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Significance and Methods of Bilingual Teaching of Industrial Design History

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Abstract: Bilingual teaching plays an important role in training students' communication skills with professional English and mastery of the strengths of Chinese and western teaching concepts. Therefore, bilingual teaching is an effective teaching mode which is worthy of popularization for the purpose to cultivate high-quality compound talents in the new century, it is of great importance in the teaching of the history of industrial design. The course aims at cultivating the theory accomplishment and aesthetic ability and laying a solid theoretical foundation for students' design practice in the future based on grasping the historical development and evolution of industrial design. At the same time, bilingual teaching can also enable students to face the domestic and international academic exchanges leisurely by using bilingual effectively and adapt to the updated professional knowledge. This study focuses on the significance and methods of bilingual teaching of the history of industrial design in many aspects.

Key words: History of industrial design, bilingual teaching, significance and methods

MEANING OF LEARNING THE HISTORY OF INDUSTRIAL DESIGN

First, learning the history of industrial design is to grasp the significance of the historical development and evolution of it. Meanwhile, it lays a solid theoretical basis for future design practice to learn the essence of traditional history and to inherit it and carry it forward. Modern design has a trend of diversified development (Chen, 2008) and varieties of styles and schools coexist. But modern design has been facing an urgent problem on the inheritance and development of the traditional. Learning about the history of industrial design is an important way to learn and understand the traditional. Japanese designers once remarked that Chinese designs cherished the traditional too much, resulting in little change in usage. Fundamentally, our inheritance traditional design remains in the imitation of traditional modeling symbols and art style. The fundamental cause of the design community to this phenomenon is that the designer does not grasp a thorough understanding of traditional design (Gao and Li, 2005). The traditional and the modern are not contradictory because traditional culture is a tremendous resource treasure house for modern design. Many good traditional designs still exude their vitality. The learning of the history of industrial design emphasizes the learning and imitation of

the domestic and foreign styles of art and design experience. Then, it can be carried forward (Lu *et al.*, 2010; Ibrahim and Al-Shara, 2007).

Secondly, the industrial design history learning can not only improve the students' cognitive ability and aesthetic ability, but also improve the students' comprehensive quality, which is an important way to improve the students' practical thinking ability. The history of industrial design study can lead the students to gradually form clear design thinking in the design practice and create a certain style (Teng, 2007).

It is important to learn the history of industrial design but many students don't realize the importance of it. Students in the history of art and design theory class expressed contempt and impetuous attitude (Xue, 2005) and have the "practice-important but theories-unimportant" thought. Students pay much attention to skill training and form exhibition while neglecting the history and theories, which eventually leads to their inabilities in the design practice to reach a certain height (Wang and Hua, 2011). If one does not recognize the importance of the teaching of design history and theory and to emphasize the skills training only, the failure of design education system will eventually comes out. Because the objective of the university learning aims to train the students to become real designers, rather than imitators and skill performers (Qi *et al.*, 2012).

SIGNIFICANCE OF THE BILINGUAL TEACHING OF "THE HISTORY OF INDUSTRIAL DESIGN"

Bilingual teaching refers to the use of two languages, namely, native and second language (here refers to Chinese and English) organization, arrangement, teaching activities. Students can use two languages to describe the same knowledge to understand and master the knowledge. In the August of 2001, the "several opinions on the strengthening of undergraduate education and improvement of the teaching quality" issued by the Ministry of Education put forward: "undergraduate education should create conditions for the use of English as the language of public courses and specialized courses teaching...". Bilingual teaching creates an English environment and helps students to use two languages in learning and thinking. The course learning supplements the language learning. At the same time, it lets the students more easily understand the different cultures and improve their ability of intercultural communication. The different cultures of English bring students with learning interest and different ways of thinking, which will help students learn the culture essence of different curriculum. Bilingual teaching can make compound and bilingual talents and its advantages in learning a foreign language literature and absorbing foreign cultures are particularly obvious. The significance of bilingual teaching in particular has the following aspects:

- In bilingual teaching, students can grasp the forefront of first hand data of the subject frontier. The use of excellent foreign materials in the process of bilingual teaching can provide an international education and learning environment for students. Foreign study materials pay more attention to renewal and development of knowledge, because they are often edited by the frontier of experienced teachers or academic disciplines, who continue to add new content and new achievements and edit new textbooks. By the use of this material, students can grasp the latest information of the advanced technology in the field
- Bilingual teaching can make students experience and feel the open and international concept of education, educational system, teaching methods and ways of thinking while mobilizing the enthusiasm of the students at the same time. Chinese traditional education is an examination-oriented education system, which pays attention to a comprehensive transfer of theoretical knowledge and ignores the training of independent thinking. The developed countries pay more attention to the comprehensive

ability and quality and attach importance to the cultivation of capability analysis creativity and skills and problem solving. An international and open teaching environment can arouse students' interest in professional courses

- Bilingual education can improve students' comprehensive ability in the use of English. Foreign language learning is a comprehensive process of harvesting. Through every stage of learning, bilingual education enables students to research and learn by using the international academic languages, in order to master the skills of international expertise and the latest technology. So the students can continue to enrich and improve the quality and ability to face the increasingly fierce international competition
- Bilingual teaching, which combines the different features of Chinese and western education, not only highlights the solid foundation of Chinese education and rigorous reasoning, but also introduces the lively classroom teaching of Western education in the development of students' creativity and imagination. So bilingual teaching is very useful to improve the teaching level
- Bilingual teaching lays a solid foundation for the students in academic exchange and overseas study. English is one of the most commonly used languages in the world with a high rate of popularity. Domestic students rely on English communication while studying abroad. At the same time, English is also needed while foreign students come to China to learn the design and culture of China

Bilingual teaching plays an important role in training student's ability to communicate and the integration of the two aspects of Chinese and Western ideas. Therefore, bilingual teaching is an effective teaching mode which is worthy of popularization in the cultivation of high-quality talents in the new century.

APPROACH TO THE BILINGUAL TEACHING OF "THE HISTORY OF INDUSTRIAL DESIGN"

In order to better achieve the purpose of teaching, except emphasizing the significance of bilingual teaching of industrial design history, a scientific method must be insisted on as well.

Linking theory with practice: The teaching of the history of industrial design is different from that of other professional histories. In a certain sense, history of industrial design is not a simple comprehension of art and

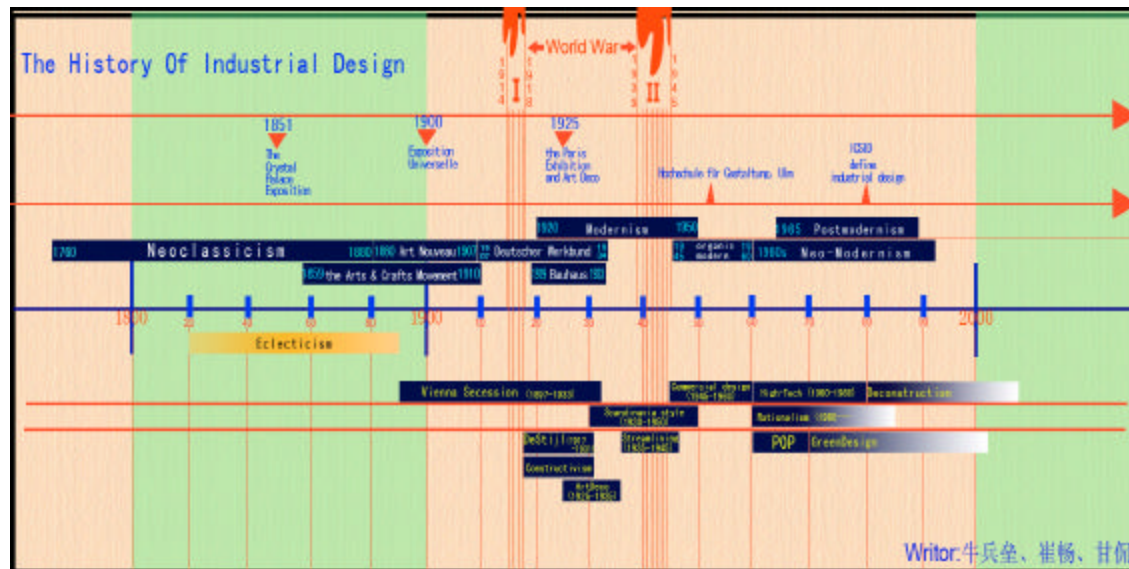


Fig. 1: Context diagram of industrial design history

design history. It also covers the history of technology, aesthetic history and part of the contents of social thought of human history. Although the curriculum is based on the clue of historical development, in the process of teaching we cannot discuss the history with history. History of industrial design has its own law of development, not in the purely historical time sequence. Students in the learning process is easy to neglect the link between history and the modern design practice because of the mere discussion of the history with history, which leads them to lose interest and pay attention to the course.

In the process of the teaching of the history of industrial design, it's important to integrate theory with practice, to refine practical values, aesthetic ideas and the influence and values on modern design on specific design works on the basis of the traditional interpretation of various art academies and design styles and from the actual illustration or examples of design.

Clear and vivid comb of the history: The content of history of industrial design is complicated. In order to offer a convenient and effective way for students, we can use the form of dot, line, face and body to comb the development of the history of industrial design context (Fig. 1). The point means the key events, excellent characters, genre, development and works on each historical stage. The line is the combing of the evolution and the development of the industrial design history of

the whole world or each country. The face is mainly about appreciation and induction of the design styles of each country.

The first step in the learning process is to sort out the "line". For example: The development of industrial design can be roughly divided into three periods. The first period starts from the second half of the 18th century to the beginning of the 20th century, which is the brewing and exploring stage for industrial design. The second is between the first and second world war, which is a period of the formation and development for modern industrial design. The third period is after the Second World War, when industrial design and production are closely integrated with technology and many great achievements were made. And every country formed a certain "line" in the development of design history. For example, Chinese garden architecture design can be roughly divided into three periods: 1) the pre-Qin and the time during the Qin and Han dynasties is the origin of Chinese garden. 2) The tang and song dynasties are the period of the formation of Chinese classical gardens. The most outstanding achievement in this period is the combination of landscape, painting and even literature. 3) The Ming and Qing dynasties are the heyday of Chinese classical gardens.

The "point" mainly refers to the key points in the development of industrial design history. In the history of industrial design, the two topics of "inheritance" and "change" have appeared alternately in different forms and come up with fierce confrontations from time to time. And

these confrontations are the key points in the process of industrial design in history. For example, handicraft design and industrial design are two different "points", but they exerted influence on each other. After the industrial revolution, the traditional design style was regarded as a particular cultural symbol, continuously impacting industrial design. Some basic principles of handicraft design also get sublimation in industrial design. "Arts and crafts movement", "new art movement", "the Bauhaus" are all "points" which show same features of changing orientation and the controversy with another one.

"Face" is the result of classification. Focused analysis can be laid on the industrial design of several typical countries to find out the personality and development path of every country and summarize the successful experience of various countries. We can also carry out in-depth comparison of the status of the industrial design in different countries at the same period.

"Body" means a dynamic "three-dimensional" industrial design history consisting of point, line and face.

"Dynamic composition" is a kind of modeling language of architectural art which got popular around 1980s and 1990s, which is mainly the revival and development of the in the beginning of the 20th century. Constructivism was created under the influence of Abstract art genres of the same period.

Their common features are geometric and abstraction. The skills and dynamic sense of conflicts, weaving, composition and dislocation in "Dynamic composition" are worthy of our reference in the process of learning history of industrial design.

There are a lot of historical events in industrial design history which reflect the "conflict, weaving, composite, dislocation" features. For example, arts and crafts movement conflicted with industrialization production.

The art characteristics of Japanese yamato-e blend themselves in the new art movement in Europe; Post-modernism design and crafts design show composite part of each other; pop movement in Europe and America occurred after world war ii, while Chinese pop art was in the late of 1990 s, which is the "dislocation" of history.

When we study designers all though the times, we should put them in a dynamic form. We should consider knowledge of politics, economy, culture and art to research the designers in all aspects and put them into the whole history of industrial design. We can also compare them with the designers of their age, before or after them. When analyzing the designer's achievement, we need to remember their narrowness and can even assume them in the history of past or future to do a "virtual" study, so as

to clarify their importance in the era as well as their personal limits. Designers are a "point". However, if we combine the research of them with that of "line and face" and carry out the research by "compositing, weaving and dislocating" in different historical context, we can weave a research environment of "dynamic formation".

Free and open form of teaching: The bilingual teaching process of the history of industrial design is also an aesthetic process of appreciating the evolution of different design ideas. The aesthetic character and subjectivity exist in the process of teaching and learning process and students may always feel novel and aesthetic enjoyment. So the teaching should be more open and free in form. For example, students will be shown around in the design center or museum and be given instructions as to the design work.

To make the class fun and more meaningful, various multimedia teaching tools should be made full use of. Teachers should grasp student's psychology in study and enliven the class atmosphere to the best, thus making the whole class an aesthetic salon. Besides, teachers can use multimedia teaching facilities to do the images analysis, making the learning process more intuitive. This kind of analysis of the works is much better than a pure oral interpretation for effects. Works on display are usually divided into two types: detailed description and general introduction.

Generally the light in the multimedia class is faint. As a result, showing pictures too long may cause students' visual fatigue and sleepiness and a good teaching effect cannot be reached. So teachers should filter images and introduce the important contents in advance. Generally speaking, students' attention can relatively concentrated at the beginning and understand faster and show better memory. At this time, teachers can let students copy some important modeling forms and draw the sketch. It not only strengthens their understanding and memorizing, but also trains their practical ability. As for the ordinary pictures for appreciation, teachers can play background music according to the different styles, ages and regions of the pictures and let students write down their feelings and summarize the thoughts of design and aesthetic ideas and introduce the advanced foreign design concepts at the same time.

Interactive teaching atmosphere: Previous research indicates that an interactive approach can assist the development of concepts in science (Stamovlasis *et al.*, 2006); an interactive approach can enhance student science attitudes (Brunkhorst, 1992) and discussion can facilitate the development of deep learning (Brown, 1994).

Flexibility and accessibility of the interactive learning environment offers learners a risk-free setting, enabling them to make mistakes and experiment with new ideas without risk and allowing for reflection and review. Interactive teaching makes learning more interesting and engaging, resulting in an increased retention. An interactive learning approach is both a resource of simple contents and an improvement of the pattern of teaching and learning.

It is not only an inherent requirement of interactive teaching, but also the needs of the development for students' ability to protrude subject status of the students in class. The interactive teaching can only be effectively carried out when students can really become the host of the class. Interactive teaching is a kind of democratic, free, equal and open teaching method. Whether "double-way interaction" can be formed fundamentally depends on the initiative system of teachers and students, the inter knowledge-seeking system of the students and collocation system of teachers and students. But it fundamentally depends on the initiative, enthusiasm and creativity of the teachers and students and the transformation of the teachers' teaching idea. Secondly, multilateral interaction must be highlighted. The teaching process is holographic. The teacher should interact actively with all the students rather than limit himself/herself in the minority outstanding students.

To the students who do not take initiative to make a statement, teachers can adopt the approach of "throwing a ball" and inspire them to think over the question, or ask them to answer by name. Only an overall universality of interactive teaching can promote the interactive teaching to a deeper and broader direction, so that all students can get the chance to develop and exercise. German educator Diesterweg states: a bad teacher gives away truth free while a good teacher is to teach people how to discover the truth. In teaching, teachers should leave the students with "blank areas", allowing them to question and answer. Thinking starts from question and surprise. To promote interactive teaching, we must change the traditional conception and establish students' awareness of questions and encourage them to explore. Meanwhile, teachers should respect students' questions, encourage students to ask questions bravely and to solve problems from different angles and different sides, using different methods, thus incurring their multiple perspectives of psychological excitement.

Interactive teaching requires teachers to have a strong ability to manage the classroom and be enabling to make students focus on teaching contents and have interaction, to avoid the phenomenon of desalting theme. It also requires teachers to be able to anticipate the

problems that may be encountered in the process of interactive teaching, in order not to make themselves in a passive position in teaching or achieve an unexpected teaching effect. To truly carry out the interactive teaching, we can start with the following several aspects:

Design of english situational dialogues: If bilingual teaching simply means teaching in English or an one-man show sung by teachers, it won't play much role in English learning. Design English situational dialogues by combining professional design terms enable students to learn new knowledge, master new vocabulary and master the skills of international academic exchanges in a relaxed and pleasant atmosphere unconsciously.

Improvement of the enjoyment of course: As is known to all, interest is the best teacher. By improving the enjoyment of the course, the students can study in a joyous and eager state of mind and will be able to fully mobilize their brain, facial features and limbs to try, explore and discover.

There are diverse ways to improve the enjoyment of curriculum. For example, using an intuitive kind of teaching so that students can contact with specific objects, get vivid impressions and can get curiosity and their memory can be reinforced. Games teaching, such as "I guess you draw ", helps students understand and remember a lot of knowledge and enhance the sense of cooperation between classmates. Vivid historical images allow students to sense history by themselves and to understand history clearer.

Building of course brand effect: Brand course refers to the curriculum that has a clear positioning with a distinct personality of teaching characteristics and an elite troop of teachers troop with a great ability to cultivate high-quality talents. In order to create a group of professional majors and to construct a group of brand courses, many colleges and universities are taking the implementation of brand strategy.

To make the history of industrial design course a brand, we need to considerate from several aspects. First of all, find out the characteristic of course and have a clear positioning and realize innovation teaching and individualized teaching by good teachers, good students, good curriculum design, good teaching facilities and so on. Second, curriculum design attaches great importance to the practice. Industrial design history study is to make students feel design better, innovate design and form their own design style, so both classroom teaching and after-school exercises should pay attention to the cultivation of practice ability and exercise. Meanwhile, the

mode of bilingual teaching should be strengthened through the bilingual teaching, in order to improve students' enthusiasm and curiosity, in line with international standards of knowledge information and help students to carry out academic communication effectively.

Systemic bilingual teaching materials: Bilingual education of "Industrial Design History" must be established on the basis of having a system of education information on bilingual education. Information systems include bilingual teaching materials and courseware. There have been many textbooks on "Industrial Design History" on the market, but the bilingual teaching material is very few, thus we compiled the book "the history of industrial design (bilingual teaching material)". The book is divided into five parts: First the road of ancient design (ancestor of human civilization, the industrial revolution). Second the enlightenment of modern design (the industrial revolution - in the early 20th century). Third modern design development period (1945-the early 20th century). Fourth the mature period of modern design (1945-the 21st century). Fifth -- the diversified design of the information age (the 21st century - in the future). The first chapter introduces the origin of Chinese and foreign design. The second includes the background of the modern design, arts and crafts movement and the buds of the modern design two parts. The third includes four parts, namely the overview of new art movement, the development of modernism design stage, the development of modernism design teaching, the development of American modern design (before 1945). The fourth chapter introduces the mature of modern design. Part five includes postmodernism diversified design, Chinese modern and contemporary design and education reform and the forefront thinking of contemporary design-emotional design, users' research, interaction design, system design and so on all together three parts. What's more, the textbook also includes four appendixes: case analysis, interesting stories in the history of industrial design, academic communication of industrial design history, design style and design style list in both Chinese and English, the overall is illustrated, lively and interesting.

This textbook has carried out the detailed composition of some key contents, such as arts and crafts movement, the Bauhaus education system, modernism and post-modernism, the diversified design of the information age. In particular, it adds the Chinese design education system. The education reform of China's modern design together with its' complete system added in the key content is a extremely significance part. The

textbook breaks the traditional teaching materials of history of a single "linear" analysis method and takes the dynamic form of "point, line and plane" research method to expound the source of the whole development history of industrial design, the basic context, overview, the main genres of each time, representative figures and their works, contemporary design concept, modern and contemporary Chinese industrial design status and education concept, the development trend of future industrial design, etc. Among them, the textbook on the history of industrial design made a detailed case analysis in the individual pieces, such as communication tools, the development history of mobile phones, multimedia equipment computer history, the development history of transport vehicles, the condition of China's modern and contemporary industrial design and education concept, etc.

In addition, the book has a double effect of strengthening professional academic English and CET-4 and CET-6. As a bilingual and research-oriented learning material, after each chapter the book is accompanied by the summary of this chapter content and context diagram, identification and key words, chapters content summary, identification. Key words are showed in "both Chinese and English". The important contents, such as design genre and style of design, the concept and thought of famous designer, the historical significance and value of famous design works, are all shown bilingually, making every effort to restore the original foreign relevant study in the history of industrial design theory. English content in combination with the requirements of CET-4 and CET-6 makes the rich history of industrial design knowledge the important background material of students' study. Therefore, it lays a solid foundation for the students to go abroad for further study in the future and can attract foreign students to China to study the history of industrial design. The teaching material combines "science" and "art" together perfectly and embodies the achievement of "interdisciplinary studies" to some extent.

REFERENCES

- Brown, A.L., 1994. The advancement of learning. *Educ. Res.*, 23: 4-12.
- Brunkhorst, B.J., 1992. A study of student outcomes and teacher characteristics in exemplary middle and junior-high science programs. *J. Res. Sci. Teach.*, 29: 571-583.
- Chen, P.J., 2008. Research and practice of bilingual teaching for electrical and electronic technology. *Adv. Technol. Teach.*, 163: 685-691.

- Gao, Q.X. and H.W. Li, 2005. Implementation of brand strategy to explore research university undergraduate teaching mode. Chinese University Teaching. <http://www.cnki.com.cn/Article/CJFDTotat-JXCY200509008.htm>.
- Ibrahim, M. and O. Al-Shara, 2007. Impact of interactive learning on knowledge retention. Human Int. Manage. Inform., 4558: 347-355.
- Lu, T.N., B. Cowie and A. Jones, 2010. Senior high school student biology learning in interactive teaching. Sci. Educ., 40: 267-289.
- Qi, M., J. Zhou, H. Cui, Y. Fan and G. He, 2012. Discussion on the bilingual teaching methods of Chinese university. Adv. Comput. Sci. Eng., 141: 723-729.
- Stamovlasis, D., A. Dimos and G. Tsaparlis, 2006. A study of group interaction processes in learning lower secondary physics. J. Res. Sci. Teach., 43: 556-576.
- Teng, X., 2007. The importance of bilingual teaching. J. Peking Univ. (Philosophy Soc. Sci.)
- Wang, J. and Y. Hua, 2011. Bilingual teaching value. <http://www.cnki.com.cn/Article/CJFDTotat-AHWA201106128.htm>.
- Xue, H.Y., 2005. Point, line dynamic constitute-the scientific study of the history of industrial design. <http://www.cnki.com.cn/Article/CJFDTotat-YSBJ200505051.htm>.