Chapter 3-5b

THE INTERNATIONAL DISTANCE LEARNING ACTIVITIES OF *HSARUC*

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Information education is one of the important trends of thought concerning today's education reform as well as the requirement of the age. The revolution of science and technology not only calls for an adaptation and innovation of what to learn, but also directly affects the means and way of how to teach and learn. Modern education technology is exerting a more and more profound influence on the way of teaching. Such up-to-date means as computer-aided instruction, distance learning and the learning and research on-line are booming.

Distance learning is a way of education aiming at the development of high-quality education by drawing on modern information technology. Compared with other forms of non-classroom education, the remarkable interactivity of distance learning between teaching and learning brings the education quality to the equivalent of classroom teaching.

Modern distance learning fortifies the traditional teaching with flexibility in time, openness of education, and optimization in content and resource pool. Unbinding the restriction of time, space and capacity, it makes teaching and learning more equalized, humanized and individualized. On the other hand, it lays a foundation for multiform and multilevel education and prepares updated resorts for the structure and perfection of life-long learning systems as well.

The High School Affiliated to RENMIN University of China[1] remains the leader of Chinese high schools in the field of distance learning.

In April of 1998, HSARUC conducted a pilot project of multiple media online distance learning with Reed High School of Canada. Both Chinese and Canadian students enjoyed a lively atmosphere communicating in

English via net meetings. As the first in China, this activity claimed the attention of the educational organizations and media of both countries.

HSARUC conducted another multimedia distance course of Conversational English with Canton College of Technology of SUNY Canton and Canton Central Schools of the United States in April of 2000. Via the visual conference system and ISDN, the students of both countries had the lessons by an American instructor. Discussions and question-and-answer could be performed between the two sides with the help of camera lens and all-directional microphone. After class, the students from both sides would be regularly involved in on-line assignments, including virtual discussion, paper writing, quiz and e-mail communications. So far, HSARUC has experienced three sessions of distance learning.

December of 2000 witnessed a realization of the Schools Connection Project sponsored by the Ministry of Education of China, which was firstly undertaken by HSARUC. As the central station, HSARUC launched a one-to-ten interactive distance course with ten schools of Beijing's remote counties on the basis of television, sound and IP data radio technology.

In 2001 a modern interactive distance-learning network with the digital satellite broad band of 54m was successfully installed in HSARUC. Based on positive conditions HSARUC was the first to undertake the Schools Connection Project of the Ministry of Education—a Construction for the Channel of the Secondary Education on the Basis of Multimedia Broadband Transmission.

The information reception system of sky net occurred in a distance teaching room where the instructor could present his lecture by the aid of multimedia and electronic white board. The communication went as smoothly as in classroom teaching but comparatively this was much more flexible, timesaving, and visual.

The advantage of distance learning will show itself far more evidently as the distance between the instructor and the students becomes greater. It can cope with individual interactive learning with a particular instructional design as well as large-scale teaching to form a resource pool. In so doing, students scattered in different areas of Beijing will be able to gain high-quality education as their counterparts will in the centre of the city.

In October of 2001, a distance course of mathematics between 20 students from HSARUC and 15 students from the Tennoji High School Affiliated to Osaka Education University started.

This distance course is a big breakthrough in the history of our distance learning as well as an unprecedented co-operation. The breakthrough is embodied by the change of instructor role and the content of the course. Specifically, instead of teachers, students of both sides are playing the role of instructors through the whole activity. On the other hand, rather than

English as the content, mathematics and painting is the topic discussed by the students.

This activity consisted of three teaching units:

1. Introduction of the usage of projection in Japanese ancient paintings from the perspective of analytic geometry by students from the Tennoji High School Affiliated to Osaka Education University
2. Introduction of the usage of perspective in Chinese ancient paintings from the perspective of Euclidean geometry by students from the High School Affiliated to RENMIN University
3. Communication between students from both China and Japan

English was used as the working language through the whole activity. Besides the instructional sessions, teachers and educators from both countries presented an evaluation on the student's performance and creativity and conducted a hot discussion about how to foster the students' creativity.

The theme of the distance teaching activity, "Painting and Geometry", is obviously a great challenge to Chinese students, for they had to confront their ignorance of scientific knowledge and shortage of Chinese references. When they were making efforts to search on the Internet for the relevant information they found that almost no one was even involved in this field. Although there were some limited Japanese materials, the language barrier became a huge obstacle to hinder them from going ahead. As is known to all, what they have learnt of geometry is Euclidean geometry, but geometry involved in this topic belongs to the field of Non-Euclidean geometry. What is more, lack of basic painting skills is also a serious problem. To solve all these difficulties, they divided themselves into several teams such as math team, computer team, painting team and information gathering team, with different teams for different tasks. For example, the math team studied the book *Modern Geometry*. The computer team and the painting team collected information about paintings and art, downloading a number of famous paintings, some of them were of the Renaissance while others were of the Chinese Ming and Qing dynasty. Some of the students even studied the introductory course of Art History. Each team drafted its own research program and completed its own presentation materials. Each team seemed individual, however, they communicated a lot with each other and helped each other.

All the preparatory work involved, from making PowerPoint, the program of the three-dimensional flash, to the accumulation of the materials, were designed and completed by the students. The entire activity was filled with an animated atmosphere. All the students showed such great passion that every one of the three teaching units exceeded the time limit.

With the development of science and technology, students' ability and structure of knowledge have to some extent over-run their teachers. For this reason we educators are confronting a challenge, that is, how should we fully tap students' potentialities in secondary education.

Through the distance teaching activity, the students, playing the main parts, were the protagonists. They acted as the chief roles while teachers just provided the backstage support for them. During the interaction with the Japanese students, all of them were not only students, but also teachers. The whole preparations for the presentations, such as searching information, making teaching-aids, composing presentation plan, were totally done by the students themselves. Through this process they learnt methods of research and experienced the segments of teaching. Moreover, they tasted the hardships that their teachers face every day. More importantly, they experienced the inner relationship between painting and geometry by making their own paintings. This distance teaching activity was a great success. The students enjoyed high ratings by Japanese friends. They attributed these achievements to TEAMWORK, which is the quintessence of Chinese collectivism.

The successful performance of this Sino-Japanese distance learning activity allowed us confidence to tap educational potential. We obtained illumination in the following aspects.

1. This distance learning activity has not only granted the students knowledge but also helped them understand each other. It is a significant practice for making a world peace as well as for making the international academic exchange.
2. A different idea of education is embodied through this activity. The traditional role of teacher and student has greatly changed. Once as a controller, the teacher now acts as a supervisor. In the meantime, the students, taking the main role of the entire activity, have fully brought their potentialities and aptitude into play.
3. Through this activity, the content of mathematics has been enriched. Moreover its vast function has been applied. Besides the lectures, the students made some analyses about some noted art works like the Monument of the People's Heroes and Tian An Men Gate Tower with math principles and synthesized them via high technology.
4. This innovative education attaches importance to student-development-oriented education. During this activity, the students made an exploration with an open mind, enjoyed the fruit of the creativity in completion of the open tasks and displayed their own achievements in an open class.

One of the participants of this activity, Ren Yuan, spoke out his thought in the follow-up questionnaire:

With the rapid progress of information technology and the apparent tendency of globalization, the world has entered its brand new era, which we call "knowledge-sharing" era. This will not only be a good opportunity for us teenagers, but a great challenge. It is the Chinese students' choice to accept this challenge, and to face it with an extraordinarily active attitude.

Before this activity we even never thought of relating painting with math, for they used to appear as two totally different subjects. We were studying math and art isolated assuming that math is math while art is art.

"Painting and Geometry", an aspect involving mathematics and art, is a newly developed category which perfectly integrates the logical principles of geometry and the aesthetic value of art. We improved our abstract thought of math, our imaginative thought of art, as well as creativity and the aesthetic appreciation. The training and exploration enabled us to fuse mathematical thought, painting admiration and artistic creation together as an "alloy". And this will definitely be significant for us.

NOTE

[1]**A brief introduction to the High School affiliated to RENMIN University of China**

HSARUC, founded in 1950, is among the first model high schools approved by Beijing Municipal Government. With Madame Liu Pengzhi as the head, the school is striving to become superior nation-wide, first – class worldwide.

HSARUC set up a fiber Ethernet of 100m with ten servers in 1998, via which all the offices, classrooms and laboratories of the school can access to the Internet. In order to promote communications between various depart-ments, a huge information pool was built involving banks of teaching aids, subject resources, audio-visual resources, programs, CDs and books. The information capacity of the school amounts to 700GB. In March of 2001, a modern interactive distance-learning network with the digital satellite broad band of 54m was successfully installed in HSARUC. Based on these positive conditions HSARUC was the first to undertake the Schools Connection Project sponsored by the Ministry of Education of China – a Construction of the Channel for Secondary Education on the Basis of Multimedia Broadband Transmission.