

Study on the Cultivation of Innovative Talents in Product Design Specialty Based on Discipline Competition

Taking Panzhihua University as an Example*

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Abstract—Through the comprehensive analysis of the achievements and existing problems in the training of innovative talents in the practice of product design discipline in Panzhuhua University, this paper puts forward the discipline competition as an important teaching approach for the cultivation of innovative talents in product design.

Keywords—discipline competition; innovation talent; cultivation

I. INTRODUCTION

With the development of social economy, the product design profession has gradually become a hot professional. There are more and more competitions related to product design. The professional competition in the industry has increasingly become an important platform for the cultivation of innovative professionals in this profession. Through participating in the professional discipline competition process, an autonomous and dynamic learning model is formed to stimulate students' internal motivation for learning. Participating in professional discipline competitions through scientific and effective organizations can not only improve the reputation of the school's major, but also help students develop the comprehensive qualities of creativity,

practical ability, hard work, and teamwork spirit. Here, it should take the exploration and practice of Panzhuhua University's product design major in this respect as an example. The importance of discipline competition for the cultivation of innovative talents for product design professionals is described.

II. RESEARCH AND PRACTICE ACHIEVEMENTS OF PRODUCT DESIGN PROFESSION COMPETITION IN PANZHUHUA UNIVERSITY

Our product design major was started in 2011. Due to the newly established major, there are outstanding problems in terms of teachers, students, relevant teaching systems and laboratories. Under such a background, the professional can only explore a suit for the comprehensive development of the professional to meet the needs of the students' practical ability and innovation ability training based on their actual situation.

Since the establishment of the product design profession in 2011, the discipline competition has been used as an important way of cultivating talents in the profession to carry out related practice. In the past five years, the profession has achieved a series of results. Main results (see "Table I") :

TABLE I. STATISTICS OF AWARDS FOR STUDENT DISCIPLINE COMPETITION (2012 - 2017)

Competition level	Student awards				Faculty Advisor Award	Outstanding Organization Award
	first prize	second prize	the third prize	Excellence Award		
national level	5 items	18 items	53 items	omission	22 items	12 items
Provincial level	21 items	80 items	63 items	omission	11 items	8 items

In remote location, it belongs to the second-level colleges of four-rate university. This article divides the domestic universities into five streams. Namely, the first-rate universities are key universities within the Everest plan (such as Tsinghua University, Peking University). The second-rate universities are 985, 211 engineering major universities. Third-rate universities are general universities. Fourth-rate

universities are provincial academy of sciences. Five-rate colleges are independent colleges. In recent years, the achievements of the major in organizing student competitions are regarded as the most prominent among the institutions in the Southwest Region. Through the research and practice of the design competition teaching system in recent years, the overall visibility and influence of the professional have been significantly improved. And the comprehensive influence has been ranking the best in among similar universities and colleges.

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III. THE SPECIFIC METHOD OF PROFESSIONAL COMPETITION TEACHING METHOD

Under the constraints of various objective factors, the product design of Panzhihua University can achieve such a series of results through taking several measures.

A. Setting up the Guidance System of Corresponding Discipline Competition Organization

In 2013, the major developed a series of teaching reforms and practices for student innovation activities and competitions, among which the reform of the discipline competition system and the personnel training program is an important part.

1) *Adjustment of talent training program:* From the talent training program in 2012, it is necessary to set up corresponding project and practice courses. And then, the students would adapt to participate in matches suitable for the corresponding semester, such as "Thematic Design 1" and "Thematic Design 2".

At the same time, the professional teachers are required to introduce the subject competition project that is suitable for the course into the course design in the related design course. And it would be the students' course design work. And the teachers should organize students to participate in the design competitions related design projects. They will try the best to replace the simple course design work with some achievements in the design competition on the premise of achieving the teaching objectives of the course. And then, it would comprehensively improve the effectiveness of student design works, enhance students' experience and self-confidence in the design competition.

2) *Establishment of discipline competition system:* In 2013, the Guild of Arts Academic Discipline Steering Group took the lead in formulating the "awarded marks system of students' academic competition of art academy in Panzhihua University". Through the format of Art Academy,

the student financial aids in the awarded marks system will be clearly defined and standardized. It would be convenient for the student's awarded marks.

In addition, the product design profession specifically aims at the actual situation and changes of the current discipline competition. And it has formulated a series of rewards and penalties system for the students in the discipline competition. For example, it requires students to participate in the relevant design competition in a course as much as possible. And the degree of student participation should be appropriately reflected in the course assessment results.

B. Forming an Excellent Instructor Team

In order to organize students to participate in the competition, it is necessary to establish a team of contest instructors with professionalism and high professional standards. As we all know, the overall level of professionalism of design teachers is extremely low. And a large number of teachers lack professional ethics and professionalism. They are working in various domestic design institutions. If the teachers want to guide students to participate in the competition to achieve certain results, the product design profession first selects outstanding teachers from the professional teachers to form the competition guidance team. The members of the tutor team are outstanding in the teaching level, practical ability, and professionalism. Thus, it would ensure the overall high level and professionalism of tutoring teachers.

At the art academy level, in order to encourage instructors to actively organize and guide students to participate in related discipline competitions, the Art Academy Discipline Competition Steering Group has been established to conduct macro management and services. For organizing the students to participating in the discipline competition, a corresponding incentive system has been formulated. The details are as the followings.

TABLE II. STATISTICAL TABLES OF TEACHERS' ORGANIZING AND GUIDING STUDENTS TO PARTICIPATE IN ACADEMIC COMPETITIONS

Serial Number	Level	Award class hour	Remarks
1	National discipline competition	18 hours/term	All instructors participating in the competition are allocated an average time (each instructor directs more than 5 works)
2	Provincial discipline competition	12 hours/term	It was the same to the above.
3	Municipal discipline competition	6 hours/term	It was the same to the above.

TABLE III. STATISTICAL TABLE OF TEACHER ORGANIZING AND GUIDING STUDENTS TO PARTICIPATE IN INCENTIVE CLASS OF DISCIPLINE COMPETITION

Serial Number	Level	Award class hour	Remarks
1	International third-level prize or above	10 hours/piece	The world's three major design awards and recognized international competition
2	International third-level prize or above	4 hours/piece	
3	provincial third-level prize or above	2 hours/piece	
4	Municipal third-level prize or above	1 hour/piece	

C. Instructors' Careful Organization and Guidance

The instructors clarify and rationalize the relationship between the competition and the goal of talent cultivation. On the one hand, they fully utilize project-based teaching

methods and encourage students to participate in related competitions. On the other hand, the diversified characteristics of product design specialty are combined to screen and select various design competitions. They should select the appropriate competition items and categories for

targeted guidance. The students have a focus. It is mainly reflected in the following aspects.

1) *To formulate a competition plan and hold a mobilization meeting:* After major events are announced, the product design professional will form a steering group. And they will organize students and relevant steering group members, and mobilize the meetings. The main contents of the mobilization meeting were to review the outstanding works of the previous competition and the achievements, to publish the theme of the competition, and the requirements for the competition, to answer the students' questions one by one, and to form student competition team. Through the mobilization meeting, the majority of students will understand the specific circumstances of the design competition and inspire students' interest in participating.

2) *To design competition and guide the training:* Around the specific design competition, the participating students were trained in the form of lectures. The main content was to take the competition requirements as the main purpose. The university would take the award-winning works of the design competition as typical cases. And the teachers would use discussion-type teaching, and cultivate students' innovative thinking, expand the students' ability to innovate, inspire the ideas of the participating students, and guide the participating students in the selection of the topics. It also regularly organizes student competition programs through various forms of competition counseling, such as analysis, discussion, and debate. The overall quality of students' entries can be improved. In addition, the submitted entries are organized and reviewed in the form of on-site reply. The members of the assessment team are experts and teachers with rich instructional experience in the teaching and research section. The entries are selected based on the subject of the competition, the category of the competition, and the innovation and operability. From the design level and other aspects of the design, it would select the next key guidance project works.

D. Extending the Discipline Competition Content, and Focusing on Results Data Management

Due to the level of the school and its disadvantages in the geographical areas, it is bound to have great restrictions on the development of the product design profession. The greater development of the product design professional discipline competition must go through the principle of going out. And it is possible to reduce the influence of school and geographical disadvantage on the development of discipline competitions.

In response to this reality, the product design profession actively participates in related discipline competitions. On the one hand, it actively links relevant organizers, institutions, and companies to introduce effective and targeted design competitions as far as possible. For example, it would strive for the 2015 Maritime Silk Road 10th souvenir design competition scholarships (a total of 3 schools nationwide funding), and actively strive to 2015, 2016, 2017 design new

forces international baby toys supplies design exhibition (National total 20 institutions), 2015 Fourth Global Stone Design Competition, New Furniture Design Competition in Hangzhou Bay and many other influential games and events. From these aspects, we will improve our product design to fully integrate into the current domestic design competition.

E. Focusing on Results Data Management

In terms of academic competition outcomes, this major has also taken certain measures to classify the results of discipline competitions to facilitate later reference and material review.

First of all, the results of each competition are announced. The department of product design will archive the materials of winning works, entries, and award certificates. Separately, the design works and certificates that have been awarded third-level prizes are sorted out to form reward application materials, which are turned over to relevant school departments for students to apply for awards.

Secondly, after the results of the major competition are announced, the use of the winning entries to hold thematic exhibitions will not only benefit the training of product design students' innovative quality and the creation of good cultural environment for the school, but also help lower grade students and other majors in the profession. Students understand the nature and content of the participating majors. They would have the opportunity to make the collaboration across the design competition.

Thirdly, for the winning of each competition, as long as the conditions permit, students are encouraged to attend the award ceremony and forum to improve the students' sense of honor. And the students would participate in the forum to expand their professional knowledge. If it is impossible to participate in the awards due to objective reasons, after retrieving certificates, trophies and other materials, the product design department will concentrate on arranging the trophies and certificates obtained this year at the end of the year for an award ceremony. Thereby, it would increase the influence of the awards as well as the enthusiasm of other students to actively participate in the competition.



Fig. 1. The product design major of Panzhuhua University won the organization award of 2017 International Pattern Design Competition.



Fig. 2. Students of the product design major of Panzhihua University participate in 2018 Jiqing Zodiac Design Competition Award.

IV. PROBLEMS IN THE DISCIPLINE COMPETITION IN THIS MAJOR

The professional has gone through several years of research and practice in the subject organization and guidance. It has also achieved a series of results. However, during the years of research and practice, some problems have been exposed. It is mainly reflected in the following aspects.

A. Lack of Incentive Policies at School and College Levels

Although there are certain incentives for design competition at the school level, relatively speaking, schools lack understanding of the design profession. And the incentive policies are limited. They are obviously suspected of differentiating. This can be seen in the Panzhihua University [2015] No. 54 document "Student Discipline Management Regulations in Panzhihua University".

First of all, the school has made great changes in the awards for students who have won the third-level prize or above. And reducing the incentive is also huge.

On the one hand, the schools meet the needs of the education and management departments. The relevant discipline competition organized by the Ministry of Education, Department of Education would be the focus. The repeated appearances in education management department would be the school leaders' sense of accomplishment. On the contrary, professional background games related to student's professionalism have been reduced by marginalization. From the introduction of new documents in 2015, it is evident that the school-level rewards to students are symbolic. It does not mean that students can achieve what they have achieved, but more of a formal demand.

The school depresses the standard for student awards to support the student's need to go out to participate in the competition. According to the requirements of the school's new documents, the total cost of a game above the provincial level is controlled within 20,000 yuan. However, this standard is also subject to the discipline. The standard is not a discipline that tends to organize effective discipline competitions, but is for other purposes.

In summary, the school (the competent department) has obvious differences in the design of disciplines and discrimination in arts competition.

On the other hand, at the art academy level, the encouragement policy for discipline contests is obviously incompetent. More often than not, the oral encouragement is required when competition outcomes are needed. And they are insufficient. In the past few years, with the efforts of teachers and students in participating in the competition, more than 20 outstanding organizational awards and excellent teaching achievement awards have been awarded to the school of the arts. However, there are no incentive measures at the college level. In addition to the absence of material rewards, the results obtained by the teacher-directed competition were not included in the evaluation system of relevant teachers. There is a situation of disunity among the academic discipline contest instructors. It is not to consider how to form a kind of synergy to strive for the conditions for the development of academic competitions in the school for the art school. It would consider their own personal gains and losses.

B. Lack of Product Design Professional Instructors

The product design profession is a newly established profession. In recent years, it has achieved certain results through various efforts. The problem of lacking teachers has not been fundamentally changed. It has also led to a serious lack of discipline competition instructors. This situation directly led to the lack of high-level academic competitions for product design students in the participating discipline competitions (such as international categories: Red Dot Award, IF Award, IDEA, Domestic Red Star Award, Channel Cup, etc.). In addition, due to the adjustment of the internal work of the profession, the newly appointed person in charge has limited ability to understand professional construction. At the same time, he fails to put the overall construction of the profession in the first place. And he does not hesitate to damage the overall interests of the profession for personal interests. These aspects are the most fundamental issues that restrict the higher development of our school's product design professional competition. If we cannot effectively solve this, it will inevitably affect the overall development of the discipline competition.

V. CONCLUSION

The current variety of design competitions effectively narrows the distance among design students, art colleges and universities, and companies and society. Students can participate in various competitions to have design and practice activities. And it effectively expands the practical teaching methods of design majors. Through years of research and practice in the product design profession of Panzhihua University, we have accumulated some successful experience in the effective use of design competition resources to promote product design practice teaching reform. And the practical innovation ability of our students has been significantly improved. This will not only improve the school's reputation, serve social enterprises, but also enable students to get a comprehensive exercise and lay a solid

foundation for future employment. Therefore, design competition as an available teaching resource is a good strategy for product design practice teaching.

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