Exploration of Chinese-Korean Cooperative Multimedia Design Education

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ABSTRACT

This paper has done a study of Chinese-Korean cooperative multimedia design education. Sino-Korean school of multimedia was set up by Shanghai University of Engineering Science (SUES) and Korea Dongseo University in October 2002. We have created "3.5 +0.5 Teaching Model". In this model, Chinese and Korea professors take courses together. Firstly, paper points out the Chinese government policy background of Chinese-Foreign Cooperation in running schools and the development of Chinese-Korean cooperative multimedia design education in SUES. Secondly, by analyzing the multimedia design industry to understand the Chinese multi-media design education. Thirdly, paper made in-depth studies for "3.5+0.5 Teaching Model" so as to draw the experience of successes and problems. Through analysis of "Questionnaires for students' learning and living conditions in Dongseo University in 2009" by spss16.0, paper made a research of mode of "A semester studying in Korea". Finally, paper points out the development direction of Chinese-Korean cooperative multimedia design.

Keywords: *Chinese-Korean cooperative Multimedia Design education, "3.5+0.5 Teaching Model"*

1. INTRODUTION

1.1 The Background of Research

With the implementation of the policy of reform and opening to the outside world, the veteran leader Deng Xiao-ping pointed out that Chinese education should be geared to the needs of modernization, of the whole world and of the future. Then Chinese-Foreign Cooperation in Running Schools was started in 1978. The development of Chinese-Foreign cooperation in running schools in China can be roughly divided into three stages [1]. It is summarized in Table 1.

Table 1. Three stages of development of Chinese-Foreign cooperation in running schools

Stage	Government policy	Education scale
1978 -1994	" Three Catres" by Deng xiaoping	Nanjing University, Renmin University of China, Fudan University etc.
1995 -2002	"Interim Provisions on Chinese-Foreign Cooperation in Running Schools".	As of the end of 2002, there was 712 Chinese-foreign cooperative education institution or the project , covering 28 provinces, autonomous regions and municipalities.
Since 2003 to now	"Regulations of the People's Republic of China on Chinese-Foreign Cooperation in Running Schools" [2]	Up to July 23, 2008, Undergraduate education: 23 Independent Colleges, 247 undergraduate courses; Postgraduate education: 5 independent colleges, 76 majors.[3]

Chinese-foreign cooperation in running schools is an undertaking beneficial to public interests and forms a component of China's educational cause. For Chinese-foreign cooperation in running schools, the State adopts the policies of opening wider to the outside world, standardization of running schools, exercising administration according to law and promoting its development. The State encourages Chinese-foreign cooperation in running schools to which high-quality foreign educational resources are introduced. The State encourages Chinese-foreign cooperation in running schools in the field of higher education and vocational education, and encourages Chinese institutions of higher learning to cooperate with renowned foreign institutions higher learning in running schools.

In order to adapt to needs of development of China's and Shanghai's economic and industry, SUES actively carry out cooperation in running schools. Through the efforts it gets remarkable achievements. Until now there are 9 Chinese-foreign cooperative educational programs in SUES. [4]

In October 2002, Sino-Korean school of multimedia of SUES approved by the Shanghai Education Commission to set up a new major of Art Design (Multimedia Design direction) with Korea Dongseo University. We set up "3.5 +0.5 Teaching Model". Chinese and Korea professors take education courses together. Students have a semester studying in Korea.

1.2 Research Methodology

Firstly, paper points out the Chinese government policy background of Chinese-Foreign Cooperation in running schools and the development of Chinese-Korean cooperative multimedia design education in SUES.

Secondly, by analyzing the multimedia design industry to understand the Chinese multi-media design education.

Thirdly, paper made in-depth studies for "3.5 +0.5 Teaching Model" so as to draw the experience of successes and problems. Through analysis of "Questionnaires for students' learning and living conditions in Dongseo University in 2009" by spss16.0, paper made a research of "A semester studying in Korea".

Finally, paper points out the development direction of "3.5 +0.5 Teaching Model" of Chinese-Korean cooperative multimedia design.

2. UNDERSTANDING OF CHINA MULTIMEDIA DESIGN EDUCATION

In China, multimedia mainly refers to digital media. What is the digital media? Digital media refers to information carriers which using the binary digital data as form to record, process, disseminate, access the course of events. Digital media includes Logical Media (perception and presentation) and Physical Media (display storage and transmission).

After digital media technology completed the organic integration of scientific technology and art, digital media design is formed. It is focused on information science and digital technology, based on the theory of mass communication. Modern art serve as a guide.

Multimedia design is comprehensive interdisciplinary which is a high degree of integration of science and art. It makes information and communication technologies applied to culture, art, business, education and management. In China multimedia design is also known as 'digital media design' and 'new media design'. It is the result of integration and distillation of science, technology and arts. Multimedia design handling objects is the rapid increase in digital information, according to certain criteria (such as the aesthetic principles) into the data compression, storage, transfer, and ultimately to achieve shared. During the design process, designers should combine design elements and technical elements to integrate information, designers should become a bridge between the user and information.

2.1 The development of Digital Media Industry in China

Multimedia Industry sometimes has been called the Digital Content Industry in China, and that is a synthesis between the Content Industry and the Information Industry.

EU 'Info2000 plan' in the main body of the Content Industry is defined as "those who manufacture, develop, package and commercialize information products and services industry."

Information Industry particularly refers to：specific information in a commodity industry, It not only includes software, databases, a variety of wireless communications services and online information services, but also includes the traditional newspapers, books, films, audio-visual products, publishing, and computer and communications equipment, such as the production will no longer to be included, it has been designated as a branch under the manufacturing sector.

In China, Information Industry is divided into four sectors: publishing industry, film and recording industry, radio and television and communications industry, information services and data processing services industry.[5]

Digital Content Industry refers to the products or services which integrate the content of graphics, text, images, sound, etc. It covers mobile content, internet services, games, animation, audio and video, digital publishing, digital education and training and other fields. In future, expansion of the border of digital content and services industry based on information technology will become wider and wider, Today increasingly take the heat, text messaging, online games and VOD on demand, music downloads, and even QQ and so on belong to this emerging Digital Content Industry. By 2010 the output value of China's Digital Content Industry will reach 100 billion Yuan.

We find that development of multimedia industry is gradually undergone a process of awareness，its definition is still a developing concept of dynamic. With the continuous development of social productive forces, the new names continue to emerge, such as Content Industry, Information Industry, Creative Industry etc, the names of these industries from different perspectives to deepen people's understanding of Digital Media Industry.

Multimedia Industry has the following characteristics:

a) Emphasis on originality and intellectual property.

b) Interdisciplinary of cross-media, cross-industry: Digital Media Industry involves traditional production and service industries, information technology and communication technology, culture and education, arts and entertainment.

c) Technology-oriented: science and technology are the core driving force for development of multi-media industry.

The Chinese government is strongly supporting the development of Multimedia Industry. The Ministry of Information Industry, the Ministry of Culture and the State Administration of Radio Film and Television are main responsible departments of the Chinese government.

2.2 The Analysis of education content and education courses which is necessary to create multimedia works

The educational content of multimedia design must come from the Multimedia Industrial division of labor, to study the educational content of multimedia design must be based on multimedia division of labor as the starting point, teaching the

course should be able to meet the needs of industrial development, grasp the direction of industrial development.

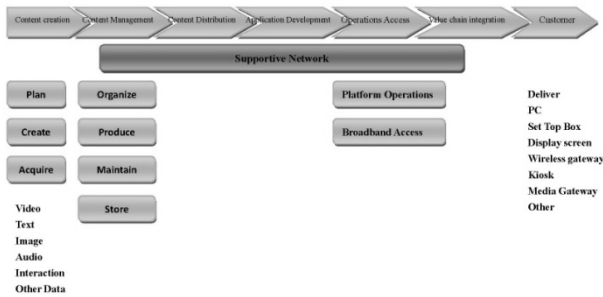## 2.2.1 The general process of production in Multimedia Industry [6]

Fig. 1. The general process of production

The process of production in Multimedia Industry include: Content creation, Content Management, Content Distribution, Application Development, Operations Access, Value Chain Integration, Customer Service. (see Table 2.)

Table 2. The process of production in Multimedia Industry

Content creation	the acquisition of digital signal , such as: text graphics, images, sound, the television signals etc.
Content Management	the information needs to be formatted to express, also needs to be standard in the management of stage.
Content Distribution	to link the information sent to the client.
Application Development	to display the produced out of digital content to the user. After a certain amount of resource integration and optimal allocation, it will has capacity to form new applications.
Operations Access	operating platform and transmission channels.
Value chain integration	including business integration and technology integration.
Customer	Customers using a variety of receiving devices to access to digital media content.

2.2.2 The composition of multimedia designer's knowledge

Multimedia design work mainly concentrated on the original stage and production stage in the multimedia industry, the sectors involved: electronic games, computer animation, digital audio and video, mobile Content, E-learning, Network Services, digital creative, software development etc.

According to the composition of multimedia designer's knowledge, Chinese-Korean school of multimedia of SUES set up the curriculum. (see Table 3.)

Table 3. The Curriculum of Chinese-Korean school of multimedia (SUES) [7]

Semester		Course Name
1	C.P	Computer Basis, Sketch, Color, Trois grandes compositions Conspectus of Art
	K.P	Multimedia Design Basis Ⅰ
2	C.P	Art Dissection, Media and Cultural, Three-dimensional modeling (clay), Graphic information processing
	K.P	Multimedia Design Basis Ⅱ, Computer image processing
3	C.P	Multimedia Design Theory, Visual Communication Design Basis, Basic Photography, A Brief History of Chinese and foreign art, Introduction to Advertising, History of Art and Design, Appreciation & Analysis of Famous Works, Music Appreciation
	K.P	Originality Engineering Design, Game Engineering
4	C.P	Three-dimensional information processing, Korea Ⅰ, Multimedia Industry Operations, Advertising Photography, Program Design Basis, Web Design
	K.P	3D image basis Ⅰ
5	C.P	Korea Ⅱ, C++
	K.P	3D image basis Ⅱ ,visual identity system design,Interaction Design Ⅰ, Virtual Reality design Ⅰ, Digital media design Ⅰ, Digital Animation Design Ⅰ
6	K.P (to study in Korea)	Digital media design Ⅱ, Digital Animation Design Ⅱ, Interaction Design Ⅱ, Virtual Reality design Ⅱ, Simulation Design, Interface Design, Project Design, Sound Editing for Visual Media, Korean（junior 2）
7	C.P	Project Management, Information search, Analysis of television programs and movies,
	together	Graduation Design Ⅰ
8	together	Graduation Design Ⅱ

***C.P ： Chinese professor, K.P ： Korea professor

The curriculum in Chinese-Korean school of multimedia (SUES) was divided into four modules：Art & Design series、Computer series、Multimedia series、Humanities series. Chinese professors teach the professional foundation courses (Art & Design series, Humanities series and part of Computer series), Korea professors teach Professional-level courses (Multimedia series and part of Computer series).Our students can go to Korea to make the full use of advanced teaching resources, to complete the professional-level courses for a whole semester.

3. THE DISCUSSION ON "3.5 +0.5 TEACHING MODEL"

3.1 The experience of successes and problems of "3.5 +0.5 Teaching Model"

"3.5 +0.5 Teaching Model" of Chinese-Korean school of multimedia (SUES) gives students more opportunities to communication with different professors who come from different countries. In order to facilitate multi-directional, multi-angle design their own future, students should as much as possible exposure to different educational concepts, research

methods and ways of thinking. This is precisely the strengths of Chinese-Korean cooperative education.

On the other hand, problem of "3.5+0.5 Teaching Model" it is natural. The main problem with 2 points: one is failure of communication between Chinese and Korea professors because of the language, this problem also exists between Korea professors and Chinese students. Despite of translator's help, the communication is still not very free, which affected the teaching effect.

The other one is variations in the understanding of design caused by cultural differences. Sometimes, Chinese and Korea professors' teaching will be in conflict, so that students have lost direction.

3.2 The research of "A semester studying in Korea" of "3.5 +0.5 Teaching Model"

Since March 2006, we sent our students a whole semester studying in Korea. That is, after five semesters of study in Shanghai, the entire class will go to Dongseo University to complete the sixth semester of the academic, and then return to Shanghai to complete the graduation design.

A semester studying in Korea will give students the overall abroad studying and living environment which will play an important help for the future development of them. A good language environment, first-class education system and faculty sufficiency is most important.

For a comprehensive understanding of Course content, teaching methods and living conditions of students when they were studying in Dongseo University, author made a Questionnaire specifically. By selecting part of the survey to test and get the issue of feedback, over 3 times to modify the content, I completed the questionnaire. The first part includes the basic situation for the respondents, including classes, student number, gender, professional direction, it is Fill-in. The second part is divided into the main, that is, the evaluation indicators of students' satisfaction, it is the multiple-choice questions.

The main part includes 42 multiple-choice questions (or called variables): Evaluation of the overall impression of Dongseo University (1 question), Curriculum evaluation (7 questions), Evaluation of classroom teaching (8 questions), Evaluation of environment of studying and living (6 questions), Evaluation of personal growth (13 questions), evaluation of teaching methods of professional courses (8 questions). Evaluation indicators use the Cumulative "5 LIKERT Scale" method[8]-[10], that is giving the five attitudes "very satisfied, satisfied, in general, not satisfied, Very Dissatisfied" the value of "5,4,3,2, l". The last part is essay questions, for the purpose of the discovery and amendment of the inadequacy of the first two parts of the questionnaire. This survey was sent 49 students in all class, and the questionnaire response rate was 100%, and the number of efficient questionnaires was over 46.

Table 4.summrizes the rationality of the overall curriculum of Dongseo University of students divided by 4 major. Major 1 is 'Planning of multimedia design', major 2 is 'Digital Animation', major 3 is 'Interactive Design', major 4 is 'Virtual Reality Design'. From table 4 we can know that 71.5% of 4 majors' students were satisfied with the overall curriculum. 24.5% of them were in general. Just 4% of them were not

satisfied. This shows that the course content is very attractive to students.

Table 4. The rationality of the overall curriculum of   Dongseo University

		The rationality of the overall curriculum of Dongseo					Total
		1	2	3	4	5	
Major 1 Count		0	1	5	6	1	13
% within major		.0%	7.7%	38.5%	46.2%	7.7%	100.0%
Major 2 Count		1	0	1	9	2	13
% within major		7.7%	0%	7.7%	69.2%	15.4%	100.0%
Major 3 Count		0	0	3	5	2	10
% within major		.0%	.0%	30.0%	50.0%	20.0%	100.0%
Major 4 Count		0	0	3	6	4	13
% within major		.0%	.0%	23.1%	46.2%	30.8%	100.0%
Total	Count	1	1	12	26	9	49
	%within major	2.0%	2.0%	24.5%	53.1%	18.4%	100.0%

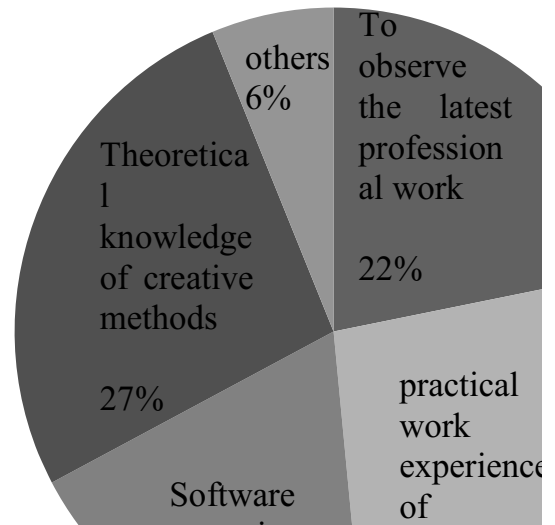*** 5:very satisfied, 4:satisfied, 3:in general, 2:not satisfied, 1:very Dissatisfied

Fig. 2 what is the students most want to learn from professors in professional courses

Fig.2 summarizes what is the students most want to learn from professors in professional-level courses. From Fig.3 we can find what kind of knowledge is more popular among students.

From Table 5. we found effect of translation in class is not good enough. According to the survey we find that the terrible translation quality is the biggest problem of teaching methods.

Table 5. Gender*Evaluation of the Effect of Translation

		Evaluation of the effect of translation				Total
		1	2	3	4	
Gender1	Count	0	5	10	7	22
	%within Gender	.0%	22.7%	45.5%	31.8%	100.0%
Gender2	Count	1	8	12	6	27
	%within Gender	3.7%	29.6%	44.4%	22.2%	100.0%
Total	Count	1	13	22	13	49
	%within Gender	2.0%	26.5%	44.9%	26.5%	100.0%

*** 5:very satisfied, 4:satisfied, 3:in general, 2:not satisfied, 1:very Dissatisfied
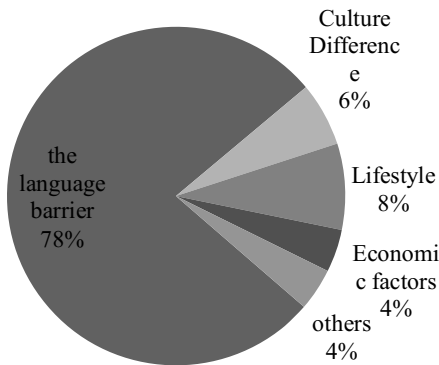

Fig. 3. The difficulty of students' lives in Korea

Fig.3 summarizes the students' difficulty in Korea. From Fig.3 we found language is the biggest difficulty in students' life in Korea.

3.3 The Evaluation of "3.5 +0.5 Teaching Model"

3.3.1 "3.5+0.5 Teaching Model" is a good method to upgrade China's undergraduate education in multimedia design as soon as possible

The core curriculum of Multimedia Design needs the first-class teachers and a large number of advanced digital media production equipment, now there is not enough in China. "3.5+0.5 Teaching Model" is able to maximize the sharing of high-quality educational resources of foreign co-operation institutions (such as Dongseo University in Korea).

In Dongseo University there are many excellent professors who have modern education concept and global perspective because of their educational background abroad. Its first class teaching facilities with specially designed and spacious classrooms, the world's top library and 24-hour opening computer room are among the best in Korea. Also its teaching system of multimedia Design gets ahead.

3.3.2 The communication and cooperation between Chinese and Korea professors is the most important guarantee of "3.5+0.5 Teaching Model"

Of course, the communication and cooperation between Chinese and Korea professors is the most important guarantee of "3.5+0.5 Teaching Model". Chinese teacher who lead students is an essential and necessary part of "3.5+0.5 Teaching Model". This is particularly important for students studying in Korea. Chinese teacher is very understanding of Chinese students, there is no obstacles to communicate with them. Chinese teacher can protect the teaching order when students' Korea is not good enough. Our experience indicates that Chinese teacher should be professional teacher and understand Korean who lead students to go to Korea.

3.3.3 "3.5+0.5 Teaching Model" can enhance students' comprehensive quality

A semester studying abroad makes students more mature. As only one child in family our students are spoiled by their parents. So their mental age is too small. Unfamiliar living environment of foreign enhance the life skills of students and develop their independent consciousness. Through interaction with Korean students (In particular, the boys who retire from army) Chinese students have much more sense of responsibility. Life studying abroad makes students much more patriotic. They are more concerned about the development of the motherland. By comparison they consciously learn the advanced experience of Korea from all aspects of life.

A semester studying abroad exercises organizational capacity of the students. During the study, they are more adept at cooperation with others. Now our students take a more correct attitude towards learning through feeling the Korea students' the spirit of hard work.

3.3.4 Existing inadequacies and the future direction of "3.5+0.5 Teaching Model"

"3.5+0.5 Teaching Model" comes from the creative practice of teaching first-line, it is the crystallization of Chinese-Foreign cooperative education. Table 6.summrizes the inadequacies of the semester studying in Korea of "3.5+0.5 Teaching Model", we can find out the existing inadequacies through the questionnaire survey data. The problem can be divided into system construction and teaching convergence.

Table 6. Existing inadequacies A semester studying in Korea of "3.5+0.5 Teaching Model"

Inadequacies	which need to improve
System construction	Chinese teacher who lead students studying in Korea need clear terms of reference, better working environment.
Teaching convergence	The quality of Korea language teaching in China need to be improved
	The translation quality of classroom teaching need to be improved
	Related courses in China and Korea should be integrated

4. CONCLUSION

The Sino-Korean cooperative teaching mode that sends the juniors of multimedia design of SUES to Korea to study a whole semester is the earliest in Shanghai，China. In university life，students have chance to study abroad in 4 months that is an unforgettable experience for everybody.

To solve the existing communication problems "3.5+0.5 Teaching Model" should develop in-depth. The further developing direction is "3+1 Teaching Model". That is the entire class will finish the sixth and the seventh semesters in Dongseo University, at same time the students should complete the graduation design in Korea. The level of students' graduation design should be more outstanding, so they could find much better jobs or further study for master's degree.

REFERENCES

[1] Feng FaMing," Study on the sustainable development of Chinese-foreign Cooperation in Running Schools," *Journal of EDUCATION AND VOCATION, vol.535,no. 3, 2007*, pp. 45-46.

[2] People's Republic of China State Council Decree, No. 372, *Regulations of the People's Republic of China on Chinese-Foreign Cooperation in Running Schools*, *effective as of September 1*, 2003.

[3] Ministry of Education of People's Republic of China，*List of institutions and projects of Chinese-foreign cooperation in running school,23.July* 2008.

[4] Office of International Cooperation Exchange Office for Hongkong, Macao&Taiwan Affairs of SUES, *List of Chinese-foreign cooperative projects,19.Sep*.2008.

[5] The concept of the information industry, http://ay.smehen.gov.cn/xxhdt/shownews.asp?newsid=39&t.

[6] Beijing NuoDa Consulting (NDC) CO.,LTD 'Development of China Digital Media Industry Report 2005' ,2006．

[7] Sino-Korean school of multimedia of SUES, *Teaching and Training Program,* Sep. 2006.

[8] Yang Xiao-qiu, "Library Satisfaction Questionnaire Design SPSS," *Journal of LIBRARY AND INFORMATION SCIENCES IN AGRICULTURE, vol. 20, no. 8, Aug. 2008,* pp. 171-174.

[9] Xing Wu-qiang, LUO Wei-min, "Application of SPSS to the appraisal of teaching quality," *Journal of XI'AN UNIVERSITY OF P0ST AND TELECOMMUNICATIONS*, *vol.13, no. 5, Sep. 2008,* pp. 162-166.

[10] Tian Fu-ping，Wang Xu-zhen，Wang Xin-ping，Jin Changde, " The Comparison of the Two University's Questionnaires at Home and Abroad," *Journal of HIGHER EDUCATION IN CHEMICAL ENGINEERING, vol. 101, no. 3, March. 2008*, pp. 6-9.78.

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