

Research on the Cultivation Mode of Talents in Clothing and Costume Design in the Context of New Liberal Arts

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Abstract: *The construction of the new liberal arts is a matter of national comprehensive national strength, cultural confidence and the need for the integration and development of talents in many aspects. The design discipline has been classified as an interdisciplinary discipline, reflecting a shift in the development of the discipline. As a design discipline under the major of fashion and apparel design, there are still problems such as insufficient value leading, single ability cultivation, insufficient branding design concept and lack of crossover in the faculty team in the process of talent cultivation. The article combines teaching practice and proposes a new model of interdisciplinary and interprofessional cross-fertilization of talent training from four aspects: talent training objectives, curriculum system construction, teaching platform construction and talent training methods, in order to meet the new demand of society for diversified and composite talents.*

Keywords: *New Liberal Arts, Fashion and Costume Design, Talent Cultivation Mode, Cross-fertilization*

1. Introduction

In November 2020, the Declaration on the Construction of New Liberal Arts (hereinafter referred to as the Declaration) proposed the construction of new liberal arts in six aspects: overall goal, value leadership, professional optimization, curriculum system, model innovation, and quality culture.¹ In December 2021, the Academic Degrees Office of the State Council published the Catalogue of Disciplines and Specialties, in which the design discipline was classified into the category of interdisciplinary disciplines, which was a A major shift in the understanding of design disciplines. In the face of the opportunities and challenges brought by the construction of new liberal arts, how to reform and develop the mode of training talents in clothing and apparel design under the design discipline has become a new issue. With the Manifesto as a guide, we combine the experience accumulated in the process of professional talent training and the practical problems encountered, and propose new thinking on the reform of talent training mode.

2. The current situation and problems of training talents in fashion and apparel design

The objective of training talents in Fashion and Apparel Design is to cultivate high quality applied talents who have solid professional theoretical knowledge, strong practical ability, ability in style design, structure design, craft production, etc., and who can engage in fashion design, brand planning, design management, cultural communication, design education, etc. in the field related to fashion and apparel design. The specific talent training programmes of each university are slightly different. At present, there are problems in the process of training talents in clothing and apparel design, such as serious homogenization, insufficient comprehensive innovation ability, and asymmetry between talents training and enterprise demand, which are mainly rooted in the following aspects:

2.1. *More focused on the performance of the artistic effect of clothing design, not clear design value of the guidance role*

"The construction of a new liberal arts should strengthen value leadership and cultivate liberal arts talents of the new era who will assume the great responsibility of national rejuvenation"[1]. In the face of such real-life problems as the revival of national culture, the loss of traditional handicrafts and the serious environmental pollution caused by the clothing industry, clothing design should not only focus

on formal aesthetics and meet the people's growing demand for material and cultural life, but also correctly lead the public's value judgments on fashion consumption, environmental protection, social culture and other multiple dimensions. In the new context of globalisation, diversity and complexity, correct value leadership has become the primary issue to be addressed in the training of talents.

2.2. Focus on the development of single competencies and insufficient integrated innovation

"Only after a garment designer has mastered certain garment pattern-making and sewing techniques will he or she be in a better position to extend their design talents into the production of bulk products" [2]. "The fragmentation of design creativity and craft technology will eventually lead to the loss of originality in design works" [2]. Although the majority of colleges and universities' talent training programs for garment and apparel design majors reflect the requirements for comprehensive ability training in design theory, design aesthetics, textile fabrics, technical techniques and marketing, the reality is still that designers do not understand fabrics, structures and techniques, brands and markets, and pattern makers do not understand design aesthetics and innovative ideas. The main reason behind this is that the curriculum is too focused on the cultivation of a single ability and not enough attention is paid to the comprehensive and innovative ability in the talent training process.

2.3. Focus on individual subjective concept expression, insufficient intervention of rationalised brand design concept

Branded clothing design integrates design, economics, management, sociology and other multidisciplinary knowledge [3]. The concept of branded operation has become the core of the innovative development of apparel enterprises. In the market economy, consumers have become the main judge of design value, especially with the rise of e-commerce brands, and big consumer data has dominated the development direction of design in a certain sense. If the training of fashion design talents is confined to the expression of individual subjective ideas and lacks the intervention of rationalised brand design concepts, it will eventually lead to the derailment of the training of talents from the market demand.

2.4. Faculty teams become an important constraint to interdisciplinary interprofessional development

Most of the existing faculty in colleges and universities are formed by faculties and departments, and the lack of communication between teachers from different colleges and majors makes it impossible to propose comprehensive topics, which invariably poses a barrier for interdisciplinary and interprofessional teaching. In addition, most teachers go from college to college, lacking opportunities for corporate practice, making it difficult to form an in-depth knowledge of talent training from the perspective of the overall development of the garment industry, resulting in some courses focusing on theoretical lectures and lacking practical experience. Students are good at drawing design effects, but weak at solving practical problems.

At a time when information technology and artificial intelligence technology are developing rapidly, the problems faced by designers are more complex and diversified. The mode of training talents in clothing and costume design in colleges and universities needs to be adjusted in time to meet the opportunities and challenges brought by the technological revolution.

3. The Construction of Talent Cultivation Mode of Clothing and Fashion Design in the Background of New Liberal Arts

Through the analysis of the current situation and problems in the cultivation of talents in fashion and apparel design, combined with the task of building a liberal arts talent cultivation system of world level and Chinese characteristics proposed in the Declaration [1], a new model of interdisciplinary and interprofessional cross-fertilization is proposed.

3.1. With value leadership as the core, clarify the overall goal of talent training

The reshaping of design values in the context of the new era has become the primary issue of design education, and promoting design to focus on the sustainable development of people, society and ecology has become the natural path for talent training. "Promote the formation of a Chinese school of philosophy and social sciences, and create a Chinese culture that shines brightly in the times and in the world [1]". For the training of talents in fashion and apparel design, while borrowing excellent design education

resources from outside, we should dig deeper into our own national culture, fuse national culture with world trends, build Chinese style and create Chinese style, in order to truly participate in international competition on the same stage and establish national self-confidence. "Integrating our own national culture and art into design to form differentiated and diversified art and design will only be recognised by other nationalities in the world [4]". Of course, the paths and methods of integration are also diversified, no matter whether it is "Yangchunbaixue" or "Xiaolianba Ren", as long as it is beneficial to the promotion of national traditional culture, it is worthy of recognition.

In addition to the exploration of national cultural values, the value of functional needs is also an important part of the training of clothing and apparel design professionals, such as sustainable design, humanistic design and intelligent design, which have become global design values. The clothing and apparel design programme at Zhengzhou Light Industry University has taken advantage of its comprehensive university characteristics to offer interdisciplinary courses such as intelligent wearable design. For example, the airbag jacket designed for the safety of takeaway riders is a collaboration between teachers and students from the School of Art and Design and the School of Mechanical and Electrical Engineering. The jacket is designed to protect the rider's head, neck, chest, waist and other vital parts of the body when the rider is in danger. This design reflects the humanistic and intelligent design concept of "people first" (Figure 1).



Figure 1: Takeaway rider airbag jacket design

3.2. Establishing an interdisciplinary and interprofessional curriculum with a strong foundation and emphasis on practice as a guide

"Art-based, clothing-led and art-industrial integration. Integrating and cross-developing the art and design majors with the university's engineering, literature and business disciplines to build a professional construction system that integrates culture, art, fashion and technology, reflecting a clear new concept of interdisciplinary talent training" [5]. The development of science and technology has driven the progress of productivity. The rapid development of digital and intelligent technologies has pushed the expansion and blurring of the boundaries of different disciplines and professions. The popularity of the meta-universe concept and the sale of NFT virtual clothes are forcing the reconfiguration of the talent training system of clothing and apparel design majors.

Taking the 2021 edition of the talent training program of the clothing and apparel design major of Zhengzhou University of Light Industry as an example, through the reconstruction of the internal knowledge system and curriculum system of the design discipline, the cross-fertilization of the design discipline with the multidisciplinary professional knowledge of engineering, arts and commerce is expanded, and the innovative design thinking of students across disciplines and professions is opened up.

Building a "1+N" interdisciplinary and interprofessional knowledge system. The "1" stands for design and the "N" stands for other disciplines. For example, in the first year of the general studies course, a foundation course in art, design, sociology, computer science, management and other multidisciplinary and multi-disciplinary fields is offered (Figure 2). The construction of the "1+N" interdisciplinary and inter-professional knowledge system provides students with multiple perspectives on intellectual innovation in terms of breadth and depth of knowledge.

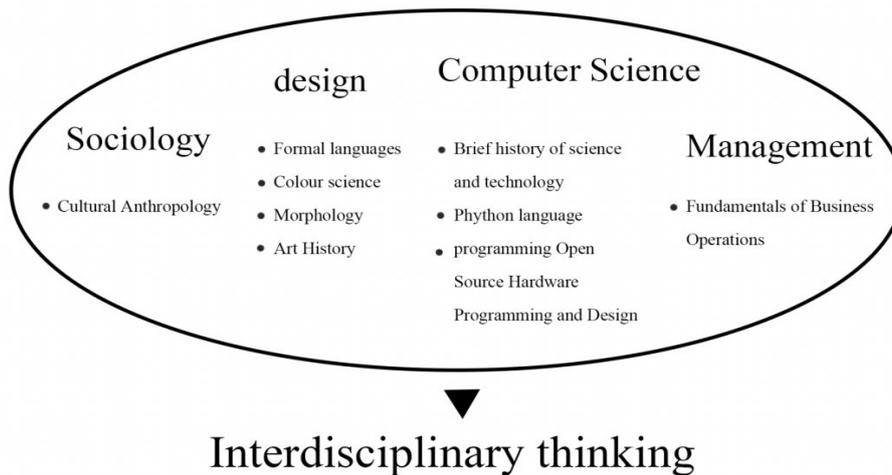


Figure 2: First year design general studies course

The "3+3+2" curriculum system is constructed, i.e. 3 semesters of foundation courses + 3 semesters of specialised courses + 2 semesters of practical courses (Table 1). Firstly, through the teaching of 3 semesters of general studies courses, the breadth of students' knowledge is expanded and a broad perspective is provided for students to carry out the integration of multidisciplinary knowledge. For example, in the Open Source Hardware Programming and Design course, a teaching team is formed with teachers who have a background in computer science, and innovative topics are proposed based on the characteristics of the design discipline, and the technological content of the design is enhanced through the explanation of basic programming knowledge combined with experiments on various types of motherboards and materials.

Secondly, the three-semester specialist course breaks away from the course system named after garment production processes or production techniques, such as garment design, garment rendering, garment pattern making and garment technology, and instead adopts a project-based and project-based curriculum to help students master and apply their professional knowledge from a "big design" perspective. The advantage of basing the curriculum on garment production processes is that each course is studied in depth and the practical skills of each component are enhanced, but this also results in compartmentalisation between courses. Even long-term teaching of similar courses has led to a tendency for teachers' knowledge systems to become homogeneous, and the teaching process fails to form links between the top and bottom of knowledge and the back and forth relationships. This is reflected in the training of talents, as mentioned above, where the corresponding professional courses have been offered, but students are still unable to apply the knowledge they have learnt to solve practical problems. The curriculum is set up in the form of a project or project-based system, with teachers teaching in project teams, with teachers explaining design theory and methods, and with teachers working on experiments, forming a complete closed loop from the design concept to the presentation of the final work and even the display of the work, to enhance students' ability to identify, analyse and solve problems from an overall design perspective. Therefore, the setting of topics becomes the key. Based on the value-led concept discussed earlier, six professional core courses have been developed based on the summary of previous talent training programmes: branded clothing design, clothing structure design, sustainable clothing design, traditional clothing innovation design, intelligent wearable design and integrated design and realisation.

Thirdly, the 2-semester practical course mainly consists of studio courses, laboratory courses, school-enterprise cooperation courses and graduation designs. The studio course and laboratory course are in the form of elective courses to expand students' interests and enhance their hands-on practical skills. The school-enterprise cooperation course, by introducing the product development process of brand enterprises, ensures the fit between talent training and enterprise needs, improves the quality of students' entrepreneurship and employment, and gradually forms a closed-loop management of talent training from objectives to process and evaluation. The graduation design is a concentrated manifestation of the results of the previous teaching, guided by interest and value criticism, reflecting interdisciplinary and interdisciplinary attributes and presenting diversified expressions.

The "3+3+2" curriculum system is the core result of the revision of the 2021 edition of the talent training programme, and is a summary and sublimation of the development experience of the School of Art and Design over the past thirty years. At present, this programme is in the process of adjustment and

will still face many challenges.

Table 1: Schematic representation of the "3+3+2" curriculum system

Type	Term	Cours	Scope	Aim
Compulsory for the whole college	Year 1 (Upper)	11 design-based general studies courses, with additional interdisciplinary courses	Fine Art, Design	Opening up interdisciplinary design thinking
	Year 1 (below)		Sociology, Computer Science, Management	
Faculty-wide elective	Year 2 (Upper)	3-4 specialist foundation elective courses	29 professional foundation electives in 6 design disciplines	Initial understanding of the characteristics of each profession
Faculty-wide elective, major elective, major compulsory	Year 2 (below)	6 major courses 4 specialised elective courses 4 practical elective courses	45 professional practice elective courses (studio + laboratory) in 6 design disciplines	Autonomous construction of knowledge systems Development of innovative interdisciplinary and interprofessional modes of thinking
	Year 3 (Upper)			
Faculty-wide elective, major elective, major compulsory	Year 3 (below)	2 integrated professional courses 2 professional practice courses	Interdisciplinary and interdisciplinary	Comprehensive competence
	Year 4 (Upper)			
Compulsory Professional Studies	Year 4 (below)	Graduation design		

Broadening the range of elective courses. The elective courses include professional theory electives, professional foundation electives, and practical electives (studio courses and laboratory courses) offered by different majors in the design discipline. 74 elective courses are available from the third semester to the sixth semester, and students can choose their own courses according to their personal knowledge needs. The elective courses account for 50% of the total credits for graduation, greatly expanding the scope of students' independent learning and enhancing their ability to structure their own knowledge systems (Tables 2 and 3).

Table 2: 29 elective courses across the College in various foundation categories

Product Design	Fashion Design	Visual Communication Design	Environmental design	Digital Media Design	Arts and Crafts
History of Industrial Design, Fundamentals of Product Design, Design Values and Experience, Introduction to Design, Design and Presentation	History of Fashion Design, Creative Fashion Design, Styling and Composition, Fundamentals of Fashion Design, 3D Fashion Cutting	Typography and typography, graphics and images, visual psychology, graphic and image composition techniques, history of graphic design, design psychology	History of Chinese and Foreign Architectural Design, Fundamentals of Spatial Design, Architectural Design and Drafting, Environmental Psychology, Design Technology Support	Digital Graphic Design, Fundamentals of Information Design, Digital Imaging, History of Digital Media Art, Fundamentals of Interactive Design	Fundamentals of Ceramics, Domestic Wares, Ceramic Sculpture, History of Chinese Arts and Crafts, History of Chinese Ceramics

Table 3: 45 practical elective courses (studio courses + laboratory courses) in various disciplines across the College

Type	Product Design	Fashion Design	Visual Communication Design	Environmental design
Studio Courses	Lifestyle research, car culture experience, design psychology research	Research on innovative design of clothing, research on traditional clothing design, product planning and design development	Cultural and creative brand design, visual symbol design, food design	Light Environment and Colour Design, Plant Landscape Creation, Rural Revitalisation and Environmental Design Special, Emotional Design of Environmental Space
Laboratory Courses	Rapid prototyping of products, oil clay models	3D modelling and product transformation, printing and dyeing process practice, apparel CAD intelligent design, apparel 3D intelligent design	Screen printing process, experimental posters	Spatial texture and architecture, art-empowered architectural space design
Digital Media Design	Arts and Crafts		Animation design	
Service Design, Digital & Future, Digital Branding	Classical oil painting techniques, basic Chinese painting		Film and television post-production, feature design, animation art design	
Digital motion, computer programming, graphic photography, basic videography	Mixed media creation, fibre art creation, pottery modelling, ceramic objects and life, blank decoration		Fundamentals of Sound Recording Technology, Animation Derivative Product Design and Development, Experimental Animation, Sound Recording and Sound Production, Interactive Light and Shadow Design	

3.3. Integrating teaching resources and building a multi-faceted and composite teaching platform

After the release of the 2020 Declaration, the Fashion and Costume Design major has taken professional optimization and quality improvement as its reform goal, and built a diversified and composite teaching platform by integrating internal and external resources, which is manifested in the following aspects.

① Construction of faculty team. Firstly, the teaching subject groups of the main courses of the major are formed with professors as the core, such as brand design research subject group, structure design research subject group and traditional dress innovation design subject group. Secondly, the special advantages of the main teachers are brought into play, and small class workshops and laboratory elective courses are offered in the form of "teacher-apprentice". Thirdly, for the more comprehensive interdisciplinary and inter-disciplinary courses, flexible teaching teams are formed using resources from teachers inside and outside the university. For example, the Smart Wearable Design programme brings together teachers and students from the School of Art and Design and the School of Mechanical and Electrical Engineering, technical staff from smart clothing research and development companies, and medical experts from Henan University of Traditional Chinese Medicine to jointly teach and develop a number of smart medical wearable devices. Some of the excellent coursework has achieved a number of results in the "Internet+" Student Innovation and Entrepreneurship Competition, provincial science and technology research and other competition projects. The formation of various teaching teams not only ensures the stability of professional basic teaching, but also constantly breaks the boundaries of disciplines and specialties and expands the field of innovation.

② Construction of innovation platform. Firstly, by organising innovation and entrepreneurship competitions for students, the university provides technical, financial and space support for the winning teams, so that students can form teams and create companies while they are still at school. Secondly, the School of Art and Design opens up the laboratories of various majors to establish an art and design innovation platform. Students are free to use the various laboratories for innovative design through projects and elective courses. For example, students majoring in clothing can take experimental courses in digital kinetic effects, interactive light and shadow, experimental animation and other multimedia

technologies, which have more practical technical support for the meta-universe concept of clothing design. The construction of various innovation platforms provides space and hardware support for students' experiments and practical training, and stimulates students' innovation potential.

③ Construction of internship base. The school internship base is constructed in the form of school-enterprise cooperation projects. The professional teachers are responsible for connecting with enterprises and leading students to participate in the development process of new products. The enterprises supervise the development process from the perspective of market operations and reward the students according to the number of designs adopted. The effective completion of the project enhances both the originality of the company's new products and the ability of the students and teachers to develop products for the market. On the other hand, practical classes such as enterprise internships and graduation designs are used to allow students to engage in practice at off-campus internship sites. A dual tutor system is used to control the students' practical content and enhance their ability to adapt to the market and design innovation.

In short, through the construction of multi-disciplinary integration, school-enterprise cooperation, Chinese and foreign joint, user participation and other multi-faceted composite teaching platform, the teacher resources, curriculum resources, industrial resources, social resources and other resources from different disciplinary backgrounds are integrated into the teaching activities to build a new model of talent training.

3.4. Explore new ways to cultivate talents with students' independent knowledge structure as the core

In the context of the construction of the new liberal arts, the traditional way of cultivating talents is broken, and students are put in the main position of teaching activities with the development of students and their individual needs in mind, so as to stimulate students' independent learning and hands-on practical skills. This is reflected in the following aspects: ① By increasing the proportion of elective courses to 50%, students are given more autonomy to choose their own courses and enhance their ability to structure their own knowledge. ② By using the platform idea of "Internet + Education", a hybrid teaching mode combining online theoretical teaching and offline practice is built. With the help of high-quality resources on the Internet, students can expand their theoretical horizons and enhance their theoretical level; offline, they can enhance their practical skills with the help of various resources such as teachers, laboratories and enterprises. ③ Adopt problem-based and project-based teaching method reform. With the problem-based and project-based approach, teachers and students from different disciplines and professional backgrounds are recruited to participate in the course, discussing and inspiring each other, advancing the progress of the subject in stages and levels, and enhancing the ability of teachers and students to solve comprehensive problems across disciplines and professions.

4. Conclusion

To sum up, the progress of science and technology has promoted the diversification of the economy, changed the way of human production and life, and expanded the boundaries of different disciplines and professions. In the face of these diverse lifestyles, the cultivation of talents with a single professional competence seems to be inadequate. The Manifesto provides a direction for the development of the discipline and profession from a higher level. While maintaining its own characteristics, the major of Fashion and Costume Design will strengthen the comprehensive ability of talents through the exploration of interdisciplinary and inter-professional talent training mode, broaden the future employment channels of students, and promote the continuous development of the industry. The construction of the new liberal arts is an inevitable choice for the development of the times, and its essence reflects the cross-fertilisation development between different disciplines and majors. While the construction of new arts brings challenges to the development of fashion and apparel design majors, it also heralds more new opportunities.

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