

MEDIUM RESOURCES CONFORMITY AND SCIENCE POPULARIZATION EDUCATION FOR JUVENILES

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ABSTRACT

Shanxi Association for Science and Technology (SAST) and Science Guide Newspaper Office (SGNO) has put the program of science popularization education for juveniles into effect. They have got medium resources such as newspaper, journal, website, caravans, windows conformed and the project “Science Popularization Caravans Brought to School” carried out through medium platforms. The activities like selecting young journalists, setting up “Science Popularization Education Bases”, holding “Science Enlightenment” camps make schools, teachers, parents, students and all powers in different walks of life organized and teenagers participate in, thus a new road is opened on juveniles science popularization education.

KEYWORDS

science popularization education
science medium
resources conformity

FOREWARD

Comparative to the other educations for teenagers, training of scientific quality is still a more vulnerable spot. 《The Popularization Law on Science and Technology of The People’s Republic of China 》 published in 2002 stressed the importance of science popularization in the lawful form. On this premise and background, SAST makes full use of both web and talent superiorities, SGNO-- the science popularization medium, creates a new way to strengthen young people’s scientific education, to train their interests, creative consciousness and abilities in science, to set up scientific thoughts and to improve scientific quality.

THE SCIENCE COMMUNICATION PROCESS

The science popularization education among teenagers has been the key work of SAST, SGNO directly under SAST, possessing Science Guide Newspaper, Friends of Science Magazine, Shanxi Science Popularization Website, Science Popularization Caravan and Windows of Science Popularization, is an overall scientific medium base in Shanxi Province. In early 2002, we created the juvenile edition of Science Guide Newspaper, we have taken science popularization education as our own responsibility and duty, developed all kinds of activities on this platform, and of course achieved better social benefits .

A. CREATING JUVENILES SCIENCE WEEKLY

In order to get science knowledge better popularized among the young people, to improve their scientific quality, in April 2002 we created Science Guide Newspaper—juvenile edition weekly in color print and set a precedent in scientific popularization education in our province. According to children’s interests and likes, we set up such columns as “Young Scientists”, “Mystery Exploration”, “Interesting Science Museum”, “The New Time and Space of Computers”, “Congcong Laboratory”, “Composition Writing Club”, “Children’s Painting and Calligraphy Garden” and “Science Fancy World” which provide children a better platform and a spreading way in different angles and various aspects. In the past three years, juvenile edition has attracted vast teenage readers’ attention from all parts of our nation due to its forward science knowledge, plentiful science content, elegant designing and excellent printing quality so it has been good teachers and helpful friends of juveniles, teachers and parents. Three years have passed since creating juvenile edition of Science Guide Newspaper, more than 500,000 juvenile editions were sold nationwide while 300,000 students in poor regions obtained the paper for free.

At the same time, required by lots of children, teachers and parents, we created separately Modern Education Weekly and Family Education Weekly of Science Guide Newspaper at the end of 2004 and in early 2005.

Modern Education Weekly is mainly served for schools, teachers and middle school students. With the characters of concerning focus, basing on reality, stressing authority, practical use and with the content of closing to school life, it has attracted the readers from all over the nation to submit their writings. The column “Experience and Method” for example, has been a paradise for lots of outstanding schools and teachers to exchange their teaching experiences and share their teaching achievements mutually. “Teaching Garden” and “Press Cutting on Teaching” provide the platform for a large number of teachers to communicate inside. Furthermore “Campus Literature” and “Composition Selected” have been gardens for young students to improve their writing abilities. Living on this land, showering in scientific sunlight, juveniles are growing up happily and schools and teachers are absorbing the scientific educating methods.

As everyone knows, parents are the first teachers of children so scientific family education plays an important role during children’s healthy growth. “Family Education” is focused on babies, pupils, teachers and parents and it aims at setting up correct family educating ideas, mastering scientific methods and improving educating ability scientifically. Starting from family education, it’ll promote the family educating process to a scientific way. Besides the columns such as “Parents School” -- to enhance parents’ qualities of their won, “Psychology Channel” -- to concern for children’s psychology health, “Topic on Primary School Education” -- to care for pupils’ growth and learning and “Health and Safety” -- to promote children’s healthy growth. At present, the weekly is well thought of and guides the family education to a scientific development.

Well, to tell you that all the contents mentioned above are published on our website.

B. CARRYING OUT THE PROJECT OF “BRINGING SCIENCE POPULARIZATION CARAVANS TO CAMPUS”

In order to strengthen the minors' moral construction, to improve their science quality and to serve better for pupils and students, we started the project of Driving Science Popularization Caravans to Campus. The caravan which is called a mobile science museum has brought scientific knowledge to the students through science display boards, scientific equipment, sample explanation and the staff workers' vivid explaining on site has widened the students' vision and made them participate directly in and felt in person the scientific charm. It is in fact a feasible way for juveniles' moral construction. In the past two years, the caravan traveled over 20,000 kilometers and was driven to more than 100 schools in over 40 counties and 11 cities of our province to serve for more than 100'000 pupils and students.

(a) Making use of science display boards: to popularize science knowledge involving astronomy, geography, history and elementary knowledge in our lives according to the students from various grades.

(b) Making use of material objects demonstration: The real objects like "Mirror of Giant Face", "Ivisible Power" and so on let students understand the principals and knowledge obtained in physics science.

(c) Making use of broadcast and projection: to tap children's creativities through scientific films.

C. SELECTING YOUNG REPORTERS OF SCIENCE GUIDE NEWSPAPER

Since the creation of Science Guide Newspaper -- juveniles edition, it is well welcomed by lots of teachers, students and parents. In order to cultivate its own edition, the juveniles edition of Science Guide Newspaper selected a group of excellent students interested in science and scientific writing as its reporters. So far more than 300 students coming from across the country have been enrolled as the journalists of the newspaper. Some of the young journalists become volunteers of science popularization. Science Guide Newspaper has formed a series of regulation on young journalists management, their contributions and their awards. Frequent training is held for them and their contribution and proposals are processed timely. Excellent journalists will be awarded.

In the past three years, young journalists developed actively all kinds of scientific activities in their own schools, they not only enrich themselves but also get their parents and teachers' supports. As one of the science communication and education bases, Saiyu Primary School in Yangquan City of Shanxi has developed a nationally famous Children's Academy of Sciences. The middle school in the diggings of Yangquan cultivated several academicians of the national Children's Academy of Sciences.

D. FORMING SCIENCE COMMUNICATION AND EDUCATION BASES

In 2002, SAST selected 80 schools which had achieved good results in previous science and technology creativity matches as candidates for science communication and education bases. According to the regulations from 《The Standards on Science Popularization Bases of Shanxi Province》, the selected schools have experienced the procedures of application, recommendation, evaluation and examination and confirmation from the experts, finally 15 schools were selected as science communication and education bases. The previous deputy secretary of Shanxi Provincial Committee of the Communist Party of China awarded the honor to these schools before June 1st, 2002, the International Children's Day. After that the second

batches and the third of science communication and education bases were formed. The activities have attracted the attention of many students, parents, teachers and people from all walks of life. At present, science communication and education bases are formed in more than 30 schools in our province.

In order to enrich the education contents of the bases, SAST often invites scientists and entrepreneurs of science-based companies to give lectures to students, to hold science popularization speeches and discuss with students. Students of the science communication and education bases are organized to visit science museums, children's amusement parks and research institutes. SAST also launched campaigns to select "young scientists" and "young academicians" to spread science achievements. Guan Yuancheng, vice-chairman of SAST who was endowed with the first China Youth Science and Technology Award frequently visits the bases to give lectures. The two hour lecture often lasted three or even four hours. After the lectures, students are required to keep diaries or write reports and representative ones were published in the juvenile edition of Science Guide Newspaper. Students' creativity and enthusiasm of participating in science communication have been highly activated.

To carry out 《 Ideas on Improving Further the Moral Construction for Juveniles 》 by the Communist Party of China and the State Council, recently The Juvenile Science Education Association of Shanxi Province, Science Guide Newspaper and the other units hold a series of science education activities named "We'll Travel Together With Science and Technology"—scientific thesis collecting on "Mystery Exploration in Coal Sea"-- matches on Children's Scientific Painting and Calligraphy, Photography, -- competition on "Seven Piece Puzzle" and so on.

In order to strengthen and enlarge science popularization education achievements, at the time when summing up the experiences on scientific bases formed in schools, we'll spread these bases from schools to communities, enterprises, government departments and tour spots to let the work develop socially. To ensure the exemplary role of these bases, regular inspection and evaluation are held and the unqualified will be abolished.

E. HOLDING THE SUMMER CAMP OF SCIENCE ENLIGHTENMENT

Last summer vacation, we launched a summer camp of Scientific Enlightenment — English and Science with the Angli College attached to Shanghai Traffic University. Through listening, looking, reading, writing and speaking and taking part in social practice, the campers felt personally the charm of high learning and has understood better the theory of "Knowledge is Power". After the summer camp, the juvenile edition launched a special page for the activity publishing campers' feelings and experiences. Some of them took photos in their own view. This activity played an active role for the campers to improve their ability of English speaking and comprehensive abilities of participating in our society and serve for our society.

EVALUATION

Taking SAST as a guide and science medium a platform, Letting schools, parents and society participate in, SAST creates a science paradise for juveniles' healthy growth. This kind of educating manner has widened their knowledge vision, enriched their extracurricular activities and has been advantageous to train talents of high quality. It

is also a new measure that SAST and science medium carry out important thought of “Three Representatives” and concern for juveniles’ education.

DISCUSSION

Mentioning education, the manner of teachers’ teaching and students’ listening to appears in everybody’s mind. Such manner now is far fit to the demands of present situation. The case mentioned above has achieved good results by many manners of creating the beloved publications, driving the caravan to campus, forming science popularization education bases and selecting young reporters, mobilizing children’ interests and powers from all circles.

CONCLUSION

To develop science popularization education to juveniles through the activities that they are interested in participating is a good way to get twice the result with half the effort. There is much more in this case that can be made use of.

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Wang Degui Vice Chairman of SAST

REFERENCES

《The Popularization Law on Science and Technology of The People’s Republic of China 》 The 14th Provision says that schools at different levels and other education agencies should take science popularization as the important content in quality education and organize students to develop many kinds of science popularization activities.

Science museums (stations), science activity centers and other science popularization education bases should organize students to develop science popularization education activities after class.

**CONSTRUCTING “WINDOW OF SCIENCE POPULARIZATION”
AND SETTING UP SCIENCE PLATFORM
DEVELOPING EFFECTIVE SCIENCE POPULARIZATION WORK TO THE PUBLIC**

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ABSTRACT

Associations for science and technology bear the social responsibility to popularize knowledge of science and technology. Through investigations and explorations, we find that the construction of the Window of Science Popularization in urban communities, countryside, enterprise and schools is an important way to popularize science knowledge among the public. Since 2002, we redoubled our efforts on constructing Windows of Science Popularization. So far, a total of 238 windows of science popularization have been constructed, totaling 1162 meters. There are three forms of financings: 56 windows are constructed solely by the beneficiaries and purely for the public interests, 178 windows are jointly established with other organizations and are based on market demands, 4 windows are inserted to the electronic advertising boards of retailing facilities. The construction work shortens the distance between the public and science. It is an effective carrier to initiate scientific, healthy and civilized living manners and is also one of the important contents to construct a harmonious society. Its construction gets associations for science and technology known by the public and the public images of the associations promoted and more importantly it plays a positive role in the promoting science popularization to socialization.

KEYWORDS

association for science and technology
science popularization
construction of windows of science popularization

FORWORD

Associations for science and technology bear the social responsibility to popularize knowledge of science and technology. It is a topic that we try our best to deal with how to effectively spread scientific spirit, scientific thought, scientific knowledge and scientific methods among the public so as to improve moral quality and scientific quality of the public and to initiate scientific, healthy and civilized living manners. In recent years, Jinzhong Association for Science and Technology has organized its subordinates to explore the forms, methods and routes of science popularization in various aspects. The construction of the Window of Science Popularization in urban communities, countrysides, enterprises and schools is an important way to popularize science knowledge among the public and to shorten the distance between the public and science.

THE SCIENCE COMMUNICATION PROCESS

The introduction to the construction Windows of Science Popularization is as following:

A.THE CONSTRUCTION OF WINDOW OF SCIENCE AND TECHNOLOGY

Since 2002, Jinzhong Association for Science and Technology (JAST) released a notice to take Window of Science Popularization as a major carrier, enabling science to enter urban communities, countrysides, enterprises and schools based on related policies. So far, a total of 238 windows of science popularization have been constructed, totaling 1162 meters. There are three forms of financings: 56 windows are constructed solely by the beneficiaries and purely for the public interests, 178 windows are jointly established with other organizations and are based on market demands, 4 windows are inserted to the electronic advertising boards of retailing facilities.

B.OPERATION FORM

There are three operation forms for the Windows of Science Popularization in Shanxi Jinzhong.

(a)Independently constructed and public interest form

The form is mainly adopted in Lingshi County in Jinzhong. Under the coordination of local government and the operation of Lingshi County's Association for Science and Technology, the windows are invested by organizations beneficiaries belong to. Lingshi County's Association for Science and Technology sets unified planning, unified designing and unified standards. It also organized the regular content replacement. The windows are mainly erected on ground, or hung on wall. All of them are made of stainless steel and painted with colored picture. So far 50 windows of science popularization have been constructed across the county. Each one consists of four boards, with different science popularization contents. In accordance with five communication target audiences – urban communities, countrysides, enterprises, schools and tourism sites -- the contents of the science popularization boards in the windows are replaced in every two months. The construction, maintenance and content replacement costs are paid by beneficiaries' organizations while Lingshi County's Association for Science and Technology are responsible to offer contents or organize others to draw the contents. All the science popularization contents are for public interests and no commercial factors are mingled. Another six public interest windows of science popularization are constructed in Jiexiu City and Qixian County.

(b) Market demands -- based windows of science popularization

So far, the kinds of windows of science popularization have been constructed in five counties, cities or districts belonging to Jinzhong. The practice is based on The Science Popularization Law of People's Republic of China which encourages social forces to involve in science popularization with market operation rules. JAST positively seeks investment from enterprises to jointly operate the Windows of Science Popularization. Now JAST has formed strategic partnership with an information company, finishing the construction of 178 windows of science popularization. The concrete co-operation is as followed: JAST is responsible for planning and finding construction site in urban communities, countrysides, enterprises and schools, offering and designing science popularization contents. The information company is responsible for the initial investment, manufacturing, installation and maintenance of the windows. The windows of science popularization are divided to science communication contents and areas for advertising with a ratio of 1.1:0.9. So far, all completed windows of science

communication are hung on the wall, with 10 square meters for each window. The contents are replaced each month and are varied in accordance with different science communication targets. The information companies enjoy the right of advertising operation and return while JAST offers science communication contents and designs and supervises the advertising contents. The two parties jointly sign on the windows. The right of disposing the material lies in the information companies.

(c) Content-inserting windows

In order to spread science and technology, JAST has tried to take use of all social resources to popularize science. JAST has taken advantage of four large electronic advertising boards erected in squares and commercial buildings to insert science popularization contents. JAST is responsible for offering science popularization contents, with no investment or little investment into the four electronic advertising boards. The operators of the electronic advertising boards are responsible for designing science popularization contents and inserting them into advertisings.

C. EVALUATION

(a) The construction principle of the Windows of Science Popularization is close to the public, close to life and close to science. This principle enables audiences to directly feel and approach science, shorten the gap between the public and science.

(b) Science knowledge is not only for intellectual need, but also serving practical life and being easy to accept. With the Window of Science Popularization, the public will gradually use scientific knowledge to guide their life. The Window of Science Popularization helps the public develop healthy life style.

(c) Window of Science Popularization makes the public understand association for science and technology at different levels, improving the public and social image of the associations. This is helpful to spread the scale of science popularization and increase the numbers of volunteers involved in science communication.