

# Application of the Industry-University-Research Education Model of “Works, Products, and Public Goods” in Design Majors Practical Courses in Colleges and Universities

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**Abstract:** One of the goals and requirements of China’s educational modernization includes prioritizing, guiding, and promoting the social service capabilities of universities. The teaching of practical courses in design majors in colleges and universities has long been plagued by problems such as being “out of touch with the market and social needs” and “ignoring the cultivation of creativity.” It fails to meet the goals and requirements of educational modernization. This article takes the “Fundamentals of Styling and Comprehensive Expression” course offered by the School of Design of Guangxi Normal University as an entry point to study the industry-university-research education method that combines “social service” with the teaching of design professional practical courses. It also attempts to improve “works, products, and public goods” through the establishment of the theoretical model of “product” and the analysis of practical application paths is carried out to solve the problems existing in the traditional teaching of the design major, enhance the social service capabilities of the design major, promote talent employment and industry and social development, and carry out teaching reform attempts.

**Keywords:** Social services; Design major; Industry-university-research; “Works, products, and public goods”; Teaching reform

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## 1. Introduction

Social service is one of the essential functions of universities. As early as 2010, the Ministry of Education stated: “Colleges and universities must firmly establish the awareness of proactively serving society and encourage teachers and students to carry out all-round services” [1]. In 2019, the “China Education Modernization 2035” was issued by the Central Committee of the Communist Party of China, and the State Council set “service contribution ability” as one of the target requirements for educational modernization. It is pointed out in the “China Education Modernization 2035” that “Education work should focus on cultivating socialist builders and successors with comprehensive development of morality, intelligence, physical education,

art, and labor, adhere to the people-centered development idea, comply with the people's expectations, and increase educational development achievements, benefiting all people more equitably" [2]. It can be seen that prioritizing, guiding, and promoting the social service capabilities of colleges and universities is increasingly becoming a policy orientation.

"From the perspective of the history of the development of higher education in the world, first-class universities, as the product of the diversified development of higher education, are largely rooted in the performance of their social service functions" [3]. Currently, China's higher education has entered a stage of high-quality development. Further implementing the social service functions of universities and actively promoting comprehensive social services are significant to improving the quality of higher education and building a world-class university. There is a close relationship between social services and the design major in colleges and universities. To cultivate students' creativity, aesthetic ability, and artistic expression ability, the design major must integrate with social needs and provide various art design services to society. At the same time, it is essential to continuously update and improve the design major through interaction with society, and promote the development and innovation of the discipline. Therefore, social services should be introduced into the design major of colleges and universities, and a social service-oriented industry-university-research education model should be constructed to cultivate high-quality designers with a sense of social responsibility to serve the country and the people, an innovative spirit in daring to explore, and practical skills for solving problems. Talents and top creative design talents not only comply with the essential requirements and expectations of China's educational modernization but are also an important element in achieving the goal of talent training. This article explores the construction of a social service-oriented industry-university-research education model for design majors in colleges and universities.

## **2. "Works, products, and public goods" teaching model and social services**

Social services refer to "activities that rely on diversified entities to provide services in social fields such as education, medical health, elderly care, childcare, housekeeping, culture and tourism, and sports to meet the multi-level and diverse needs of the people" [4]. The service targets include all members of society, family members of martyrs, military personnel, the elderly, disabled people, dependent children, people with low incomes, etc. Social services promote society's well-being and improve people's quality of life and happiness. Social services can help reduce social inequality, provide equal opportunity, and ensure basic rights and benefits for the public. In essence, social services are welfare activities aimed at preventing and solving social problems, dealing with social contradictions, and reducing obstacles to social development.

"Works, products, and public goods" teaching is a model of industry-university-research education in the design major that integrates social service awareness. It is also a progressive conception and description of the teaching practice activities of the design major. It focuses on the two-way activities between teachers and students. It first requires teachers to introduce social service awareness into the classroom and appropriately guide students to recognize and establish social service goals. Students carry out creative practice under the guidance of teachers, gradually complete the transition and improvement of creative achievements from "works" to "products" to "public goods," and finally achieve the goal of "serving society."

In this teaching process, students can learn and apply design theories and methods in real scenarios through contact with and solving practical social problems, cultivate their sensitivity and insight into user needs, and develop their user-centered design thinking and approach, thereby improving the quality and practicality of design works. At the same time, students can also realize the impact and value of their design capabilities on

society, cultivate their sense of social responsibility and citizenship, and enhance their awareness and desire to contribute to society.

### **3. Current teaching status of practical courses in design majors**

The teaching of design majors in colleges and universities is generally divided into four systems: general quality education, basic subject courses, professional main courses, and professional elective courses. Except for “general quality education,” the other three teaching systems all include courses that aim to cultivate students’ comprehensive application skills of subject knowledge, practical skills, and innovation ability, and ultimately use practical courses as the teaching effect. It can be seen that practical courses occupy a large proportion of professional design courses and are the top priority of teaching.

Presently, practical courses in design majors in colleges and universities are conducted in professional classrooms that integrate theory and practice, directly serving theoretical teaching. The practical content is separated from the actual production, and the form of practice involves mastering the knowledge points and skills in the textbooks repeatedly. According to the requirements, students’ practice is carried out chapter by chapter based on the textbook chapter content, and there is a lack of systematic practice with the product production process or project implementation link as the main line <sup>[5]</sup>. “There is no novel teaching content nor integration of creative course content into the teaching system, leading to students’ lack of innovation awareness and difficulty of designed products to meet market needs” <sup>[6]</sup>. It can be seen that the teaching of practical courses in design majors in colleges and universities has long been “out of touch with market and social needs” <sup>[7]</sup> and “neglects the cultivation of creativity” <sup>[8]</sup>. Other problems have also seriously affected the teaching effect. From the teacher’s course teaching level, the knowledge contents that require in-depth extension and expansion are often ignored, such as how to apply the knowledge learned in professional design, how to establish connections with the market, how to transform works into products with the market consumption value, and how to make design products better serve human society. From a practical perspective, students are accustomed to simply imitating and copying ready-made cases or teaching materials, ignoring the stimulation of creativity, design, imagination, and the in-depth exploration of cultural connotations and meanings of works, resulting in stylized and straightforward products lacking creativity and imagination.

During his inspection at Tsinghua University on April 19, 2021, General Secretary Xi Jinping emphasized, “Fine arts, art, science, and technology complement and promote each other, and bring out the best in each other. We must give full play to the important role of art in serving economic and social development, and make art achievements better serve the high-quality life needs of the people.” Whether art and artistic achievements can achieve this goal, art and art education and teaching play a vital role. Judging from the current teaching of practical courses in design majors in colleges and universities, it is evident that the goal cannot be achieved. Therefore, exploring the teaching reform of practical courses in design majors in colleges and universities is imperative.

## **4. Integration of the “works, products, and public goods” model in practical course teaching for design majors**

### **4.1. Theoretical model**

Integrating social service awareness into the practical teaching of design majors and establishing a social service-oriented teaching model are effective ways to solve the current problems in the education of design majors in colleges and universities, such as “disengagement from the market and social needs” and “neglect of

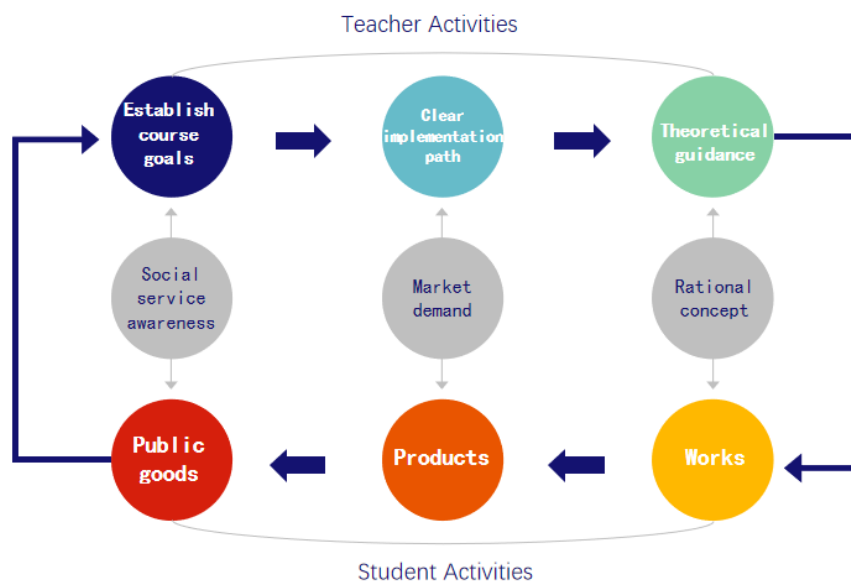
creativity cultivation.” The “works, products, and public goods” industry-university-research-education model is a teaching attempt to meet this demand, and it mainly includes the following two parts (**Figure 1**).

(1) Teacher activities

In the first step, teachers introduce “social service awareness” into course teaching, construct creative themes related to “social service” for students, and establish the teaching goal of “serving society.” The second step is guiding students to explore the path to realize the creative theme, deeply expanding knowledge content such as the changing relationship between works and products and the connection between products, markets, and social needs, and strengthening students’ awareness of serving society. The third step is teaching rational concepts, providing theoretical guidance, and cultivating students’ basic skills in serving humanity.

(2) Student activities

The first step is receiving rational concepts and knowledge, mastering basic skills, and completing work. The second step involves clarifying that only when the work has consumer value and meets consumer needs can it be transformed into a product with a market service function, establishing a connection between professional design and the market, and completing the cognitive transition from work to product. The third step is creating work around the theme of “social service,” concluding the transition and improvement of the creative results from “works” to “products” and subsequently to “public goods,” and ultimately achieving the goal of serving society.



**Figure 1.** “Works, products, and public goods” industry-academic-research education model

The “works, products, and public goods” industry-university-research education model requires teachers to gradually advance course teaching from “big goals” to “small actions.” Under the guidance of teachers, students move from “small actions” to “big goals” and gradually achieve course goals. Through this “clockwise” teaching interaction process, a smooth and proper teaching cycle system is formed.

**4.2. Practical application of the industry-university-research education model of “works, products, and public goods”**

“Fundamentals of Modeling and Comprehensive Expression” is a course that provides formal rules for



modeling design by re-integrating the three basic design courses of “Plane Composition,” “Color Composition,” and “Three-Dimensional Composition” from the perspective of contemporary design thinking, to cultivate the practical skill of modeling creation. This course is divided into two teaching modules: “two-dimensional design knowledge” and “three-dimensional design knowledge.” “Two-dimensional design knowledge” includes the knowledge points of “Plane Composition” and “Color Composition.” It mainly includes the most basic visual elements, points, lines, surfaces, textures, and colors, and analyzes composition, pictures, base, area, and bones. “Shape, color, and quality” training is carried out on color and other constituent forms for students to better understand the rules of creating graphics, and study the various possibilities of giving life and meaning to graphics <sup>[9]</sup>. “Three-dimensional design knowledge” involves the relevant knowledge content of “Three-Dimensional Composition.” It involves “studying the interconnection between volume, space, and materials, the formal rules of the organization, and thinking about the application possibility of different materials and colors in volume and spatial form” <sup>[10]</sup>.

As a basic modeling design course that focuses on cultivating practical and hands-on problem-solving skills from the perspective of the times, it not only allows students to master the basic composition rules of modeling, research logic, formal rules, and artistic aesthetics but also focuses on inspiring students. More importantly, the training of thinking and the cultivation of creativity must be combined with the background and needs of the times, closely integrating education and teaching with the demands of real society, “building a bridge from ‘design basics’ to ‘professional design,’” thereby changing the passive situation of students in the previous basic teaching design of “working for the sake of homework” and achieving the teaching goal of “applying what they have learned” <sup>[9]</sup>.

According to the teaching objectives of the course and given the problems existing in traditional teaching, the practical application of this course innovation is as follows.

(1) Selection of public welfare themes and establishment of service goals

Large-scale national public welfare projects, private-public welfare donation organizations, and public welfare activities organized on mobile apps such as Alipay provide students with a broad choice of public welfare themes. Among them, “Alipay Charity” is the most convenient way to obtain public welfare themes close to students’ lives. Among Alipay’s public welfare projects, four project modules have been established: education assistance, poverty alleviation and disaster relief, medical assistance, and humanities and nature. Teachers first lead students to observe specific cases provided in the four public welfare project modules to understand the stories and real needs behind the cases. Students must find the most empathetic cases and establish service targets and creative themes.

(2) Thematic creative guidance

Teachers implement guidance using an integrated teaching framework of “teaching, learning, doing, and evaluating.” The first step is introducing classic cases, combining the fundamental theories of the course to explain the formal rules used in the cases and conduct an in-depth analysis of the knowledge content, such as the connection between the case and the market and social needs so that students can master the basic concepts subconsciously. The formal rules of creation can establish the connection between professional design and the market, completing the cognitive transition from works to products. The second step involves allowing students to design creative plans and sketches based on their pre-established themes and to discuss and analyze, make suggestions, and learn from each other, thereby mobilizing students’ learning initiative and enthusiasm and forming a positive learning atmosphere, to ensure the effectiveness of teaching. In the third step, students modify the design plan based on their creative ideas and discussion results and select materials and tools for theme creation

practice. In the fourth step, teachers comment on the works from aspects such as shape, connotation, consumption value, social service function, etc., thereby further integrating the curriculum theory and creative practice goals, which not only consolidates professional knowledge for students but also further helps students clarify the creative theme and service goals.

(3) Arrangement of achievement exhibition and charity bazaar

“Exhibitions and bazaars” are divided into three links: preliminary publicity, venue layout, and sales. In the early publicity stage, each student must design a poster based on the “Charity Sale” theme and combine it with the teaching content of this course. It should not only reflect the theme of the activity but also highlight the characteristics of this course. Secondly, students are to select a poster with the most publicity effect among many posters works and paste it on the publicity column for preliminary publicity. In venue layout, teachers first assign the design task of the “signature wall” and explain to the students the process of using the signature wall (that is, anyone who enters the exhibition and purchases products can sign on the signature wall to indicate that they have joined this activity), and its function (i.e., calling for and mobilizing students to join public welfare activities, and expanding the influence of activities). Subsequently, students are required to use the knowledge learned in this course to discuss and design the material, shape, pattern, text presentation, etc. of the signature wall, and lastly, the finished product is placed at the entrance to the venue. Furthermore, students are mobilized to observe the exhibition venue, choose the exhibition location according to the characteristics of their works, design and arrange the display space and the placement and arrangement of the works by themselves, and design and produce “exhibitions” that can explain and guide the theme according to their creative themes. Facade installations are used to form a “small exhibition hall” and “small charity shop” with personal characteristics, helping visitors to quickly identify the creative themes and products they are interested in. During the sales process, students record the products sold and the amount of proceeds and invite buyers to sign on the “signature wall” (if consent is obtained, buyers can take photos holding the purchased products for record-keeping). This enhances the significance of the event and expands its influence.

(4) Donation and teaching summary

Students select the charity theme project of their choice in Alipay and donate all the proceeds from the sale. After the donation, the software automatically generates a public welfare donation certificate, and the student can take a screenshot. After the charity bazaar, teachers organize a teaching summary meeting. Students are allowed to display the results of public welfare donations, share the gains of this course, and suggest course construction to form a sound teaching cycle system and improve the industry-university-research and education program.

## **5. The innovative significance of the industry-university-research education model of “works, products, and public goods”**

The “works, products, and public goods” industry-university-research education model explores the teaching methods of practical courses in university design majors that comply with China’s educational modernization requirements. It is a teaching method suitable for the current teaching status of designing professional practical courses based on the research and analysis of traditional teaching problems. It has innovative significance for eliminating teaching problems and improving teaching quality.

(1) Deep extension and expansion of the content of “social services”

Teachers not only teach the basic theory of the course and the formal rules of creation but also

introduce social needs into the classroom and establish the course goal of “serving the society.” At the same time, in the process of practical guidance for students, cognitive problems such as “how to apply the knowledge learned in professional design,” “the connection between works and the market,” “designing products and social services,” etc., are solved. This helps students complete the cognitive transformation from “works” to “products” to “public goods” and improve their practical skills from “professional knowledge” to “professional design.”

(2) Theme guidance, independent exploration, and stimulation of students’ creative thinking

Firstly, students established the theme of “social service” under the guidance of teachers. Creative practice based on realistic themes can improve the current problems of student works being “basic” and “out of touch with current social needs.” Secondly, interactive design discussions fully utilize students’ cognitive subject role. Students can boldly explain creative concepts, display sketches, ask questions, and evaluate the works. They can also use various forms, tools, and means to practice creation “by hook or crook,” changing the traditional “teachers’ one-way theoretical indoctrination and students’ one-way form imitation.” The teaching model stimulates students’ learning initiative and creative thinking, thereby preventing the problem of “stylized” works.

(3) “Lesson within a lesson”: Consolidation of knowledge and improvement of meaning

The achievement exhibition and bazaar are a real-time application of course knowledge, a “lesson within a lesson.” In using course knowledge to decorate the venue, students can integrate course theory and creative practice and further deepen their understanding of social service themes, thereby consolidating the knowledge they have learned and enhancing the meaning of creation.

## 6. Conclusion

The “works, products, and public goods” industry-university-research education model integrates “social services” with design professional teaching to help students establish the connection between “works and the market” and “design products and social services” and build a “design foundation” as a bridge to “professional design.” We cultivate students’ practical design skills and aesthetic abilities to serve society, train students’ independent learning ability, and stimulate students’ enthusiasm for learning and creative thinking. Therefore, it can effectively improve the problems existing in traditional teaching, such as “disengagement from the market and social needs” and “neglect of creativity cultivation,” help students establish the awareness of actively serving society, and enhance students’ “service contribution ability,” which is in line with the modernization of Chinese education, basic requirements and expectations of teaching and education model.

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## Disclosure statement

The authors declare no conflict of interest.

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