Research on the Talents Training Mechanism of Industry-University-Research Collaborative Innovation in Visual Communication Design

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Abstract: As the discipline of higher education in China has been upgraded, design has become a first-class discipline. The major of visual communication design in Colleges and universities is an important source of high-quality and high-skilled talents in cultural and creative industries. With our country attaching great importance to cultural and creative industries, visual communication design has become an important part of cultural and creative industries. Based on the author's practical teaching experience, this paper analyses the cultivation of visual communication professionals around the collaborative innovation education mode of "industry, education and research", and deeply studies the present situation and Countermeasures of the development of visual communication design professionals, which has certain reference value and significance for the innovative cultivation of visual communication design professionals in China.

1. Introduction

According to incomplete statistics, more than 1000 colleges and universities have set up art design majors, which are distributed in comprehensive universities, normal universities, science and engineering colleges, fine arts colleges, vocational colleges and private colleges. Most of them have established visual communication design departments (or teaching and research departments) [1]. However, in the rapid development of the situation, there are many problems. The enrollment expansion and the current undergraduate examination system have led to a decline in the quality of students. Many candidates begin to study painting in art colleges because of their cultural incompetence. It has not formed a complete training program and curriculum system of visual communication design talents adapted to the development of the times. Emphasis should be placed on closed curriculum or subject-based teaching rather than on open social practice. The teaching resources of visual communication design graduate students are scarce [2]. Most colleges and universities only solve the essential computer problems. The professional laboratories and off-campus practice bases have not been well solved. The structure of teachers is single. Most teachers are of graphic design background, single educational background and single knowledge structure. There are obvious constraints in the current training mode of innovative talents. Since the 1980s and 1990s, domestic universities have successively carried out practice and Exploration on Undergraduates'innovative training mode, such as building a curriculum structure system based on "platform + module", but the training platform is relatively limited, and the phenomenon of disconnection between school education and scientific research and enterprises is serious [3]. Universities generally lack large-scale cross-disciplinary project teams, even if there is no full use of cross-disciplinary training platform has not yet formed.

2. Knowledge Related to Collaborative Innovation of Industry, University and Research Institutes

Collaborative innovation comes from synergetics theory in international innovation research field since 1970s and innovation network theory, innovation system theory, innovation cluster and innovation environment theory since 1990s. Collaborative innovation refers to the effective integration of various elements of innovation in the innovation system so as to make it flow in the

system without obstacles [4]. It not only emphasizes innovation, but also emphasizes the ability of consensus, role positioning and collaborative communication in innovation activities, aiming at realizing collective innovation through teamwork and mutual inspiration [5]. Collaborative innovation in universities refers to the cooperation between disciplines within universities, between universities and colleges, between teachers and students of universities and research institutes and enterprises, with the support of the government, intermediaries of scientific and technological services, financial institutions, etc., to tackle key problems, thus gaining great importance in scientific research and technological development. Great progress and breakthroughs in the collaborative innovation activities of industry, University and research [6].

At present, the lack of cross-border awareness and collaborative innovation in the training of undergraduate talents in visual communication design in our country leads to the lack of innovative spirit, weak practical ability, poor collaborative communication ability and single employment field of undergraduates[7]. The development of digital era requires that the training of visual communication design talents must break the barriers between disciplines, promote interdisciplinary collaborative innovation, and explore a new system of open, integrated and efficient joint training of innovative talents. The visual communication design talents training of "Industry-University-Research" collaborative innovation is mainly based on the combination of "Industry-University-Research" to build a high-level, multi-disciplinary and young scientific research and development and practice platform integration of innovative talent training mode [8]. "Production" refers to industry, "learning" refers to schools, and "research" refers to research institutions. "Industry-University-Research" cooperative education is the embodiment of the combination of industry-University-Research in personnel training. It is a new cooperative school-running mode that conforms to the rapid development of national cultural and creative industries and trains applied technical design talents [9].

3. Training Mechanism of Visual Communication Design Professionals

3.1. Establishing correct talents training objectives and ideas

In order to adapt the training of visual communication design talents to the development of national cultural and creative industries, it is necessary to continuously extend and expand the teaching content of visual communication specialty to ensure that design and practice closely match and complement each other. Through the use of Internet, computer and multimedia and other educational technology means to promote classroom teaching, focusing on the design discipline related professional dynamics and the development of the times [10]. Real-time dissemination to students of the current frontier trend of the development of design disciplines, to promote students to the development of cultural and creative industries, keep pace with the times. At the same time, we should renew and reform the concept of talent cultivation according to the current talent cultivation objectives. In order to do a good job and improve the multi-level work of training visual communication design professionals, professional teachers should improve practical teaching experience, add courses related to innovative education for entrepreneurship, improve students'theoretical knowledge and skills, and strive to teach. There are new breakthroughs and innovations to ensure the employment rate of students.

3.2. Constructing the training system of innovative talents by combining production, education and research with visual communication

Constructing the training system of creative visual art design talents oriented by "production, teaching and research", focusing on training students'practical ability, in order to achieve the goal of improving students' comprehensive quality. On the one hand, we should strengthen the overall quality construction of the teaching staff, vigorously integrate the teaching staff, rely on the advantages of Applied Technology universities, and strengthen the exchanges and cooperation between international and domestic universities and departments. On the other hand, well-known designers of logo design, advertising design, VI design, packaging design and other entities should

be introduced into the teaching staff. At the same time, well-known experts from domestic and foreign industries should be introduced as guest professors. Through professional courses, studios or lectures, teachers'horizons should be broadened, and students' innovative ability and practical activities should be trained. Hand ability. Comparing the differences of design education between China and foreign countries, we should strengthen the training of Applied Design talents. Many art colleges in China have distinct professional boundaries and lack of communication in teaching, resulting in students passively confined to a single field, thus inhibiting multi-level diversified learning and cognitive opportunities. Since the country advocated the development of cultural and creative industries, the integration of cultural and creative industries and design disciplines is facing a new challenge.
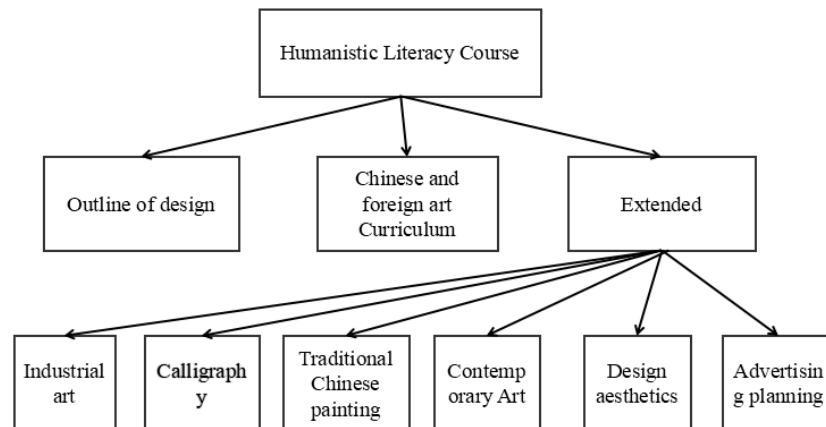

Fig.1. The optimization analysis of humanistic literacy course

In the basic courses, flip-flop and heuristic teaching methods are mostly used. In the whole teaching process, more attention is paid to the development and cultivation of students'creativity, innovation ability and comprehensive quality. Integrating Chinese traditional culture theory and aesthetic education into public basic courses and development courses, and offering compulsory courses of professional history theory, etc. see Figure 1. The integration and optimization of humanistic literacy curriculum has been endowed with a new era outlook of the training form of "Three Creations" visual communication design professionals.

The characteristics of the core application-oriented curriculum are to cultivate professional skills, with the application of the core competence of visual communication design as an important indicator. These courses emphasize the teaching practice of various media applications and performances of visual communication design, and emphasize the core of visual communication design such as brand design and development, interactive interface design, etc. The ability of heart application can improve students'comprehensive competitiveness. Integrate and optimize the curriculum group of interactive interface and brand image design around core competencies and job requirements (see figure 2).
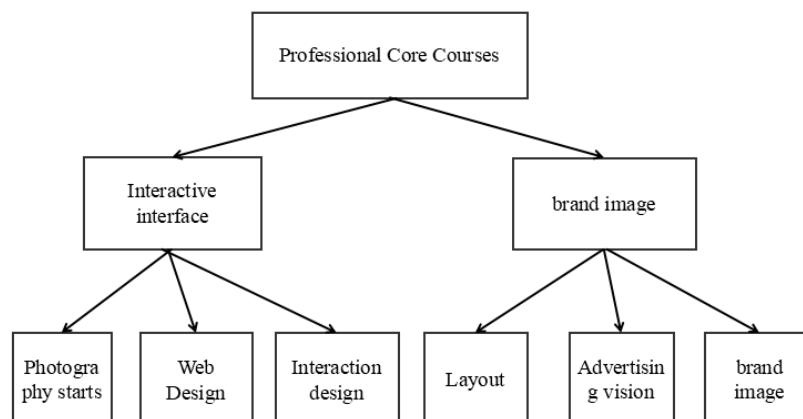

Fig.2. Analysis of the competence of the core course group of visual communication design major

3.3. Building a multi-level practical research platform of "industry, university and research" collaborative innovation

The collaborative innovation practice research platform of "Industry, University and Research" relies on in-school experiment and practice bases to provide practical opportunities for teachers and students to integrate multi-disciplinary knowledge, design innovation and project management. On the other hand, we should adopt the idea of "going out and inviting in", and carry out close cooperation and academic exchanges with governments at all levels, universities, enterprises and foreign universities. Absorbing the strength of all walks of life, realizing the close connection between schools and enterprises in respects of resources and talents, and providing high-quality practical conditions for training innovative talents in visual communication design. In practical teaching, we should further promote the teaching methods of project teaching, subject teaching, vacation class, participating in design competitions and so on, and build a multi-level design innovation competition system at the national, provincial, ministerial and school levels. Teachers actively guide students to declare the Challenge Cup and innovative entrepreneurship training programs for college students, and guide students to participate in authoritative competition projects of visual communication design specialty, such as "China Packaging Creative Design Competition", "Global Chinese University Students'Advertising Creative Golden Festival Competition", "Jin Daoqiang Design Award", "National University Students' Advertising Art Competition". Competitions such as "China Star" and "Central South Star" etc. Through participating in multi-level design competitions, we can cultivate students'comprehensive qualities such as innovation ability, cognitive ability, thinking ability, design ability, practical ability, application ability and display ability.

For example, the national cultural and creative industry park built by Changchun Architectural College and the Jilin Cultural and Creative Industry Research Center of Changchun Architectural College, a key research base of Humanities and Social Sciences in Jilin Province, which is established by Jilin Provincial Education Department. The Northeast Asia Cultural and Creative Industry Park is located in the high-tech campus where the Institute of Cultural and Creative Industries is located. It is a collaborative innovation platform established by Changchun Institute of Architecture. It has been appraised as a national cultural industry demonstration park, the first batch of "cultural industry demonstration park" in Jilin Province and "high-end service industry agglomeration area in Jilin Province". Based on the Jilin Provincial Department of Education, Jilin Province Humanities and Social Sciences Key Research Base - Changchun Institute of Architecture Jilin Cultural and Creative Industry Research Center. The center is devoted to studying the development model of cultural industry park, exploring the new education model of "integration of industry and education, school-enterprise cooperation", and playing an important base and research platform of demonstration and radiation role in the transformation of scientific research in Colleges and universities. The platform integrates core technology research and development application, product display, design personnel training and technology exchange in emerging industries. It is a powerful innovation and entrepreneurship service platform for cultural and creative industries.

The Institute of Creative Industries of Guangdong University of Technology (Institute of Creative Industries of Yuexiu District), co-constructed by Guangdong University of Technology and the People's Government of Yuexiu District, is located in the campus of the College of Art and Design. Guangdong University of Technology and Dongguan Municipal People's Government invested in the establishment of Guangdong South China Industrial Design Institute in Songshan Lake, Dongguan, in November 2006. At present, more than 500 enterprises have successfully carried out product design, packaging design and new product development, and obtained "National High-tech Enterprise" and "Top Ten Design Machines of Guangdong Province". Establishment of "Provincial International Science and Technology Cooperation Base" and other honorary titles. On this basis, Guangdong University of Technology and Dongguan Municipal People's Government jointly established Guangdong South China Design Innovation Institute, which is an industry-university-research platform for upgrading and transforming traditional industries and training strategic emerging industries in Guangdong, relying on industrial technology and design

innovation resources of Guangdong University of Technology, integrating domestic and international high-quality resources. The platform integrates the core technology research and application of emerging industries, the display of design products, the training of design talents and the exchange of technology. It is a powerful service platform for innovation and Entrepreneurship of design creative industries. The undergraduate and postgraduate students of visual communication design major in Art Design College of Guangdong University of Technology can enter the above three platforms for graduation design, internship or work. Students of visual communication major not only divide and cooperate with students of other specialties around specific projects, but also cultivate cross-border talents in the joint research and development platform.

4. Conclusion

The training of visual communication design talents in the collaborative innovation of industry, University and research should give full play to the innovative education mode of industry, University and research, which points out the direction for the innovative training of visual communication professionals in Colleges and universities. Teachers lead students to participate actively in the design of innovative practical research platform, effectively enhance students'cognitive training ability, help to train applied technical visual communication design talents, improve the level of design education in China, and promote the coordinated development of cultural and creative industries and design art education in China.

Acknowledgement

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