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# Research on China's Industrial Design Education

## From the Perspective of National Policy

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Abstract: An increasing number of countries including China have incorporated industrial design development into their national development strategies. However, China hasn't realized the process of industrial revolution in a real sense yet for most of its industrial manufacturing industry lacks innovation ability and still relies on cheap labour to get profits. In this context, industrial design has become the main force to promote China's industrial structure adjustment and innovative talents are the core driving force; government plays a vital role in the national education development orientation and talent training. This paper takes the development of Chinese industrial design education in colleges and universities from 2015 to 2019 as an example and analyzes the influence of national policy on industrial design education. It mainly adopts literature analysis and data statistics methods to compare the development process, professional ranking, the talent training scheme and curriculum in colleges and universities. The purpose is to provide development direction and reference for colleges and universities with industrial design majors.

Keywords: National Policy; Industrial Design; Undergraduate Education; Creativity

## 1 Research Background

Nowadays, the competition among countries is not only about economic strength, but also about educational development. Industrial design education which began with the establishment of Bauhaus School in 1919 has undergone nearly one hundred years. However, only 64 of over 200 countries and regions in the world have basically achieved industrialization. The most populous countries such as China, India, Indonesia and Brazil haven't truly completed the process. According to the statistics in August 2019, the number of graduates (including art) each year in China is up to 56, 274 and the total number of enrolled students majoring in industrial design is 262, 263. It is surprising that the numbers are still increasing every year[1]. China is now a "great power" in cultivating industrial design talents, and the industrial design has become one of the popular majors in recent years.

It is pointed out in Document No.390 [2010] issued by Ministry of Industry and Information Technology of the People's Republic of China[2] that the development of industrial design in China is still in the primary stage, and there are many prominent contradictions and problems in its process of development. Compared with that of

[1]Documents of the Ministry of Education of the People's Republic of China: Number of Undergraduate and Junior College Students: http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2018/qg/201908/t20190812_394195.html

[2] Ministry of Education of the Chinese Government Document No.390 [2010] issued by Ministry of Industry and Information Technology of the People's Republic of China: http://www.gov.cn/zwgk/2010-08/26/content_1688739.html

developed countries, there is still a huge gap in China's industrial development, which is mainly manifested in the extreme lack of high-level professionals and weak independent innovation ability. Design education is still in the stage of great disparity of quantity and quality for the large number of students and the shortage of teacher resources. It seems that the national policy to support the training of high-quality industrial design talents in colleges and universities has not fully functioned. It can be concluded that the existing industrial design education system of colleges and universities fails to meet the quality and quantity requirements of China's industrial development for talents.

Therefore, cultivating innovative talents is now an important part of teaching reform that cannot be ignored. The 18th Report on the Work of Government of the Communist Party of China (2012)[3] clearly stated the important role of creativity in the competition of culture and comprehensive national strength; the national "13th Five-Year Plan" listed "innovation" as the primary development philosophy. Cultivation of creativity must ultimately be implemented in teaching, just as educators in China are also striving to improve students' innovative ability in the process of design education. The literature review mainly covers the following two aspects:

## 1.1 National Policy

National policy is a macro strategy for a country based on its current development. Taking the relevant policies issued by China after 2010 as example, *Several Guiding Opinions on Promoting the Development of Industrial Design* issued by the Ministry of Industry and Information Technology pointed out the importance of industrial design to developing an innovative country and proposed to strengthen the construction of industrial design disciplines in colleges and universities; In 2011, *The Circular of the State Council on Issuing* the *Plan for Industrial Transformation and Upgrading (2011-2015)* proposed to strengthen the training of innovative and skilled talents, and actively promoted the "Training Program for Innovative Talents" to cultivate high-quality industrial design and research and development (R&D) talents. At the same time, *"the 12th Five-Year Plan for National Economic and Social Development"* proposed the development requirements of "promoting the transformation of industrial design from appearance design to high-end comprehensive design services". Subsequently, the Academic Degrees Committee of the State Council issued the revised *Catalogue of Disciplines for Degree Awarding and Talent Cultivation*, which established Design as a first-level discipline; In 2012, the Notice of the State Council on Issuing the 1*2th Five-Year Plan for the Development of the Service Industry* clearly pointed out the importance of industrial design development; As mentioned in *Made in China 2025* issued by the State Council in 2015, "a batch of professional and open industrial design enterprises should be cultivated, Original Equipment Manufacturing (OEM) enterprises should be encouraged to establish research and design centres, innovative design education should be developed, and national industrial design awards should be established"; In 2016, China Industry Association reached strategic cooperation with 16 relevant organizations including the International Design Council and the European Design Association; In 2017, the Third Meeting of the Fifth Council of China Industrial Design Association (CIDA) once again proposed the important role of industrial design in personnel training and industrial promotion.

Since 2018, the spirit of the 19th National Congress has been taken as the main direction to strengthen the influence of CIDA in the world. On April 8, 2019, the National Development and Reform Commission (NDRC) divided the industrial structure into encouraged categories, restricted categories and eliminated categories in *The Draft for the Guidance Catalogue of Industrial Structure Adjustment* (2019 Version), and pointed out that the industrial design of encouraged categories and cultural and creative design service industries play an important role in promoting social development and economic construction. According to the directivity of relevant national policies in the past 10 years, it can be seen that China attaches increasing importance to the industrial design, which directly affects the setting of the goal and direction of industrial design talents training in Chinese colleges and universities.

## 1.2 Development of Industrial Design Education in China

The development of industrial design in China started rather late. On May 21, 1956, the State Council approved the establishment of the Central Academy of Arts and Design (that is, the Academy of Arts and Design of Tsinghua University). In 1960, in order to improve the modelling and packaging of light industry products, the Ministry of Light Industry established the Major of Modelling Art Design for Light Industry Daily Goods in Wuxi Institute of Light Industry (that is, Jiangnan University), which was the earliest department with

[3]Government Documents: http://www.gov.cn/jrzg/2011-11/01/content_1983642.htm

the concept of industrial design. Ma Yuting (2011) pointed out that the real development of industrial design education began in the late 1970s. After the Cultural Revolution, China put forward a series of slogans to support the design of light industry, but it did not set up corresponding professional courses in colleges and universities. Therefore, Liu Guanzhong established China's first industrial design department at the Central Academy of Art and Design in 1984, which opened the door to China's industrial design education in a real sense. Then Hunan University officially established the "Industrial Design Department" in 1987, and the CIDA was founded in the same year. The development of industrial design education in China has gone through 35 years. As of 2019, there are more than 600 colleges and universities with industrial design major (updated from time to time). The colleges offering with industrial design major can be roughly divided into two categories because of the particularity of the major: art colleges and comprehensive engineering colleges. This is also the main reason for the great differences in the development of industrial design major in China.
Jing Shikai (2015) pointed out that the major problem of China's industrial manufacturing is the lack of independent innovation ability, and product quality and technical standards need to be improved. Liu Guanzhong (2017) believes that China's industry is still in the stage of "manufacturing" rather than "creation" and has not yet truly realized industrialization. In terms of design, it is still based on learning, imitation and introduction of foreign theories. It is still urgent that government should formulate more supportive policies at present. Only by seeking truth from facts and exploring the current problems in China can we promote the all-round development of Chinese society. Therefore, many scholars have pointed out the relevant problems in design education, such as Ying Fangtian (2019) believes that China's design discipline is relatively lagging behind, and China's current development strategy is a decisive factor in the division of design education majors in colleges and universities. Liu Liyuan (2016) further pointed out that multiple internal drive is the key to cultivating industrial design talents and teaching reform and development in art colleges and universities. He believes that different education systems should be established in China's design education for the homogenized design education is difficult to cultivate diversified and innovative talents. Zhang Ming (2017) believes that current requirements for industrial design talents training in China are composite talents, and students' comprehensive quality and ability can be better cultivated through interdisciplinary teaching mode. He points out that schools are a bridge between industry and the social environment. In order to better serve the society, universities and colleges need to cooperate with national strategies under the leadership of the Ministry of Industry and Information Technology and the requirements of all walks of life. Wang Shouzhi (2016) pointed out that the current design education system in China is single and rigid, because design schools across the country use the same type and numbers of courses in their training programs from undergraduate to graduate.
Through above viewpoints, it is easy to find that China's social development needs comprehensive and versatile talents of industrial design in the new era, and the importance of creativity in talent training is emphasized. Therefore, the main issue to be discussed in this paper is how to develop a talent training plan in line with the social development for China's industrial design education, so as to drive colleges and universities to cultivate innovative talents in practice.

## 2 Development of Industrial Design Education in Colleges and Universities in China

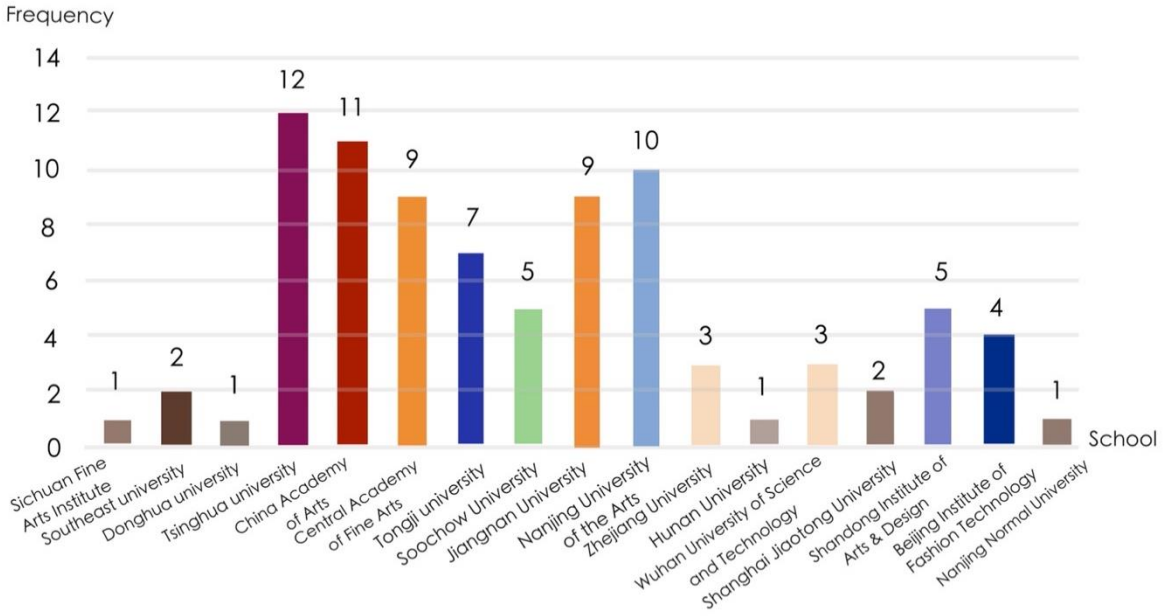
### 2.1 Necessity of Selecting Universities in the Ranking of Majors

The ranking of university majors, as an index system to evaluate the development of higher education, is also an important scale to measure the professional level of universities and the development of discipline construction to a certain extent. In 2015, the State Council issued the document "Overall Plan for Promoting the Construction of World-class Universities and First-class Disciplines", which clearly pointed out that performance should be used as a lever. Incentive and restraint mechanism should be established to encourage fair competition, strengthen management by objectives, highlight the practical results of construction, and build a world-class university &first-class discipline evaluation system with Chinese characteristics, so as to fully stimulate the endogenous motivation and development vitality of colleges and universities and guide them to continuously improve their educational level. In 2018, the Ministry of Education, the Ministry of Finance and the NDRC issued the "Guiding Opinions on Accelerating the Construction of 'Double First-Class' in Colleges and Universities". It was clearly mentioned in the notice that the third-party evaluation of colleges and universities and their majors should be established, and the third-party is encouraged to independently monitor and evaluate the construction process and effectiveness. We will actively explore a modern higher education evaluation system with Chinese characteristics. As a third-party evaluation, the ranking of university majors can effectively monitor the development of disciplines.

## 2.2 Selecting Forward-looking Universities of Design Discipline

Industrial Design as a secondary discipline, there is no relevant evaluation ranking in China, so this paper estimates the development of Industrial Design based on the background of Design (primary discipline). According to the relevant research of domestic scholars on the development of industrial design at the present stage, this paper collected a total of 36 ranking lists of universities majoring in design from 2014 to 2019. The ranking lists with high scoring quality indicators are selected from the existing evaluation index system in China, which mainly retrieved from the Subject Rankings of the Ministry of Education of the People's Republic of China, ARWU World University Academic Ranking List, China Science and Education Evaluation Network, Wushulian Ranking List, Alumni Association Ranking List, the Best University Network, etc. The data of the past six years can not only provide strong data support for our research, but also better reveal the change of professional level of different colleges and universities. The ranking list is generally divided into two categories after sorting out: 12 academic ranking lists (ranking with academic authority) and 24 website ranking lists (ranking of individuals or websites). The frequency and mode of universities appearing in different years and rankings are statistically analyzed. The frequency can be used to calculate the number of times that different institutions appear in the Academic Rankings of 2014-2019. The higher the frequency value is, the higher recognition degree of the group marker value in the overall level is. On the contrary, the smaller the frequency value is, the lower the recognition degree of the group signal value in the overall level is. The mode can be used to better see the professional ranking of target universities in different annua0l rankings. Since the analysis object is "ranking", the smaller the mode value is, the higher the professional level of the group marker value in the overall level is. On the contrary, the larger the mode value is, the lower the professional level of the group mark value in the overall level. The data as shown in Table (1-5):

*Table 1. Frequency of Academic Ranking of Design Colleges from 2014 to 2019*




This study sorted out the most frequently appearing (that is, frequency) institutions in the academic ranking from 2014 to 2019. A total of 17 institutions participated in the ranking, among which Tsinghua University was included in 12 academic ranking lists. China Academy of Art, Central Academy of Fine Arts, Nanjing University of the Arts, Jiangnan University and Tongji University are also on the list for about 10 times. It can be seen that Tsinghua University, China Academy of Art, Central Academy of Fine Arts, Nanjing University of the Arts, Jiangnan University and Tongji University have achieved a high degree of recognition of professional level. When sorting out the mode list of academic colleges from 2014 to 2019, we chose to conduct data statistics biennially, which can better see the professional rankings of target colleges in different years. As shown in the Table 2, Table 3 and Table 4:

*Table 2. Mode of Academic Ranking of Design Colleges in 2014/2015*

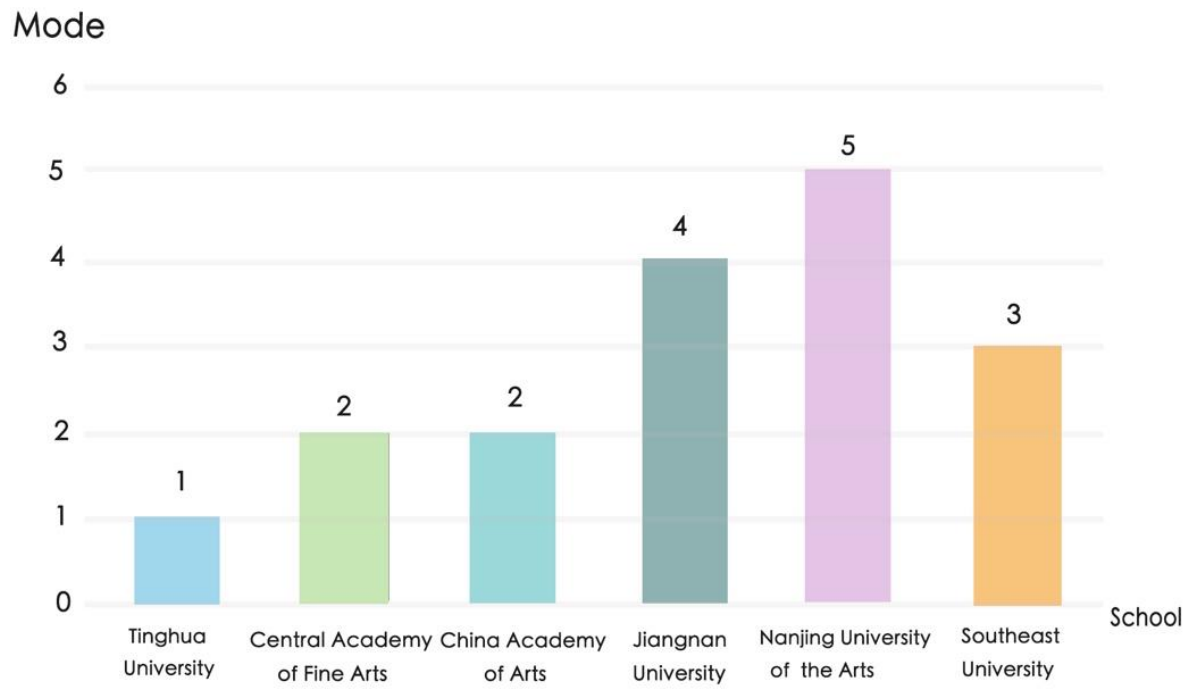



*Table 3. Mode of Academic Ranking of Design Colleges in 2016/2017*

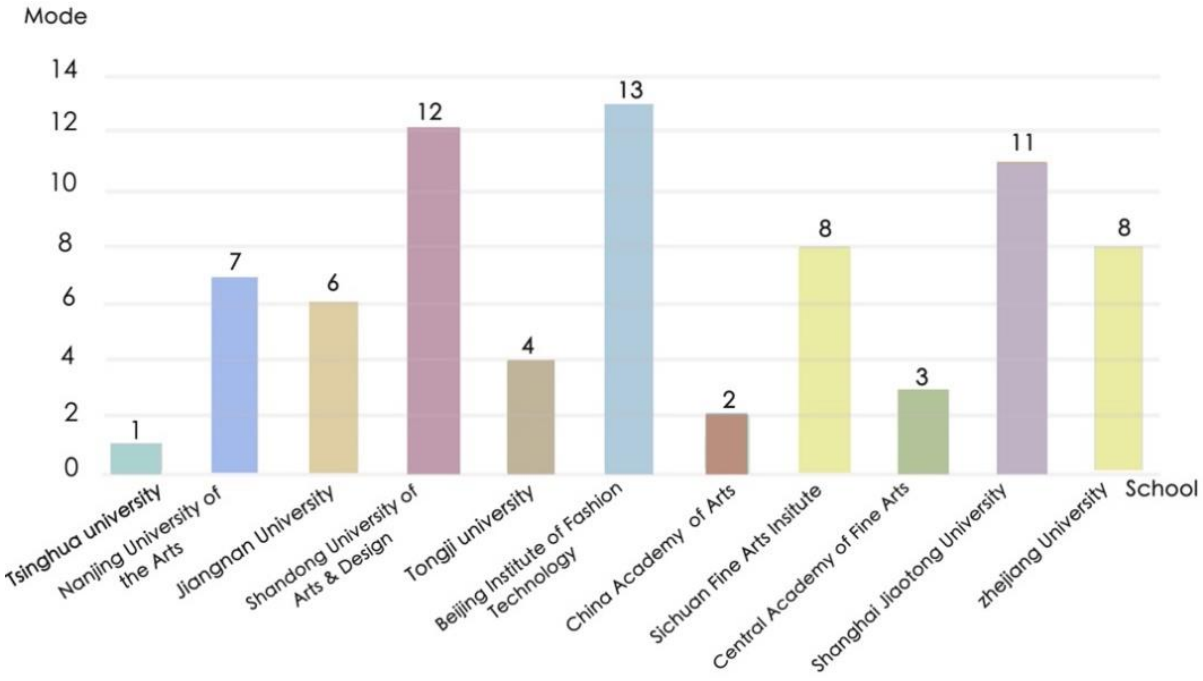



*Table 4. Mode of Academic Ranking of Design Colleges in 2018/2019*

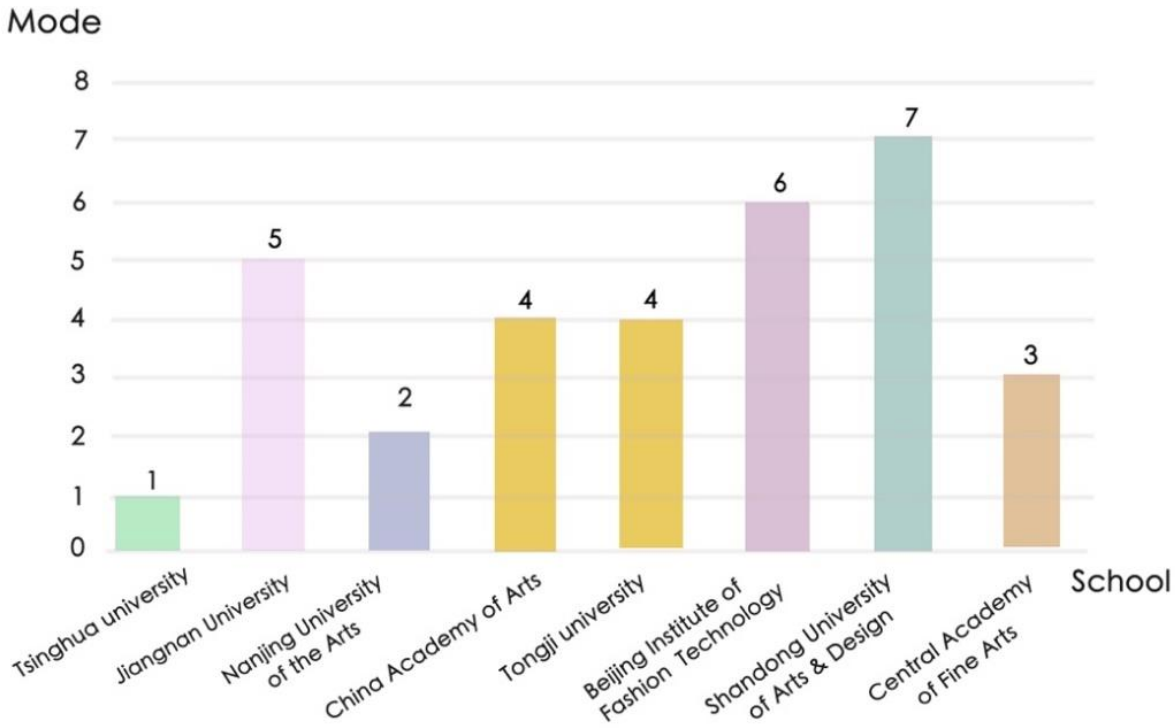
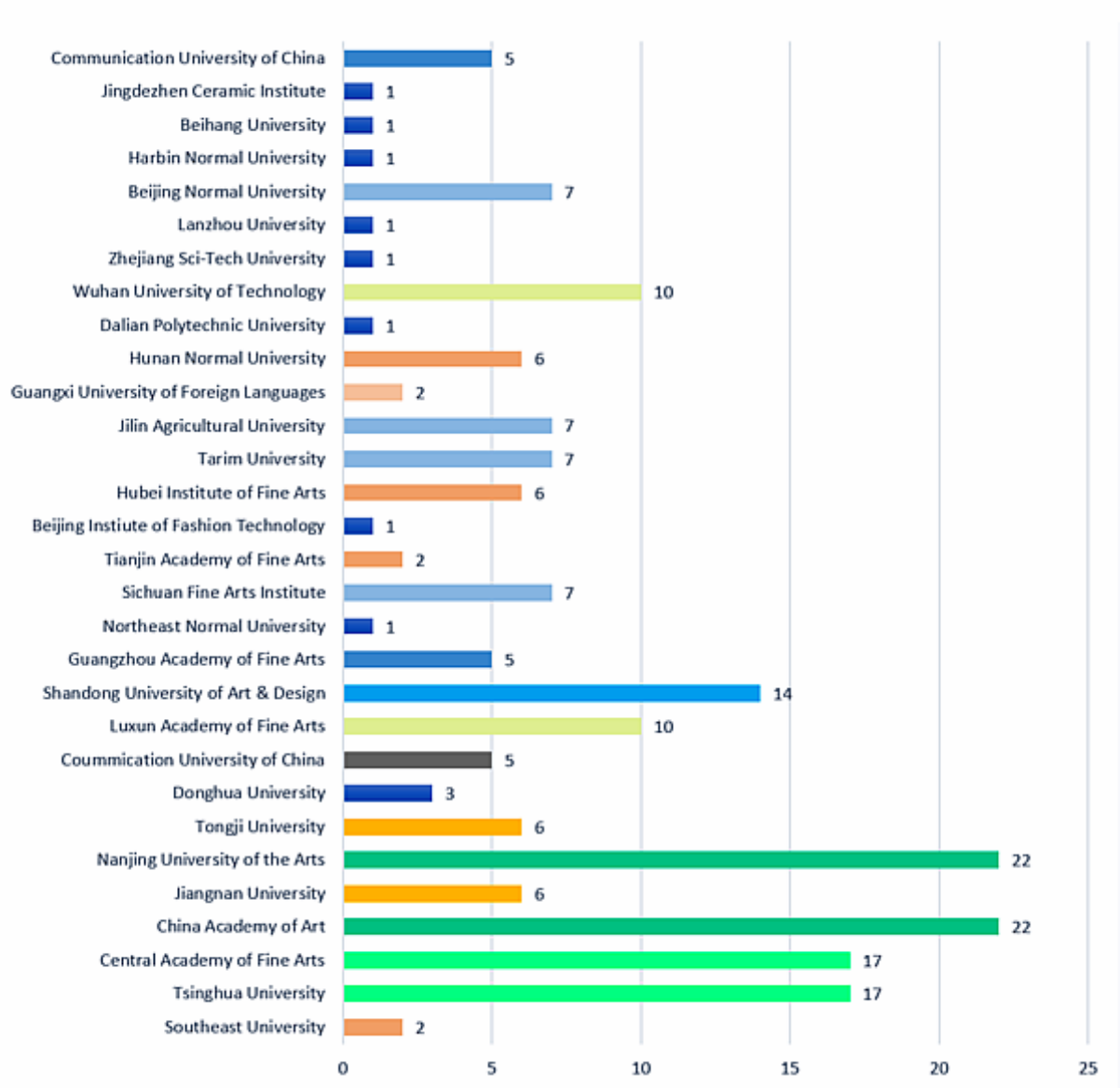



Table 2 shows the academic ranking of 6 universities from 2014 to 2015. The order of modes from lowest to highest is: Tsinghua University, Central Academy of Fine Arts, China Academy of Art, Southeast University, Jiangnan University, and Nanjing University of the Arts. Tsinghua University ranked first, followed by the Central Academy of Fine Arts as well as the China Academy of Art, and Southeast University ranked third. Table 3 contains 11 colleges and universities participated in the 2016/2017 academic rankings. The order of modes from lowest to highest is: Tsinghua University, China Academy of Fine Arts, Central academy of Fine Arts, Tongji University, Jiangnan University, Nanjing University of the Arts, Sichuan Fine Arts Institute, Zhejiang university, Shanghai Jiaotong university, Shandong University of Art & Design, Beijing Institute of Fashion Technology. Tsinghua University ranked first, China Academy of Art ranked second, Central Academy of Fine Arts ranked third and Tongji University tied for fourth place. Table 4 shows 8 universities and colleges participating in the academic ranking from 2018 to 2019. The mode values are ranked from low to high: Tsinghua University, Nanjing University of the Arts, Central Academy of Fine Arts, China Academy of Art, Tongji University, Jiangnan University, Beijing Institute of Fashion Technology, and Shandong University of Art & Design. Tsinghua University ranked first, Nanjing University of the Arts ranked second, Central Academy of Fine Arts ranked third, and Tongji University as well as China Academy of Art ranked fourth.

*Table 5. Frequency of Website Ranking of Design Colleges from 2014 to 2019*




As can be seen from the frequency list of academic ranking of design colleges in Table 1, Tsinghua University, China Academy of Art, Nanjing University of the Arts, Central Academy of Fine Arts, Jiangnan University and Tongji University appear more frequently. It can be seen from Table 2, Table 3 and Table 4 that Tsinghua University, China Academy of Art, Nanjing University of the Arts, Central Academy of Fine Arts, Jiangnan University and Tongji University have always been in the top and relatively stable in the ranking of academic majors. Among them, Tsinghua University ranked first in the ranking of majors from 2014 to 2019, while the ranking of Central Academy of Fine Arts as well as China Academy of Art fluctuated slightly. Tongji University's ranking of majors rose steadily since 2016. Nanjing University of the Arts made a breakthrough in the ranking of majors from 2018 to 2019.

It can be seen from the data in Table 5 that Nanjing University of the Arts, Central Academy of Fine Arts, Tsinghua University, Shandong University of Art & Design, Wuhan University of Technology, Luxun Academy of Fine Arts, Tarim University, Beijing Normal University, Jilin Agricultural University and Sichuan Fine Arts Institute appear more frequently in the website list, but most of the universities listed in the website ranking do not appear in the academic one.

The ranking of university majors will be influenced by different evaluation index systems, because the latter have different emphases. At the same time, there may be great differences in rankings under the influence of national policies in different periods. If the rankings of universities in different leader boards adopting the same evaluation system are almost unchanged, then the evaluation system is more reasonable. On the

contrary, if there are great differences in university rankings, it reflects that the evaluation system may have some related problems, such as unreasonable setting and unscientific evaluation.
As can be seen from Table 5, the list of design schools in the website category is more complex. The list of design schools is different from year to year, and the ranking is not stable enough. Moreover, most of the annual website rankings of design colleges are compiled by different social groups (including students, parents, training institutions of Nationwide Unified Examination for Admissions to General Universities and Colleges, etc.), which seems to have little practical reference value. Therefore, this research believes that the academic ranking lists from 2014 to 2019 have more practical reference value, and finally determines 6 universities and colleges as the main research targets of this paper, including Tsinghua University, China Academy of Art, Central Academy of Fine Arts, Nanjing University of the Arts, Jiangnan University and Tongji University.

## 2.3 Talent Training Objectives and Curriculum Setting of Colleges and Universities

Talent training objectives of colleges and universities are determined in line with specific social fields and social needs, which are closely related to national policies. The curriculum is designed to build students' comprehensive knowledge structure and develop their professional practice capability. Therefore, collecting and analyzing the training objectives and curriculum of colleges and universities can better grasp whether the development direction of colleges and universities is reasonable under the background of national policies in the same period. This study sorted out the training objectives and core curriculum settings of 6 universities, as shown in Table 6:

*Table 6 Knowledge Framework of Industrial Design Teaching in Colleges and Universities (Drawn by the author)*

| | Training Objectives[4] | Core curriculum |
|---|---|---|
| Academy of Arts & Design, Tsinghua University | To cultivate high-quality, high-level, versatile and innovative talents | Industrial Design, Engineering Foundation Courses for Design Engineering, Interdisciplinary Design Practice, etc. |
| School of Design &Art, China Academy of Art | To meet the needs of the society and broaden the multi-disciplinary knowledge field as the direction of discipline construction, cultivate innovative talents in the field of industrial design. | It has not been made public. |
| School of Arts & Design, Central Academy of Fine Arts | To cultivate international art design elites with macroscopic art design philosophy, excellent professional ability and social responsibility leading the future trend of art design. | It has not been made public. |
| School of Industrial Design, Nanjing University of the Arts | On the basis of training industrial designers with basic skills, professional knowledge and comprehensive design adaptability, the cultivation of "designers" is emphasized. | Product Development and Design, Drawing and Model, Material and Production Technology, Product Engineering Design, Ergonomics Application Design, Mechanical Structure, Design Research on Specific Subjects |
| School of Design, Jiangnan University | To cultivate compound industrial design talents with profound theoretical knowledge of industrial design and the ability to discover, define, analyze and solve problems, strong sense of social responsibility and innovative design thinking. | Technology Foundation and Design, Principle and Processes of Interaction Design, User Research and Experience Strategy, Intelligent Product Development, Design Psychology, Interaction Design Technology, Service Design, Design Demonstration, Cross Design and Practice. |
| College of Design and Innovation, Tongji University | Advocate people-oriented and sustainable innovation, cultivate innovative design practitioners with systematic vision, social responsibility and independent thinking ability. | Theory and Methods for Product Design, Art and Aesthetics, Materials and Manufacturing Technology, Ergonomics, Interaction and Experience Design, Commercial Brand and Product Strategy, Advanced Manufacturing and Advanced Design Technology and Tools, and Design Methods, etc. |

As can be seen from the Table 6, different universities have different objectives in talent cultivation. However,

[4]Excerpt from the talent training objectives of the official websites of colleges and universities.

these talent training objectives and plans all respond positively to national policies and keep up with the trend of social development. The cultivation of students' creativity is repeatedly emphasized in the talent training objectives of every university, which is consistent with the requirements of national policies for talents. It is interesting to note that there is no course name related to creativity in the core courses of the 6 universities. Most of the universities still focus on improving students' understanding and practical ability of design theory, which seems not to directly match the requirements of the training objectives of the universities for innovative talents.

Taking the Nanjing University of the Arts, Central Academy of Fine Arts, Jiangnan University, Shandong University of Art & Design and Nanjing Forestry University as the research objectives, and the teachers of the Industrial Design as the object of interview, this study (2020) evaluates the curriculum design project during the stage of undergraduate. This study hopes to have an in-depth understanding of how teachers, the instructor of the teaching process, evaluate students' curriculum design projects through interviews and whether they take creativity into account in their specific evaluation indicators. A total of 64 interview samples have been collected. We found that teachers adopted different evaluation indicators for design projects in different academic year and term. Although 40% of the teachers mentioned the importance of creativity many times in the evaluation indicators, they were largely unable to explain what is creativity and what is a creative design project. Teachers were more likely to use words like "creative", "characteristic" and "innovative" to describe creativity. Most teachers' judgment on excellent design projects is more based on personal preferences and experience, and they always fail to integrate creativity into the teaching process. In the long run, such a teaching model is not conducive to cultivating students' ability of divergent and independent thinking, and the graduates trained by colleges and universities hardly meet the requirements of national policies for innovative talents, let alone cope with the thorny problems that need to be solved in society and work. In other words, although the formulation of training plans and curriculum affected by the national policy to a large extent, and colleges and universities also have the awareness of cultivating students' creativity, there is often a lack of relevant and specific guidance in the actual teaching practice, including the development or introduction of appropriate teaching methods and improvement of teachers' awareness and creativity cultivation ability.

## 3 Suggestions for the Development of Industrial Design in China

Through combing and analysing the talent training plans and curriculum settings of the 6 universities, we found some common points among the six universities, which are the positive response to the national policies supporting the development of industrial design. Therefore, this paper puts forward the following suggestions for the development of China's industrial design education based on the current situation:

### 3.1 Clear Goal and Strong Perceptiveness

The national professional education and talent cultivation plan will be directly affected by the implementation of national policies and the development of contemporary enterprises. Although the ultimate goal to cultivate talents is to serve the country and the society, the demand for talents in social development is changing and improving every day. At present, specific talent training programs need to be determined through a series of complicated procedures, including national policy reform, local policy issuance, local colleges and universities to modify the syllabus, and then adjust the curriculum setting. The whole procedure can take 10 to 15 years. At that time, the demands of the country and society for talents may change, which will lead to the fact that the talents trained by colleges and universities cannot fully meet the requirements of the social development. This shows that China's industrial design colleges must have a strong keen vision in the future development process, and grasp the talent requirements of the mainstream of social development by following the trend of national policies. The 6 colleges selected in this study reflect this advantage. Therefore, colleges and universities should pay more attention to the applicability of courses and the cultivation of students' innovation ability in the process of formulating training objectives and curriculum practice teaching, and combine the teaching advantages of different colleges and universities to build a reasonable, scientific and forward-looking curriculum teaching system.

### 3.2 Facilitating Interdisciplinary Research

Industrial design, with innovation in the new industrial era as its core, covers a wide range of knowledge. Under the social background of the integration of science and technology, a single discipline has long been unable to meet the development of industrial design major, which is clearly reflected in the curriculum of the above 6 universities. For example, the Academy of Arts and Design of Tsinghua University offers

interdisciplinary design practice courses; College of Design and Innovation of Tongji University has implemented interdisciplinary teaching by setting up systematic innovation courses. School of Design of Jiangnan University has set up advanced mathematics and other engineering subjects as required courses of industrial design. It can be seen that colleges and universities need to break the original discipline boundaries in the process of training industrial design talents. When it comes to the content of teaching professional knowledge in different fields, they also need to give joint lectures with professional teachers in other fields, so that the theory and practice of the course can be more scientific. Different colleges and universities can adjust the teaching structure of courses in accordance with their own characteristics and the background of national policies. Only in this way can we effectively promote the cultivation of high-quality industrial design talents needed by the country.

### 3.3 Reform of Educational Model

A large number of studies have shown that the traditional Chinese education model of teacher-on-top and student-on-bottom indoctrination limits the cultivation of students' creative thinking. The whole teaching process lack of communication and discussion between teachers and students, and students just accept information and knowledge passively. Teachers also fail to fully understand whether students have mastered the knowledge taught in class and after class. In such a closed-loop process, the teaching efficiency is greatly reduced, and students are unable to apply basic theoretical knowledge in the process of design practice. From the courses offered by the 6 universities, it can be seen that most of them have set up creative workshops and studios in the course practice, as well as providing international exchange practice. This can enable students to think and solve problems by themselves to a certain extent, and effectively cultivate students' capacity for innovation and independent thinking. Therefore, it is essential to promote the teaching mode reform by optimizing the teaching process and enriching the teaching content to meet the current social needs effectively.

In addition, it took a long time for the national policy to be delivered to the curriculum reform. Therefore, the universities can in line with the development needs of enterprises to cultivate talents while conducting the teaching reform, and carry out the mode of industry-university-research cooperation (industry, university and scientific research institutions cooperate with each other in research and development), which can make students fit into the society better and faster and generate various production factors needed for technological innovation. China's colleges and universities of industrial design can take advantage of the useful point in this suggestion.

## 4 Conclusion

In an era of rapid development of information, China's industrial design education can cultivate diversified and innovative talents suitable for their own development only by rising to the challenges as well as keenly grasping the needs of social development for talents. This is the primary task and a huge challenge for the development of China's institutions of higher education. In this study, the academic ranking of universities (evaluated by the Ministry of Education or authoritative list) was adopted as a measuring tool to select prospective universities of industrial design. This paper makes an in-depth analysis of the content that needs to be reformed in industrial design education at present stage based on the academic ranking list, which is a new breakthrough point and attempt in the research field of design education. However, we still need to carry out a lot of in-depth research to find a suitable way for the development of China's industrial design education. The future is promising though the road is arduous and long.

## References


Chen Jiajia, (2019). 40th Anniversary of Reform and Opening up - Summary of Seminar on Development Strategy of China's Industrial Design. *Journal of Nanjing University of the Arts (Fine Arts and Design Edition)*, 01, 47–50.

Deng Bibo, &Fan Shengxi, (2013). Designers: Research on the Cultivation of Industrial Design Professionals. *Journal of Nanjing University of the Arts (Fine Arts and Design Edition)*, 01, 156–159.

Fan Yun, Zhang Yang, Bohemia Erik, Xia Xiang, & Nielsen Liv, (2020). Assessment criteria within China's industrial design Education, *E&PDE*. 2020, 166

Li Jie, &Li Ye, (2019). Wang Shouzhi: The Essence of Design is to Find and Solve Problems. *Design*, 32(02), 69–71.

Liu Guanzhong, (2017). Professor Liu Guanzhong from Tsinghua University: The Mission of Design is the Purification of the Human Soul. *Industrial Design*, 11, 8–11.

Liu liyuan, (2016). Research on Multivariate Drive Teaching of Industrial Design in Colleges and Universities. *Design*, 05, 84–85.
Ma Yuting, (2011). *Comparative Study on Industrial Design Education Between China and Foreign Countries*. Hubei University of Technology
Tong Huiming, (2019). Only Design-Driven Brand can Maximize the Value of Design. *Design, 32*(08), 36–38.
Wang Shouzhi, (2016). Wang Shouzhi on Design Education-Exclusive Interview with Wang Shouzhi, President of Cheung Kong School of Art and Design. *Design*, 18, 90–92.
Yang Ming, (1996). The Nature of Educational Development. *Educational Review*, 01, 13–16.
Yu Ying, (2013). Discussion on Art Design Education Mode from the Perspective of Cultural and Creative Industry. *Journal of Tongji University (Social Science Edition)*, 24 (05), 52–57.
Zhang Ming, (2017). Practical Research on Interdisciplinary Teaching of Graduation Design for Industrial Design Major. *Industrial Design*, 10, 27–28.

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