

**Ability interacting & resource sharing**  
**Case of “Practicing Project of Popular Science Teenager Guides”**

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**ABSTRACT**

Making fully use of Shanghai science education bases and providing a venue for youth, this project sets these bases as experiment sites to absorb outstanding students who are willing to be trained voluntarily and academically. The training courses include theoretical training given by experienced botanical gardener and practical training given by specialized tour guides. All the well-trained students could work for tourists on holidays after a practice inspection test. The aims of this activity is to popularize science among populace and deepen the influences of science communication. In addition, this activity also provides opportunities for students to devote themselves into social practice.

**INDEX TERMS**

Ability interacting, Resources sharing, popular science teenager guides

**INTRODUCTION**

Project Backgrounds:

There are 120 popular science education bases spreading in every administrative district in Shanghai.

However, the resource of each base is not yet fully used. There are two reasons for that: one is the shortage of visitors; the other is the insufficiency of professional guides. Visit to these bases is usually a hurried tour that visitors can hardly acquire science knowledge. Another fact is that juveniles lack essential places for practising knowledge learned from classroom. This case set its target on the above problems.

### Aims of Science Communication:

1. To make the utmost use of the resources of popular science bases, thus to provide teenagers with better places of learning science knowledge and launch science-spreading activities.

2. To allow juveniles not only master scientific knowledge through practice, but also unfold publication of such knowledge to citizens, foreign visitors and students simultaneously. After all, to help masses gain a deeper understanding of science.

3. Teenager guides act as bridges to promote co-operation between their schools and popular science base to carry out science activities and effectively spread science knowledge among schools, communities and public places and enlarge the scale of beneficiaries.

4. To formulate a network of experts in popular science base spreading teenagers guides spreading various types of visitors to such bases. In that way, we innovated a brand new mode of publicizing science that students and ordinary citizens participate in together and can be welcomed by juveniles.

### Objectives of Project:

To make full use of the scientific education resources of popular science bases through the concept of “teenager guides” to allow students gain scientific knowledge through practice and then to popularize popular science to the general residents. Those young guides learn more from scientific research, innovate in their working process. They contact people and know more about the society. Their personality gets better shaped through the feedback from the visitors and reflection of their working.

## THE SCIENCE COMMUNICATION PROCESS

### Phase One: Publicity and Motivation

Item I: Programing teenager guides project with popular science education base—Shanghai Botanical Garden.

Item II: Motivating schools nearby popular science education base (Shanghai Botanical Garden) to publicize the project and completing cooperative intention sheet.

Item III: Select several schools (Longyuan Middle School, Tiannan Middle School and Changqiao Middle School) as the object schools and hand out application form to teenager guides volunteers.

#### Phase Two: Recruiting and training

Item I: Collecting application forms, interviews and admission

Item II: Popular science base organizes training courses while the Student Center executes the running of the project in terms of attendance and discipline, etc.

This item includes:

1. class-opening ceremony
2. introduction of the Curriculum (including training contents, timetable, teaching staff, qualification examinations and on-duty certificate-issuing ceremony.)

#### Phase Three: On-duty Practice: .

Item I: Arranging of weekend shift schedule in accordance to teenager guides' leisure time.

Item II: Set up service records: Including subdivisions of service time, problems occurred in service, methods of problem solving and assessments by both customers and work staff in the Botanical Garden.

Item III: Launching medium-term awarding sessions according to the quantity and quality of service. Awards are given to outstanding performers and those less competent get re-trained. Awarding terms: promoting one-star guide to two-star guide. None –star guide to one-star guide.

#### Phase Four: Extend and Deepening of the Project.

### 1. Research on selected subject

Teenager guides cemented profound friendship with the specialists of the Botanical Garden through training and on-duty practice. They conquered all kinds of difficulties that merged in both on-duty practice and theoretical knowledge by combing through data and consulting with experts. They shaped various minor research subjects on botany and ecology and studied on them. That procedure broadened the range of science knowledge in teenager guides, thus raised the level of their knowledge promulgation.

### 2. Passing the Flame On

Following the previous mode, we select another site in the garden (potted landscape displaying garden) and another popular science education base in Shanghai (Shanghai Public Security Museum) as the second phase and the third phase sites for service. We've set our targets on enlarging spheres of service, strengthening the troops of teenager guides and boosting the participation rate.

### 3. Forming Ties and Bridges

Encouraging classes, grades and even the whole school to be engaged in various styles and topics of science projects in the Botanical Garden through the agency of these teenager guides. For example, the Botanical Garden and its adjacent schools held activities like "One day tour to Shanghai Botanical Garden", "Greening Action starts with me". The Public Security Museum and the Grade joined in hands in a large-scale activity called "With flag's blowing—a tour to the Public Security Museum".

## **EVALUATION**

The project has being carried out for almost two years. We took Shanghai Botanical Garden and Shanghai Public Security Museum as the experimental sites. We've motivated 2240 pre-middle school students and first year students from seven middle schools (they are Longyuan Middle School, Yuannan Middle School, Changqiao Middle School, No. 59<sup>th</sup> Middle School, Nanyang Elementary School, Longlin Middle School and Middle School attached to Educational College.) and received 1800 application forms. 300 students took part in the formal training courses after preliminary examination and interviews. Finally,

150 students were qualified to be on duty with certificate after cycling the recruits. These 150 students devoted their time after class to volunteer in interpreting to visitors in holidays and tourist season. They received up to one thousand visitors in whole. Teenager guides kept on learning in course of service and finished 60 articles on popular science and 15 science thesis's. The teenager guides offer free interpretation to the visitors with great passion. They are cheerful, vigorous and self-motivated in learning. They also benefited from their young age in verbal communication with visitors. Their work is highly appreciated by visitors and enjoyed social recognition. They spread their wings to the full under the system of "Park Opening Day on Date 10<sup>th</sup> of every month." Schools and popular science bases established solid cooperative relationship and large -scale activities were carried out with these volunteer teenager guides being communicating ties and bridges between the two associations. 250 students from 5 schools participated in the "One day tour to the Botanical Garden", 3092 students from 27 schools joined in the "With Flag's blowing—a tour to the Public Security Museum", 3560 students attended in the "Colorful JiaoYing grow together with 3000 students", and 1530 students took part in the "greening Action starts with me" science week activities and so on. With the boosting number of teenager guides, we established " Xuhui District Popular Science Volunteers Association—Youth Branch", an organization of their own, Xuhui District Popular Science Volunteers Association gave these little guides guidance on both organization and business management to help them better organize teenager guides in science popularization practice and promote Science Communication.

Students learn science knowledge through practice, a more active and interesting way. What's more, it teaches them how to pursue knowledge, how to handle problems, how to get along with others as well as how to live as an honest person.

Concept of scientific humanism is ploughed into science popularization practice. In the process of the project, it furnishes schools, communities, science popularization bases and teenagers with abundant scientific information, spread the concept of science, universalized scientific knowledge, advocated scientific methods and carried forward scientific spirit.

With teenager guides being communicating bridge, inspired schools to unfold their scientific activities more purposefully and more orderly. Science is brought out to public by cheerful students, which helps formation of science communication system.

Evaluation on result of this science communication activity is achieved through visitor's comment, reports from parents on reaction and change in participating teenager guides' attitudes towards school learning and daily behavior, eagerness of participation in classmates not involved, and recognition from community.

## **DISCUSSION:**

Science learning in schools is mostly conducted passively and is limited to a confined range of subjects and knowledge scope. Science education should be fun and performed actively from learners' point of view, thus bring about effective result in science popularization promulgation. A vivid method is the most important thing in science promulgation. The status of information delivers and acceptor is not fixed. The status of the two vary at different time and phase of activity, thus resulted in various communication influence.

## **CONCLUSION:**

In this case, a science communication mode is innovated in which mass are willing to be involved in It can be promoted in most kinds of popular science educational activities. Several problems should be paid attention to:

1. Rules of service sites selection: Site area is unsuitable if it's too large; it shall contain expertise to some extent and unfit for solitary visiting. At the initial period of this project, the sphere of object volunteers is limited to pre-middle and freshmen in concerning of academic burden and unfit service time for high-grade students. However, we'd expand the range of object students to Grade One and Grade Two senior high school students and pupils of Grade Five and Grade Six. We've set our targets on enlarging spheres of service, strengthening the troops of teenager guides and boosting the participation rate.
2. Due to limitation of area covered in activity and forms of service, there is only a small number of students directly involved. However, these teenager guides can act as bridges and ties to promote co-operation between schools and science popularization base, and organize series of science popularization promulgation activity of larger scale.

3. Working for the self-determination management style. Allow teenager guides to organize their own institution and figure out the design and management style of their framework independently.

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