific funding plans, the actual situation of every family is taken into account so as to decide the amount of funding, etc. World Vision staff made a specific and comprehensive plan when they visit their homes. Home visit needs three people, that is to say, one person talks with parents and takes notes; one person is responsible for observing family situation, there is another person responsible to find out villagers' opinion about the family's economic situation of those being visited. This meticulous, thoughtful, scientific working style which enables young people to participate in the activity is very enlightening.

Exploration methods

In the environmental protection activities, where we can see some activities concerning recycling waste paper, dirty water and other tests held, allow students who participate in the activity truly feel the wonders of science, and discover some laws governing the process of scientific popularization. They combine theory and practice in anyway, for example, they explore the art class waste paper recycling way, and explore the way of waste sculpture change shape to show again, the transformation of waste recycling is implemented. From these activities, they can master the exploration methods.

Reflection Methods

The Activity Center members focus on acting effect, and improving working constantly. Such as programs which are self-write, self-guided, self-speech performed in the village, the members also should communicate with the audience on the spot, and they need to do the survey, and to conduct the performance evaluation in order to have this kind of work improved. From these activities, they can master the reflection methods.

3) The Activity Center disseminate the scientific spirit

The spirit of innovation

The innovation ideas throughout the activities, the dramas with self-write, self-guided and self-speech, which cultivate their imagination and innovation.

The spirit of democracy

The uses of the revenues by selling bottles is to adopt polls method: The questionnaires were three options: ① Each class will receive money according to recycled beverage bottles ,each class appoint a certain number of the shares; ② The income funds used for the Activity Center ; ③ The income is used to visit nursing homes, and pay for the fees of orphanages. ③ Result of the vote is that most people choose the first option. Finally, according to the number of votes, they decided to use the income to buy school supplies for the orphanage children. This way of working cultivates their spirit of democracy.

The spirit of cooperation

By developing program for activities jointly and solving problems jointly, they may cooperate with each other.

4) The Activity Center has literacy education function

Through the organization of activities, you can exercise your own organization and management capabilities. Those who manage the Activity Center think that the happy thing is able to make the center develop. For example, when it is for the first time, there are no specific ones in charge of the operation of the center; but the second time, they have persons responsible for the activity center. Currently, the amount of books is more than 800 in the Activity Center, while it has also developed a specific management system, now the work here is very orderly arranged, producing a sense of accomplishment.

Through experiencing such activities and programs, the ability concerning the resolution of the problems encountered in activities has improved a lot. One student reflected: "Before joining the Activity Center, he would complain about whatever he encountered in the class, but now it is not like that, when being faced with some problems, he will cool down, and then find solutions to problems."

Activity Center trains the student good character by making them fully absorb knowledge, methods and ideas. The Activity Center becomes a platform for students to be in the mutual process of exchanging ideas. One participant said: "I used to be very introverted, after working here for some time, now I am courageous." With such a concept going like that: "After participating in activities, I make plans more than ever before doing things, and I am not so impetuous, and will plan myself step by step." This shows that the Activity Center provide students with a learning, communication, display platform and plays a positive role for the cultivation of good character of the students.

5) The Activity Center has socially public service function

The Activities Center invited pupils in remote areas to participate in the activities. Adolescents should make lofty ambitions to engage scientific research in childhood, with good scientific and cultural literacy and dedicating their youth, wisdom and strength to building a beautiful country. The opportunities for rural pupils in remote areas to directly contact with scientific activity are pretty fewer. The Activity Center in the case has organized activities, each activity will invite primary students who are aided by the World Vision to come, most of them were their first time to participate in activities in the county, and the exciting and interesting activities have largely broadened the children's horizons and scope of knowledge.

The activities counseled for adolescent parents. Students' self-directing speech program "Growing lost", is mainly to educate and inspire parents by putting children's growing mental confusion on the platform. A total number of 12 people participated in the event, in which 4 people come from the Activity Center, 8 people come from classes. World Vision provided financial support and guidance program. They gave 6 performances in 3 villages in Lang di and Jia yin towns. Parents praised the students for the performances made a lot of parents get rid out of misunderstanding and wrong concepts on how to educate their children.

As a carrier, the Activity Center can disseminate scientific knowledge, develop scientific methods and convey scientific spirit. At the same time, it has the literacy education and public service functions.

III. POTENTIAL CONTRIBUTION TO FUTURE APPLICATIONS

A. Compare the Activity Center in the case with the general science and technology activity center in China

With the comparison, in terms of the size, the Activity Center in the case is small-scaled while the general science and technology activity center in China is large-scaled; from the view of service object, both of the objects are mainly students.

From the investment perspective, 1) the Activity Center in the case invest less money which mainly comes from World Vision than the general science and technology activity center in China whose money mainly comes from government; 2) from a point of view of staff input, the staff of the Activity Center in the case are mainly from the students, that is to say,

they are the ones who want to partake the activities, and the staff of the general science and technology activity center in China are mostly staffing, that is to say, they are non-student group; 3) from the material investment perspective, the Activity Center in the case supplies activity material mainly from schools and Vision, and the fund is relatively scarce, meanwhile, the general science and technology activity center in China has established specialized venues, with diversified and abundant inputs.

From the management and operation perspective, the difference between the two mainly manifested is showed as follows: the Activity Center in the case is self-management conducted by the students according to the needs in the annual planning, personnel management, financial management, and materials management, which integrates the expression of the targeted students and needs of the management system; while the general science and technology activity center in China is regulated by a from-top -to -down management mechanism which is not involved in the service object.

The main difference in the effect of performance is as follows: 1) in developing the scientific method , the general science and technology activity center in China mainly cultivates students inquiry and rethink methods, while the Activity Center in the case also focuses on the survey methods in the field in addition to the use of inquiry, rethink and other scientific methods; 2) in the aspect of scientific knowledge dissemination, due to a lack of teaching resources, the Activity Center in the case is limited concerning the scientific knowledge dissemination, while the general science and technology activity center's resources are relatively rich and the dissemination of scientific knowledge is relatively abundant due to the support from the Government and China Association for Science and Technology; 3) in the aspect of scientific spirit, the Activity Center in the case also pay attention to students' democracy , cooperation, criticism spirit, in addition to the spirit of seeking truth from facts and the spirit of innovation which is the general science and technology activity center in China focus on; 4) from the perspective of the effect of the literacy education, the Activity Center in the case is very effective to enhance the literacy of the service objects, while the general science and technology activity center in China is not very effective; 5) from the social services effect point of view, the Activity Center in the case has held many activities in the countryside, it not only serves the targeted ones in the Activity Center , its function also spreads to children and their parents in the remote areas, while the general science and technology activity center in China serves merely a group of those who visit the center.

TABLE2: COMPARE THE ACTIVITY CENTER IN THE CASE WITH THE GENERAL SCIENCE AND TECHNOLOGY ACTIVITY CENTER IN CHINA

		The Activity Center in the case	**The general science and technology activity center in China**
The scale		Small	Large
The object		Students and others	Students and others
The investment	**Capital investment**	Few funds which shared by Vision with school, mainly from Vision	Multi funds which mainly from government
	Staff input	Mainly from students, and they need undergo a rigorous selection process	Most belong to the permanent staff who comes not from students
	Material inputs	Shared by school and Vision, the resources are relatively scarce	Mainly from government, the resources are relatively rich
The management	**Annual planning**	Developed by the students themselves	Developed by the Science and Technology Centre
	Personnel management	Student self-management	Managed by the Science and Technology Centre
	Financial Management	Student self-management	Managed by the Science and Technology Centre
	Materials Management	Student self-management	Managed by the Science and Technology Centre
The effect	**The scientific method**	Inquiry and rethink and field investigation methods, and the effect is very obvious	Inquiry and rethink methods, and the effect is not obvious
	The scientific knowledge	Single source, scientific knowledge mainly comes from reference books	Abundant source, variety of exhibits
	The scientific spirit	Realistic, discover, truth-seeking, innovation, democracy, cooperation, criticism, etc.	Empirical, exploring, truth, innovation, etc.
	Literacy education	The enhance of the literacy is significant	The enhance of the literacy is not significant
	Social Services	The visitors, children and parents in remote areas	The visitors

It can be seen from the above comparison that, in the case, small-scale social organization involved in science communication got a pronounced effect with relatively small fund.

B. Realistic conditions of social organizations participate in science communication

As can be seen from the above analysis, social organizations participate in science communication in the case can get a better result with less investment than the general science and technology activity center in China. Social organizations participate in science communication need some conditions, for they need government, China Associations for Science and Technology, universities and others to achieve multi-win-win situation.

Based on the case, the following content will analysis the relationship among the social organizations, China Association for Science and Technology, governments, universities and research institutions, and try to establish interests sharing, investment, motivation and supervision mechanisms to achieve the benefit sharing and cost sharing, and finally form a multi-win-win situation.

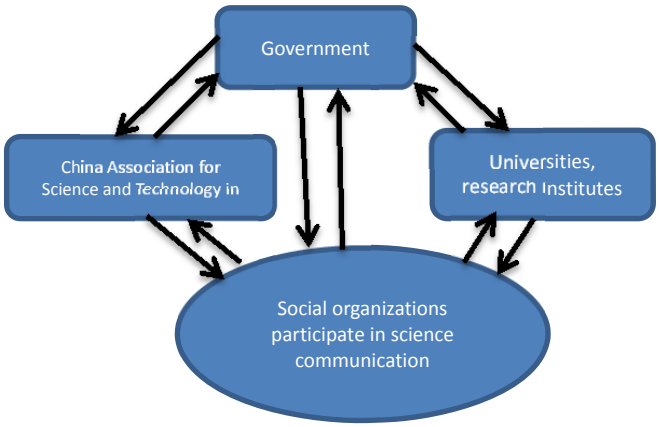

Fig3: Mechanism of multi-win-win situation for social organizations participate in science communication

1) The purpose of social organizations and the goal of science communication are compatible

World Vision is an international charity with carrying forward the humanity spirit and fraternity, its purpose is to help disadvantaged and difficulty groups in need with love. The main projects of World Vision are for children, relief and reconstruction, education, health, agriculture, forestry, environmental/small-scale infrastructure, orphans, and other urban ministry and so on. The children's and the educational programs of the aid projects focus on improving the science literacy for teenagers.

The goals of science communication which come from the " Implementation Opinions on the Outline of National Action Scheme of Scientific Literacy for All Chinese Citizens "(2006—2010—2020) are as follows: " to improve the quality of science education in schools, so that students can grasp the necessary and basic scientific knowledge and skills, to experience science inquiry activities processes and methods, to develop good scientific attitudes, emotions and values, to develop preliminary scientific inquiry ability, to enhance creativity and practical ability. "" to start extracurricular science & technology activities, and to enhance their creativity and practical abilities. "

Enhance the teenagers scientific literacy is the juncture of World Vision's work and the Chinese science communication work. At this juncture, the social organization in the case built the Activity Centers for science popularization and improving the teenagers' literacy.

Extended to the general social organizations involved in science communication, the connection point between the social organizations' work and the science communication work should also be founded.

2) The strengths and limitations of social organizations participate in science communication

Social organizations with specific goals have their own advantages which can disseminate scientific knowledge highly targeted their internal operating procedures and their service object.

In the case, World Vision has a standardized management and operation system in children program and education program which are suitable for teenagers' features. For example, one of the World Vision staff comes to the Activity Center for twice a week to help the student who involved in the management to solve the specific issues, such as how to make a library card, how to solve the problems encountered in scheduling. The fund of the Activity Center should regularly open to World Vision and schools, usually once a month. World Vision will evaluate the activities and supervise the process of them to ensure the fund be rational used. The management is very popular with students.

Social organizations have the advantage in favor of science communication, but there are some limitations in the construction, teaching resources and the guidance of science communication aspects, etc.

The limitations in the case is as follows: 1) the space of the Activity Center is small; 2) the types and quantities of books and the exhibition resources can't meet the needs of adolescents; 3) the activities for contests, lectures, comedy shows and others are scarce; 4) to some extent, World Vision staff who responsible for the Activity Center act as counselors for science and technology, but their professional training is lack.

3) China Association for Science and Technology at all levels

Article XII in "Law of the People's Republic of China on Popularization of Science and Technology" stated that "The Association for Science and Technology is the main social force for science popularization work. The Association for Science and Technology should organize the masses, social, to carry out regular science activities, support the social

organizations, enterprises and institutions to carry out science activities, assist the government in formulating science planning, and provide advices to government for science popularization work."

According to the above functions, China Association for Science and Technology in China has the responsibility to support the social organizations, enterprises and institutions to carry out science activities. In the case, the Activity Center didn't get support from China Association for Science and Technology.

According to "The Work Program for co-construction and sharing Science Popularization Resources (2008-2010)" released by China Association for Science and Technology in 2008. The main part is about the China Association for Science and Technology shares science resources, and forms a science popularization resources sharing network with related units and the social forces broadly through the "up and down collaboration, transverse joint " mode. The "up and down collaboration" refers to the responsibility and the cooperation of the units which directly under the China Association for Science and technology and the local divisions, while the "transverse joint" refers to a science popularization resources sharing network with the China Association for Science and Technology, the related units and the social forces.

Thus, Associations for Science and Technology in China at all levels are responsible for collaboration with other social organizations, but the current situation is that this transverse joint is rarely. If Associations for Science and Technology in China at all levels give support to social organizations participate in science popularization with science books, science activities, science contests and give the instructor training and guidance, etc., it would achieve win-win situation between the two sides, for one side, it would compensate the insufficient resources for social organizations involved in science communication; for the other side, China Association for Science and Technology would realize the "transverse joint" function.

4) Universities, research institutes

Article XIV in "Law of the People's Republic of China on Popularization of Science and Technology" stated that schools, universities and other educational institutions should regard the science popularization as an important part of literacy education, organize the students to participate in various forms of science activities.

Universities (or research institutes) and social organizations can achieve a win-win situation in science communication. On the one hand, social organizations take advantage of the universities and the meteorological department, the health sector, environmental sector and other sectors' resource, and constantly enrich the content, to overcome the limitations of social organizations participate in science communication; on the other hand, it enhance the public service capabilities of universities and research institutes.

In the case, Vision made up for the insufficient of the student literacy education in school, play the role of student literacy education. "Vision's literacy outreach activities are meaningful. For example, students improve their skills through activities with the scientific idea, the scientific method and other content." school officials say, "if universities and research institutes have supported the Activity Center with their resources, it would play a greater function than ever."

In order to realize the win-win situation, universities (or research institutes) need rules and regulations for experts come to campus (or community, science base), and for experts carry out remote lectures to achieve face to face communication with minors. Meanwhile, social organizations have chance to get a lot of science resources for science communication, and social organizations involved in science communication will play a more important function of literacy education than before.

5) The government in China

In order to achieve win-win situation between social groups and government, government needs to formulate specific policies to protect the social organizations participate in science communication, while the behavior of social organizations participate in science communication should be supervised by the government to make sure they play the role of science communication effectively.

For one thing, government should give financial support to social organizations for science popularization. The Activity Center in the case needs money from the government to expand the size of the venue, and to increase science exhibits.

For another, the government needs to improve the related legal and the related policy for social organizations participate in science communication. In order to encourage social organizations to participate in science communication, the related legal and the related policy should be specific and workable. Firstly, the government should give clear instructions for science communication construction land; secondly, the government should decrease the tax and give other preferential measures to social organizations; thirdly, government should establish a special reward system to encourage the social forces to participate in science communication; fourthly, government should publish specific regulations to ensure the communication channels flow among China Association for Science and Technology, universities and research institutes as well as social organizations who participate in science communication.

In addition, Government should monitor the social organizations' behavior in order to prevent the social organizations to spread the wrongful conduct in the name of science communication.

In summary, according to their own development tenet and their characteristics, social organizations can play a particular role in science communication. As a new approach for science communication, we need to establish interests

sharing, investment, motivation and supervision mechanisms to form a multi-win-win situation which will promote the social organizations to participate in science communication.

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