Reform and Innovation of Art Design Education in the Information Age

1st Liu Yang
Art Design College
Beijing Forestry University
Beijing, China
lyr623@foxmail.com

2nd Cheng Xufeng
Art Design College
Beijing Forestry University
Beijing, China
cxf005@bjfu.edu.cn

***Abstract*—In the information age, human social activities have undergone major changes. Art design education plays an important role in social innovation and talent cultivation. In particular, the integration of technology and art by STEAM education concept has a great impact on the cultivation of innovation ability. However, China's art design education also faces problems such as teaching mode, information acquisition, achievement sharing and transformation. By studying and analyzing the current situation of art design education in China, this paper sorts out the existing problems, proposes innovative reform methods and paths, and conducts practical exploration, aiming at verifying ideas and effects, and providing reference for improving the level of art design education and the cultivation of innovative talents in colleges and universities.**

Keywords—Art design education, Information age, Reform, Innovate

In 2011, Art was officially established as the thirteenth independent discipline in China. The importance of art talents in national development and construction was established from the national strategic level. Art supports people's purposeful creative activities. In the new era of innovation becoming the core competitiveness of the nation and the country, fully understanding and applying art is conducive to develop cultural industries with Chinese characteristics and realize the 2025 plan for Chinese manufacturing.

Information technology has developed rapidly in the 21st century. Since the industrial revolution, human society has ushered in the information revolution. Technologies such as the Internet and artificial intelligence have greatly boosted productivity. Human will usher in the third wave of revolution.[1] Art design education is also facing the impact of the wave of information technology. The traditional teaching model is no longer applicable to the information age. However, how to reform the traditional teaching methods and form a new method of "Internet plus Art design education" is the key to cultivate the art designing talent under the information age.

I. The status of Chinese art design education

China's design education has experienced three different stages from beginning to the present, namely “graphic pattern”, “art and craft” and “art design”. [2]In the 1980s, China introduced Bauhaus and other Western design education models from abroad, began to promote the "three major components" education concept, [3]and built a related curriculum system about it. For example, sketching, color, and model making were set as the basic courses to cultivate students' ability to shape and aesthetics. After initial familiarity with the modeling language, teachers arranged design tasks according to the course content or theme, and students designed and created accordingly.

In recent years, as the main driving force for the development of manufacturing industry, art design has received more and more attention. The market also needs many art design talents. Therefore, many colleges and universities have opened art design majors. According to statistics, more than 1,000 colleges and universities across the country have opened this major, including art colleges and many comprehensive colleges. [4]However, in order to quickly solve the problem of insufficient talents, the colleges and universities ignores the essence of design education, only to build cars behind closed doors. They do not want to spend time to improve the quality of faculty, update the teaching content, and combine new technologies with art in a timely manner. They just follow the methods introduced in the last century, which leads to students learn knowledge superficially, stop in textbooks, lack solid theoretical knowledge and practical experience, think rigid, lack sufficient innovation ability, and cannot match individual ability to market demand. Under such circumstances, there is still a shortage of design talents. Colleges and universities ignore the problem at all, and blindly expand the number of enrollment. These form a vicious circle that design students are increasing in number but there is shortage of designers who really fit the market.

The information age has arrived. It is necessary to see the nature of the problem and start from solving existing design education problems and improving the quality of education, so as to cultivate talents that meet the requirements of the times.

II. The Existing Problems of Art Design Education in China

A. *Teaching Materials and Teaching Equipment are Old*

The art design education in Chinese colleges and universities began to develop in the 1980s. In just over 40 years, it has developed from no foundation to has many design students, which experienced a process from scratch. However, in this process, we only consider expanding the number of students, but neglect the quality of education. [5]Today, teachers still use the textbooks which have been used at the beginning of the 21st century when Chinese design education started. And many of textbooks are written by teachers who lack design practices and simply draw on Western experience. In the initial stage of design education, imitation and reference is a necessary way. However, in the 21st century, information technology has made all the high-speed development, the past textbooks are no longer suitable for today's design education. The design methods, media, materials, and production methods in the textbooks have all changed, and the aesthetics of many design cases are no longer in line with contemporary trends. Textbooks that fail to be updated timely make students to spend time and energy studying obsoleted knowledge, which lead the situation that talents cannot meet market demands.

In the design teaching, the necessary processing equipment can exercise the students' hands-on ability and make them fully understand the production process. However, at present, the equipment in many colleges is too old, such as industrial design equipment, only some machine can cut easily (as shown in Fig. 1). This neither meets the needs of students to make models, nor to allow students to access and understand advanced technologies and principles such as 3D printing.

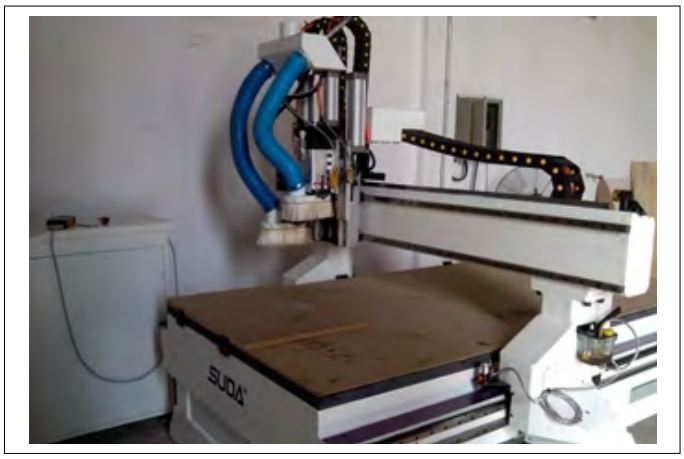

Fig.1. Backward equipment: carving machine

B. *Teachers Teach with Single Method, Lacking the Ability to Cultivate Students' Innovative Thinking.*

The traditional lecture mode is to explain knowledge in the classroom and arrange the related assignments under the class (as shown in Fig. 2). Whether in primary and secondary schools or universities, whether for liberal arts or science, this inherent method is used to impart knowledge to students. However, for college students, this kind of cramming teaching mode cannot really mobilize students' interest in learning and exercise their thinking ability. [6]It is also not suitable for major like art and design which requires creativity, and not conducive to students' innovative design.

Fig.2. Traditional teaching methods

C. *There are Design Achievement Barriers between Universities, and the Resource Allocation between Universities in Developed and Underdeveloped Regions is not balanced.*

Many Chinese colleges and universities have opened art design majors, including a few colleges with very successful professional construction. However, the schools with rich results of design and related research are concentrated in first-tier

cities such as Beijing Shanghai Shenzhen, and the level of art design education in other cities is obviously backward. At the same time, the developed regions, due to their geographical location, are significantly stronger than the underdeveloped areas, in terms of information circulation, resource allocation, and related industries. Art design, which is closely related to production technology and economic level, is also unevenly developed. Students in developed areas can get better education and practical opportunities, while students in backward areas can't learn cutting-edge knowledge and are getting out of touch with society.

D. Design Theory Education is Out of Line with Production Practice, and Creative Design Cannot be Put into Production

Art design combines art and industry perfectly. Her strength lies in using art to create industrial or commercial products that serve people's better lives. The foothold of art design is production, which is based on theory to guide production practice. In contrast, because of lack of awareness and conditions, China's current art design education mainly teach merely design theory knowledge. Teachers have neglected the practice of design, [7]so that students only understand some aesthetic rules and design rules from books, and completely do not understand the practical problems such as cost, production difficulty, economy and environment. Moreover, the design work of students is only a concept with low feasibility.

III. Reform Thoughts for Art Design Education in the Information Age

A. Build a Design Information Database to Obtain Cutting-Edge Design Knowledge

Access to knowledge and information through the Internet has become the mainstream of the 21st century. China should also follow the trend of the times and create an authoritative and real-time website from the strategic level of improving the quality of art design education. So that Chinese students have their own design websites, which are convenient for inquiring information, enriching knowledge, inspiring creative inspiration, and getting skills for market demand, such as Visual China, Behance, etc., as shown in Fig. 3.

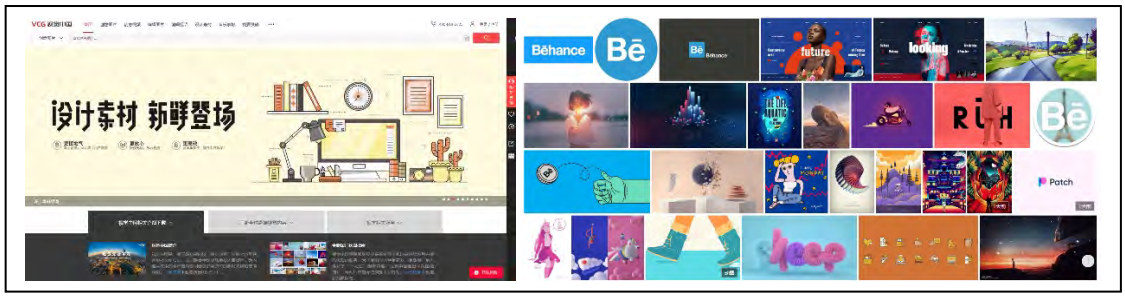

Fig.3. Design resources website

B. Innovate Teaching Methods, Teach Online and Offline Simultaneously

Since the information age, many famous schools in China and abroad have MOOCs on the Internet, so that anyone with a desire to learn can listen to lectures by famous teacher anytime and anywhere. Art design education also pays attention to integration and communication. We should re-set the curriculum system, implement online and offline simultaneous teaching, and record high-quality courses for students to learn after class conveniently rather than be limited in traditional classroom teaching mode. At same time, we should open online communication classes, teachers and students across the country can exchange, share or learn design knowledge online. As shown in Fig. 4.

Fig.4. Network teaching resources and equipment

C. Establish a Public Networks Platform of Information to Enable Universities to Share Design Results

If we want to improve the overall level of art design education in China, we must break down barriers. A reasonable way is to establish a public network platform. Universities, relatively outstanding in fields of design education, can publish their

research results on the platform in time, which is convenient for other schools to learn from. There may even be a support program, such as designating a university with excellent designs help several schools whose educational levels are low, communicate advanced teaching methods and concepts to them through training teacher and exchange student.

D. S Use the Network to Build an innovation Platform of Production, Education and Scientific Research to Achieve Cross-Regional and Inter-Provincial Cooperation

Enterprises and factories are the medium for transforming design into products. To improve their practical ability, students must design for the market. Therefore, colleges and universities should establish an innovation platform of production, study and research with enterprises, and promote the direct conversion of design works into products which can serve the public. In this process, factors such as processing level, technical means, and cost control will make students' designs based on reality rather than only imagination. Their design also can meet market needs and implement production. At the same time, the design of students has the advantages of boldness, avant-garde and innovation, which is conducive to the innovation and development of enterprises, the improvement of market competitiveness, and the transformation of China from a big manufacturer to a strong manufacturer.

IV. Practice Exploration of Teaching Reform--intelligent Hardware Course

Based on the above reform ideas, the author cooperated with the enterprise to integrate the intelligent hardware technology into the product design curriculum and completed the preliminary practical exploration of using STEAM education in the art design teaching. The active cooperation between students and enterprises enabled the course to be completed successfully. The results of the course are shown in Fig. 5, including: anti-theft system for museum exhibition device, intelligent switcher far and near light, IC recharger machine and so on.

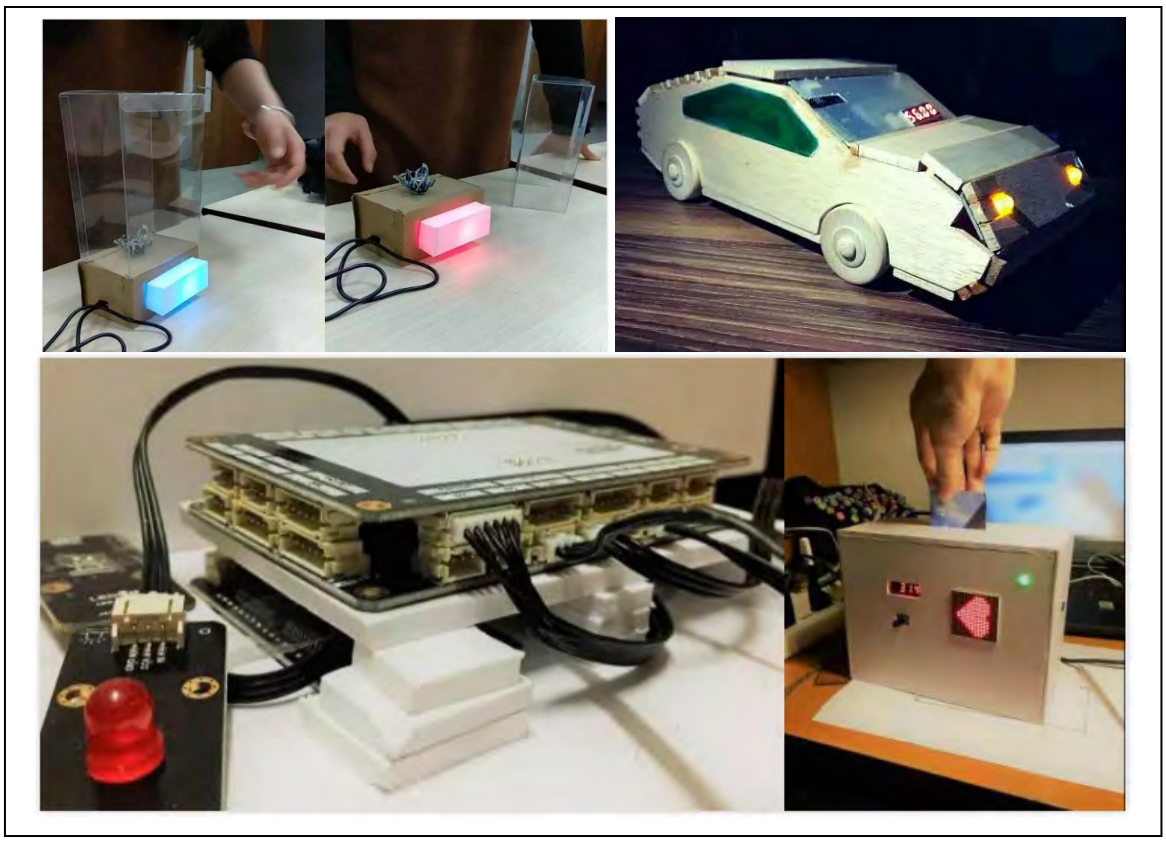

Fig.5. Course results show

This course required completing coursework with group cooperation, including work of connecting hardware, programming, and building product functional model. Students can complete the actual operation through simple training. This enhanced their interest in learning intelligent hardware. They not only fully utilized a variety of professional skills to complete the production, but also transformed the design concept into physical objects through the full participation. And they felt the difficulty and mutual promotion of teamwork. The original product design curriculum aimed to train students' comprehensive design capabilities. The reform of integrating intelligent hardware knowledge not only realized the purpose of joint training students by schools and enterprises, but also expanded the knowledge fields of students and exercised their abilities. The actual results of the course verified the initial success of the reform practice and could support the further deepening and improvement of the teaching reform.

V. SUMMARY

The information age has arrived and changed people's lifestyles in every way. One of the tasks of art design education is to cultivate design talents and enhance national innovation strength. Art design education must accelerate the transformation model and combine education and technology to form a method that is more suitable for China's national conditions and conducive to output educational achievements. The establishment of national design consulting information database, online courses, network conferences, university alliance platform, industry-university-research combination are all factors that promote the efficient, equal and convenient development of art design education. Only by following the trend of information networks, having courage to explore and innovate, can we make design talents meet the needs of social development and serve the country and the people.

VI. ACKNOWLEDGEMENTS

The authors are grateful for the support of the Fundamental Research Funds for the Central Universities(No. 2017ZY72).

REFERENCES

[1] Lei Wang, “Research on social development in the information age,” Party School of the Central Committee of the Communist Party of China, 2011.

[2] Haixiao Hu,Haoyu Fu, “Study on the Teaching Reform of Modern Art Design under the Background of Information Age,” Science and Technology,2014(12):194.

[3] Jie Hao, Beike Shi, “Discussion on Chinese contemporary art design education,” Today’s Massmedia,2016,24(02):151-152.

[4] Jian Zhang, “Study on the Current Situation and Development Model of Art Design Education in Chinese Universities,” Art Science and Technology,2016,29(08):394.

[5] Hongfa Yang, “Reflection and Construction of Higher Art Design Education System in Social Transformation Period,” Art Education,2006(03):98-99.

[6] Liu Yang,“The current situation and reform of environmental art design teaching under the background of information age,” Popular literature,2015(12):251-252.

[7] Ping Zhang, “Analysis of the Status of Art Major Education in Colleges and Universities,”Policy Research & Exploration,2017(07):70-71.