

**THE ROLE OF LOCAL AUTONOMOUS ENTITIES IN
DEVELOPING THE SCIENCE CULTURE
(THE PRACTICAL SCIENCE CLASS PROGRAM)**

Jong Yeon, Choi, Chung Chin,

Abstract

Young Deung Po Gu, the self governing district in Seoul that is the capital city of Korea and also the world city that is famous for the hosting of Olympic Games in 1988, ASEM Conference in 2000 and World Cup in 2002, is running a program called "The Practical Science Class". Until September 2003 when a staff of "The Korean Science Culture Organization" volunteered to initiate and implement the science program, the concept of science was pretty much non-existent in this part of Seoul. However, after receiving a remarkably favorable response from the district residents, this program was developed to an official science program aiming to educate the district residents and at present, the program has been spread to some 344 areas throughout the country. The success of this program is mainly owing to the district being able to predict precisely the demand of scientific needs in the area and facilitating what they called "The Residents' Autonomous Centre" which enabled the district residents to access to the program easily by promoting the program consistently in their districts. In addition, the introduction of the idea how to lower the costs while maximizing the efficiency by using the practical materials as their scientific experiments have played a crucial role for the success of this program.

“1. Introduction”

Korea has accomplished the remarkable economic development through the vast investment in heavy industry, chemistry and electronics over the years. This economic progress, however, did not measure up with the scientific progress at all. Science was perceived a relatively negative image in terms of scientific development and thus, it was poorly funded. Likewise, prior to the implementation of “The Practical Science Class”, there had been no effort made for scientific activities, events, programs for scientific communication from neither the district office nor the residents. In particular, there had been no activities such as science contest or science program for the youth.

The main reason for this was due to the absence of universities, science related facilities and establishment of major companies/industrial set ups in the district. Residents in this area made lower than average income (77% of the average income of the rest of districts in Seoul) and thus, showed no interest in science. In addition, the science program carried out by the government was limited - in terms of the accessibility and cost, and could not cover the whole areas in the country. Thus, there was an urgent need to implement the science program by district itself and eventually, a local autonomous entity had taken up the responsibility and played the crucial role in changing this situation.

“2. Introduction of the Practical Science Class Program”

The first time the practical science class program started to attract the attention of residents in Yongdengpo-gu was the beginning of 2004 when the chief of district office reported the case of his staff operating the science class as a volunteer in Yongdengpo-gu 3 dong. This program used the cheap materials that were abundant in our daily lives as experimental tools and help the participants to understand the principal of science easily. The program received such a favorable response from not only the students but also the parents and it was chosen as an exemplary case of autonomous program and, with the support of the district leader and also the chief of administration officer, the program was further implemented. To support the program, the budget for the practical science class was proposed and also the universities were brought in to implement more sophisticated programs. In July 2004, the district leader and the head of science attended to witness the opening of the practical science class. By this time, 11 among 22 districts already implemented this program by the residents of respective districts and in January 2005, the program was expended to all 22 districts. The program was, then, spread to 353 places throughout the country in 2005 and by 2006, the number has increased to 430 and we expect the statistics will keep on increasing.

Table 1 The increase in the number of practical science classes in the country

(Basis: 1 million Won)

Year	Yr '04	Yr '05	Yr '06	Yr '07	Yr '08	Yr '09
<input type="checkbox"/> No. of class	270	353	430	600	800	1,000
<input type="checkbox"/> Budget	800	3,500	4,200	5,400	7,200	9,000

“2.1. The management of practical science class”

In order to manage the practical science class program successfully, there should be close cooperation among all the participating parties. The participating parties include “Korean Science Culture Organization”, “A Local Autonomous Entity”, “the responsible management organization (university). Their main responsibilities are as follows: “The Korean Science Culture Organization” organizes the overall business plan and responsible for funding, “the responsible management organization” which is the Ehwa women’s university wise centre is responsible for utilizing the high quality women’s manpower who left the work force after the marriage and develop the program which suits the local specific needs and also work as lecturers of experimental programs. “A Local Autonomous Entity” is mainly responsible for the overall administrative management, such as running the classes, enrolling the students to the program, collect the expenses for the experimental materials and investment.

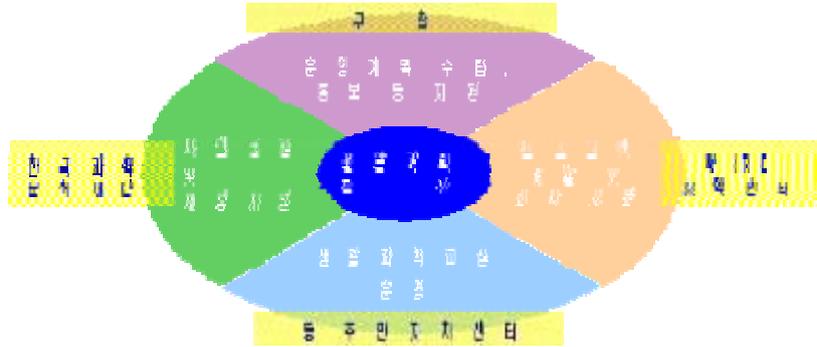


Figure 1

Figure 1. Management system

도표 1:

구청: The district office

한국 과학문화재단: The Korean Science Cultural Organization

Wise 지역센터: Wise Local Centre

동 주민 자치 센터: The Residents' Autonomous Centre" 운영계획수립

및 홍보 등 지원: Planning of management and PR 사업총괄 및 재정

지원: Management of business and financial support 프로그램 개발 및

강사 지원: Development of program and support of Lecturers

생활과학교실운영: Operation of practical science class

“2.2. The types of management program”

The management of practical science class can be segmented by the sectional businesses and also by the types of program. First, for the sectional businesses, the operation of practical science class by the district office will target for youth and run the programs like interesting scientific experiments, experimental experiences and etc.. Second, they visit 2~3 social welfare centers for alienated group of people and run the practical science class. Third, they run the district specialization programs such as visits to up-to-date organizations, ecology inquiry sessions, talks from the infamous scientists, observation of science related facilities, showing the science movies and so on. For the types of program, first, they run the general scientific experience program. Second, experimental program whereby they utilize the practical materials and help the

public understand the principal of science and third, for housewives and others, they run the science program that shows how the science can be related to food, clothing, shelter and electronic appliances. These kind of segmented programs give options to the public and widen the opportunity to experience various types of science program that they can easily relate to.

“3. Evaluation”

During the science festival in October 2005 and February 2006, the survey was carried out to those who were participants of the practical science program. The result obtained from the questionnaire showed a great interest in science among the respondents. As illustrated in Figure 2, when asked “what comes to your mind when you hear science?”, 40% answered “experiment”, 12% “interesting”, 12% “marvelous” and 12% “scientist”. Please see Figure 2 for the detailed responses:

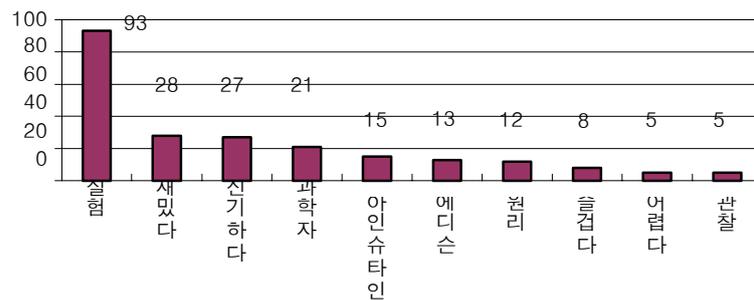


Figure 2. What comes to your mind when you hear science?

도표 2 : Experiment, fun, marvelous, scientist, Einstein, Edison, principal, exciting, difficult, observation

For another question “what do you think of science?”, 40% responded “interesting”, 17% “marvelous”, 10% “fun” and 7% “beneficial” which showed the tendency of change in perception of science – a lot more positive.

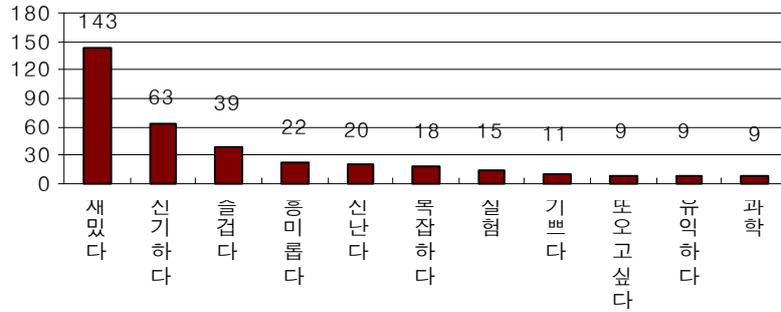


Figure 3. What do you think of science?

도표 3 : fun, marvelous, exciting, interesting, exhilarating, complicated, experiment, happy, want to come again, beneficial, science

And for the question of “what are the benefits of science?”, 93,7% of respondents said fun and interesting and for the question of “Do you want to have more science festivals?”, 92.1% respondents said yes. The major findings from this questionnaire were two folds: the demand for science program would continue to increase and the district residents are keen to see the continuous development of their districts to be rich with scientific culture that promotes creativeness, efficiency and rationalization, etc.

Table 2. The usefulness of science

contentment	Contentment (%)					Total
	Excellent	Good	Fair	Not Good	Poor	
Fun and interesting	57.1	36.6	5.2	0.0	1.0	100
Educational Value	40.3	44.5	13.6	0.5	1.0	100

“4. Reason for success”

The practical science program which was initiated by a local autonomous entity in Seoul became the centre for the Korean science program and the program itself has been spread throughout the country and successfully implemented. The reasons for success are many: first, its precise expectation of demand for science program. To start the practical science program, Youngdungpo-gu was not an ideal location. It lacked in resources and infrastructure. However, they understood that the parents were desperate for their children to receive better education. In order to satisfy their need, they designed the program that did not cost much but interesting enough to attract the students. Second, they opened “the residents’ self governing centre” with no additional expenses but succeeded in promoting the services. Besides, the representatives of the residents in the district office and residents’ self governing centre volunteered to promote the program and persuaded the parents to send their kids to the program. Lastly, the success was hugely contributed by cooperative nature of the program. For example, many of experimental materials were plastics, cans, soda, vinegar which were easily sourced and recycled. And the students could save the cost (USD5 per month) by working as a team. This promoted the idea of corporation and healthy competition among students during the program.

“5. Conclusion and achievement”

The vast science expo planned by the government has limitation in sharing its benefits to those who live in rural or less developed areas. Besides, the private classes which were popular in rich areas are too expensive for the public. The practical science class, however, overcame this problem and succeeded in bringing about the interest in science to the general public. Thank to the program, the very idea of science as being boring and difficult has changed to something of interesting and beneficial. In addition to this, this program also derived many of science related businesses that do not only contribute the building of foundation to science couture but also increased the interest and favorable attitude towards it. Due to the low cost involved, many students could participate the program and this touched many of young hearts who would continue to enquire in science and would grow up as future scientists.

“6. Assignment”

In order for this business and other similar science communication business to be able to secure their position in the administrative businesses, it is necessary to have a consistent effort to keep the sprit going by providing a proper funding, management, and the participation of local autonomous entities. For this business, we have to constantly develop the new programs and research on what

the science that our residents want in their respective districts through questionnaires and study how we can deliver what they want. To be more precise, we continue our program for elementary students and open practical classes for housewives and others and teach science in the context of their daily lives - help them understand what the principal of science in electrics, water, electronic appliances etc is and how they can save the energy and also how to recycle.

We also have to open classes for more alienated group of people. We implement “quota for participation of alienated people” and make it compulsory to accept the alienated people in their program. This can run parallel with the mobile practical science classes where they visit the welfare centre and run the class on the spot. Therefore, in order for these similar programs to be succeeded, we can no longer rely on the government funding solely but the local autonomous entities have to play a major role to secure the sufficient funds, consistently invest in the business, become self sufficient and communicate with their district residents not how to teach science but help them know what is science.