

# An Empirical Study on Management Optimization of Undergraduate Design Link in Design Major—A Case Study of School of Art and Design of Beijing Institute of Fashion Technology

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## ABSTRACT

The undergraduate graduation design of design major is the most complex part of practical teaching in colleges and universities, which needs systematic and effective teaching process management to match it. This work took the School of Art and Design of Beijing Institute of Fashion Technology as the empirical research object, then adopted the user research method of design to organize the working mechanism and path of key users and identify key steps and requirements of different users, and finally summed up the pain point of the graduation design link system operation. Accordingly, systematic measures are taken to realize the quality control of graduation design and corresponding results have been achieved, so as to promote the overall improvement of undergraduate teaching quality.

**Keywords:** *Design major; Graduation design; Teaching management; Quality control; User research*

## 1. INTRODUCTION

Graduation design is a preliminary attempt for students to engage in design or creation independently under the guidance of their mentors. It is a process for students to systematize, integrate and deepen their knowledge and skills. It is also an important transition stage for students from school to work. Bachelor's graduation design is not only a comprehensive test of students' ability and training effect, but also the most important link [8] concentrated practical teaching of students in school. It is an important stage for the school to realize the training goal and teaching evaluation. It can be said that the proposition and quality of graduation design are inseparable from the teaching system and teaching ideas, and they promote each other. The support and attention to graduation design and exhibition in major design colleges and universities has only increased, and various graduation design exhibitions bring a lot of heat and topics.

The School of Art and Design of Beijing Institute of Fashion Technology continues to pay attention to the trend of design education, firmly promote the reform of teaching management system for design majors, take learners as the center, plan as a whole and fully coordinate the key points and elements of change, construct and upgrade the personnel training mode and curriculum system of colleges and universities, and innovate and develop effective paths for students' academic growth [10]. The college takes graduation design as an important means of teaching reform, analyzes the users and processes of graduation

design with the working methods of design, and explores and optimizes the effectiveness of quality control and teaching management.

## 2. CHARACTERISTICS OF TEACHING MANAGEMENT IN GRADUATION DESIGN OF THE DESIGN MAJOR

For design major, graduation design is an important teaching link to cultivate and improve students' creative comprehensive design ability. Under the guidance of teachers, students use design thinking and methods to investigate, analyze and study some problems to form a comprehensive solution process, and at the same time reflect the individual artistic style. In the process of graduation design, they can explore different levels of solutions, and then obtain an effective improvement of comprehensive ability. The graduation design cycle of design major is usually long, which needs systematic teaching management guarantee. At the same time, the teaching management process of graduation design also reflects the blind area of each link of teaching management, and promotes the restoration and upgrading of the teaching management system.

**2.1. Emphasizing the importance of the design process**

First, the graduation design of design major is to study a subject that needs relatively long-term exploration and practice. Under the guidance of teachers, students follow the process of updating iterative design works, and experience research and analysis of problems, the divergence and convergence of inspiration sources, the iteration of design ideas and solutions, and the deepening of final solutions [5] [7]. The originality of the design works is also reflected in the design process, which ensures the visibility and evidence of the design process, strengthens the academic moral education of students, and strictly prevents the phenomenon of plagiarism and similarity in graduation design. Therefore, in the graduation project opening, mid-term, defense and other links, the importance of process documents should be emphasized.

**2.2. Relationship between graduation design works and graduation thesis**

Teachers and students often pay more attention to the quality of design works, but lack time and energy for graduation thesis. In fact, graduation design works and graduation thesis are a whole and complement each other, completing the graduation project from different aspects of theory and practice. Strengthening the requirements of graduation thesis is helpful to guide students to think about design problems from a deeper level, accumulate strong theoretical support for the design scheme, and make graduation design more complete. Due to the limited contact of design students in writing papers in the previous professional learning process, they need more paper guidance, and they should be provided with knowledge guidance related to writing in the learning stage of professional courses.

**2.3. Displaying requirements of design works**

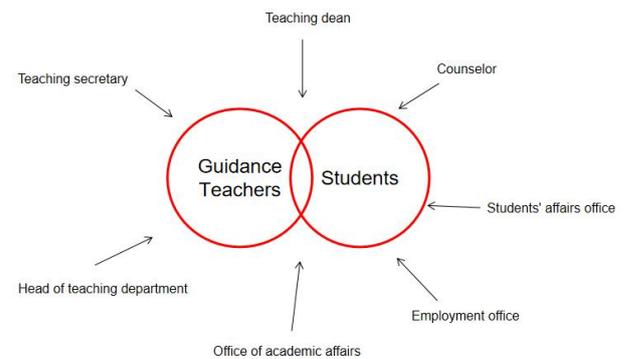
The importance of external display for graduation design works is self-evident. All design colleges and universities or majors pay great attention to the exhibition of graduation design works. For one thing, it is a bridge between the stage of students' works and the communication with the outside world; for another, it directly embodies the teaching value and teaching achievement of the school. The exhibition of graduation design works should not only be academic, but also keep in touch with the market and society, and also be interesting to some extent. It enhances the planning and implementation difficulty of the graduation project exhibition, and is also the most attractive teaching practice process.

**2.4. The evaluation criteria of graduation design is difficult to quantify and unify**

The design major has strong practicality and application, which is closely combined with the market, and it is also full of artistry and creativity. It is difficult to implement the quantitative and objective evaluation standard in the actual evaluation. Moreover, the design major covers a wide range, involving visual communication design, environmental design, digital media art, product design, clothing design and other professional fields, with different professional connotations. In view of the differences between these majors, it is difficult for a single evaluation method to be universally applicable. Due to the long period of graduation design, the choice of process evaluation and result evaluation is also one of the factors that need to be considered [2][3].

**3. ANALYSIS ON KEY POINTS OF TEACHING MANAGEMENT IN GRADUATION DESIGN OF DESIGN MAJOR**

**3.1. The "user" analysis of graduation design link**



**Figure 1.** "User" in undergraduate graduation design of design major

In the practical process of undergraduate graduation design, it includes not only students and guidance teachers, but also teaching management, student work related institutions and teachers' support and service. The working mechanism of all "users" acts together to form the system of graduation design. In the process of optimization, the needs and work contents of all "users" are fully considered to find the best solution path.

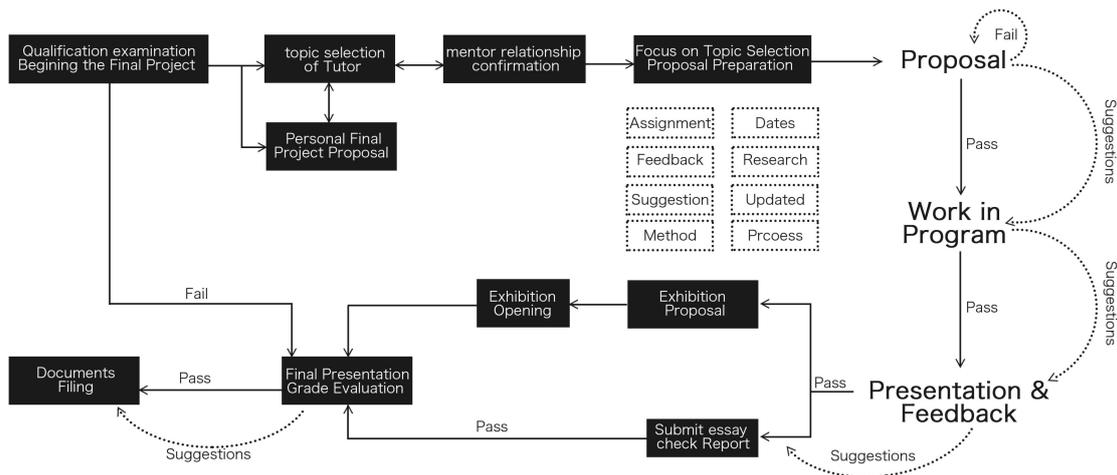


Figure 2. "Travel" diagram of graduation design for design students

From the perspective of students, the "travel" diagram of the above graduation design links is drawn. From the beginning of the confirmation of the guiding relationship between students and teachers, all the "travel" links of students can not be separated from the guidance of teachers, and the scheme is iterative and in-depth. Among them, the opening link are the mid-term inspection are the two centralized judgment process in the process of completion. Through organizing periodic reports, the overall progress of graduation design links can be grasped, and it is also a means of finding problems and correcting errors in time. Graduation defense is the final presentation of graduation design works and the final report of graduation thesis, creating a display platform for students and adopting a more comprehensive evaluation.

### 3.2. Analysis of the key steps of graduation design for design majors

In manufacturing, the definition of key processes refers to: first, the process that has a direct impact on the quality, performance, function, life, reliability and cost of finished products; second, the process that forms important quality characteristics of products; third, the process that is complex and volatile in quality, and the process that requires high skill or is always problematic. In the same way, this work defines the key steps of graduation design for design majors: first, the steps and processes that play a decisive role in the design work; second, steps and processes that reflect the teaching purpose of a school or college, and the steps that are generally recognized as highly important; third, links that need long period of time or preparation time; fourth, steps that are difficult to fine-tune, easy to get out of control, or always have more problems.

#### 3.2.1. Identification of key steps and "user" requirements

According to the definition of the key steps of graduation design, the key process is identified in order to make a detailed system scheme to effectively control it, so as to improve the teaching management level of graduation design.

Table 1. Identification of Key Steps in Graduation Design of Design Major

Key step factors	Corresponding steps in graduation design
It plays a decisive role in the quality of graduation design and the quality of the whole link	Topic selection; guidance relationship confirmation; process guidance; periodic inspection and evaluation
It embodies the teaching purpose of schools or colleges	Topic selection; process guidance; graduation exhibition
Maximum duration	Topic selection; process guidance; periodic inspection and evaluation; graduation exhibition
Steps that are difficult to fine-tune, easy to lose control or always have more problems	Process guidance; periodic inspection and evaluation; summary material filing

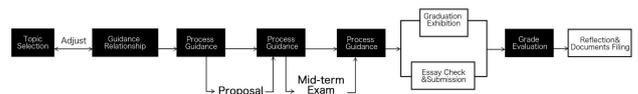


Figure 3. Identification of key steps in undergraduate graduation design for design majors

In the whole chain, the key links that really play a decisive role in the quality of graduation design include the selection of topics, the confirmation of the guiding relationship, the

process guidance, the periodic inspection and evaluation (thesis proposal, mid-term) and the evaluation of achievements. It is also the stage in which teachers and students invest their maximum energy and need the system support and guarantee.

**Topic selection:** it focuses on whether it meets professional training objectives, whether it is diversified, innovative, and whether it takes into account social needs.

**Guidance relationship confirmation:** students and guidance teachers make two-way choices, and fine-tune graduation design topics according to students' actual situation and demands. The matching degree and satisfaction degree of teachers and students are the measurement indexes.

**Process guidance:** throughout the whole process of graduation design. Whether teachers and students can communicate and feedback effectively, and make clear the path of executable modification and perfection on the basis of achieving the stage goal. It should ensure the complete record of the graduation process and take it as the basis of graduation project evaluation, so as to realize the whole

process monitoring. At the same time, it also accumulates original materials for teaching research.

**Stage inspection and evaluation:** it usually includes thesis proposal defense, mid-term defense link, a wider range of evaluation of the design process, and timely error correction. As the process evaluation, the results of the final graduation defense are supplemented and compared.

**Grade evaluation:** it constructs a scientific and quantitative evaluation system to meet academic standards and ensure the accuracy, objectivity and fairness of the results.

### 3.2.2. Analysis of "user" requirements of the key link of graduation design

Through the concrete work experience of graduation design teaching management, the "service blueprint" for the "subject user" in the key links of graduation design for the above design majors is summarized as shown in the following figure.

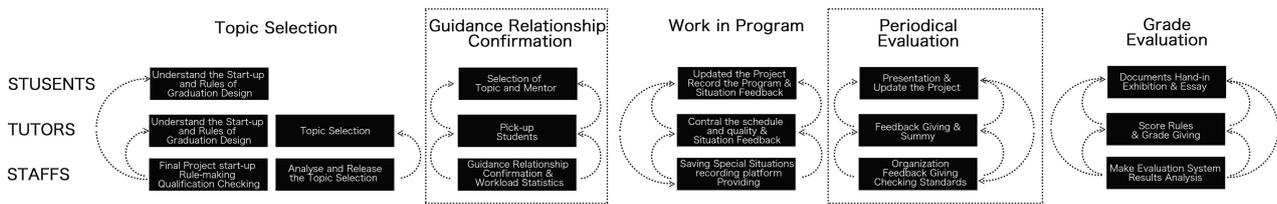


Figure 4. The "service blueprint" of the main user of the graduation design link of design major

Through the concrete work experience and review of graduation design teaching management, the author investigates teachers and students many times, and analyzes

the actual needs of different "users" in the key links of graduation design.

Table 2. The "user" demand analysis of the key steps of graduation design

Key steps	Requirements of student	Requirements of guidance teachers	Requirements of teaching managers
Topic selection	Meet majors and interests	In line with the field of academic research	Reflect school orientation and academic opinions
Guidance relationship confirmation	High level of matching	High matching degree, moderate number	High level of matching; Determine in a timely manner and maintain stability
Process guidance	Smooth communication; Modify the path explicitly	Smooth communication; Outstanding periodic achievements	Process visualization; Timely and effective monitoring
Periodic inspection and evaluation	Objective and fair; adequate preparation time, effective feedback on results and recommendations	Simplify process; Effective feedback of results and recommendations	Reasonable organization plan; Scientific quantitative evaluation system
Result evaluation	Accurate, objective and fair	Accurate, objective, fair, and simple	Reasonable organization plan; Scientific quantitative evaluation system

### ***3.3. Analysis on the pain points of teaching management in the key links of graduation design for design majors***

Through the interview and continuous attention to the graduates of graduates majored in design, the guidance teachers and the teaching managers in different positions, the main pain points in the key links of graduation design in the past are as follows:

- When the graduation design link starts, it lacks the clear rule which runs through the entire process.
- In terms of teachers and students' attitude towards graduation design, students' initiative is insufficient.
- Guidance teachers' professional limitations and subjective judgment.
- Whether the evaluation criteria is scientific, objective and comprehensive.
- The preparation period of centralized reporting or periodic inspection is short and lack of planning
- Whether the topic is reasonable, whether it represents the idea of running a school; the persistence of graduation project is insufficient
- The design major graduation design cycle is long, how to strengthen the positive impact on graduates and teaching

## **4. OPTIMIZE THE MEASURES AND RESULTS OF GRADUATION DESIGN**

All along, the School of Art and Design of Beijing Institute of Fashion Technology has been combing and perfecting the work flow of graduation design. After years of experience analysis and review of the teaching and management process of graduation design, the reform and attempt of multiple levels and forms are adopted. In the past ten years, the key pain points of graduation design are constantly corrected by systematic methods.

### ***4.1. Unifying the consensus between teachers and students and arouse students' enthusiasm for graduation***

The graduation link is an important link in the cultivation of students. In order to fully implement the educational policy, formulate scientific and reasonable requirements for overall arrangements for graduation. "Design responds to the needs of society, design explores the way of life, design thinks for the future" is the direction of exploration and practice.

Each year, the college launches the graduation design for all teachers and students, and elaborates on the theme, overall requirements, process management and work plan

of the graduation design. Graduation design works exhibition will be held every year, so that all students' creative achievements will be respected and presented in a complete way. Students of all grades will be invited to the exhibition for exchange. Since 2008, the college has held a graduation exhibition in famous exhibition places inside and outside the school for more than ten years, which has become one of the most concerned graduate exhibitions in China. At the same time, great efforts have made to produce graduation design portfolio, and "Graduation design portfolio of 2018" won the award of RedDot: Best of the Best.

### ***4.2. Setting up the topic selection into the overall framework of social and national development, and continuously establish the topic selection database***

The topic selection is directly related to the quality of graduation design and thesis. First, it should conform to the goal of professional training. The depth and difficulty of the topic selection should be moderate and attractive to teachers and students. Teachers and students should be guided to choose the topic of graduation design based on the national development strategy, the people's good life and the future development trend of human beings. In the fashion and creative culture industry, designers should have social responsibility and global vision, and students should be equipped with social responsibility and future-oriented systematic thought.

For example, led by the department of environmental design, it has been continuously exploring the innovative mode of cross-disciplinary practice teaching, and designed to help the targeted poverty alleviation project in rural areas, so as to receive continuous attention from the Ministry of Education, The Ministry of Agriculture and People's Daily, forming social and economic benefits.

Each year, the selected topic will be consulted by all teachers under the major theme and checked by the academic committee of each major and college. Since 2014, teachers are encouraged to form cross-professional graduate teams to ensure the creation of valuable topics. The cross-professional graduation work plan and scoring standard have been formulated. Each year, the cross-professional topics have become the focus of the exhibition. There are not only topics of top-level design, but also topics selected by students according to their own strengths and interests.

The college establishes the undergraduate graduation design topic database year by year, and carries on the topic selection analysis. On one thing, it shows the whole picture of teachers and students' design topic focus and forms a precious knowledge map; for another, it helps to set up a team and continuously incubate the results.

### ***4.3. Improving process management, and continuously optimize graduation design teaching management***

The graduation design link is the outbreak point of students' teaching administration and even psychological problems. The college has always adhered to student-centered teaching improvement. College study center is set up, in which teaching administration operation and student affairs cooperate with each other, and problems can be discovered and solved synchronously.

The college carefully combs all the documents and work flow of graduation links, and further closely links the graduation design with the graduation thesis double line. In view of the past problems of the graduation thesis, the format of the graduation thesis can be standardized to write relevant content writing guidance content, so as to enhance the usability of the thesis in the process.

The Graduation Work Manual should be designed and produced, and the theme of the exhibition interpretation as well as process requirements are clearly expressed. All the important nodes in the graduation process are accurate to the date, and the college's work arrangement and teachers' time management should be centered on undergraduate teaching. The manual is provided to students to record the progress of graduation work and teacher guidance, and to teachers to record guidance and accumulate raw materials for teaching research. The whole process monitoring of graduation link is realized by means of project management and grid management, and the front of quality control is effectively achieved.

It is necessary to establish a comprehensive, scientific and effective evaluation system, combine the process evaluation with the result evaluation, and confirm the final graduation defense results through the suggestions and conclusions of the process record manual, the opening question and the mid-term periodic inspection link. In order to avoid the professional limitations of different teachers, industry experts are invited to participate in the defense committee from an independent perspective. At the same time, the summative evaluation is changed into expressive evaluation and developmental evaluation. During the graduation season, the "Green Fruit Forum" was launched, inviting young designers, industry experts and young teachers to talk about design issues. The "Qingguo Forum" is student-centered, trying to listen to and discover students' creativity and reflect on the public platform of teaching and talent training concepts.

At the end of each year's graduation design, the college organizes different levels and different ways of reviewing work to pay continuous attention to the quality of the finished works, the problems of the management links, and the advantages and disadvantages of professional teaching, so as to take measures to optimize them.

### ***4.4. Enhancing the internationalization and influence of graduation design results, and simultaneously promote students' employment and entrepreneurship***

In the process of graduation design, it is necessary to strengthen the integration of frontier teachers to enhance the ability of teaching, attract outstanding teachers from the top enterprises and innovative institutions to enter the graduation design guidance team. From curators, graduate tutors and youth think tanks, international resources are introduced to establish the global context of teaching.

It is necessary to develop a one-stop "graduation design work customization system" to customize personal portfolio for each student. It should use online and official publication, multi-channel publicity, transformation and research, so as to make the graduation design process and results sustainable and optimized development

It is necessary to encourage graduation design topics o cooperate with enterprises, and build a practical base with enterprises. At the same time, it is necessary to give full play to professional advantages, encourage graduates to innovate and start their own businesses, take graduation design projects as the starting point, and find ways and channels to support and help students succeed in employment and entrepreneurship.

It is necessary to assist outstanding graduation design works to apply for utility model and appearance patent, and realize achievement transformation.

The college builds the graduate display and promotion platform to integrate the graduate information in the way of data, vision and information. Students constantly improve their work information and enhance the attention of employers in the process of completion and creation.

## **5. CONCLUSION**

The quality of graduation design works and exhibitions directly reflects the level of professional teaching in schools, verifies the effectiveness and achievement of talent training programs, and is also most likely to expose problems. This work conducts "user analysis", "key step analysis" and "pain point analysis" on the teaching management of graduation design of design majors. On this basis, the School of Art and Design of Beijing Institute of Fashion Technology has been constantly optimizing the process of undergraduate graduation design and summarizing practical experience in order to form a certain reference value. Certainly, these achievements have their own characteristics, and other institutions have also accumulated more effective reform experience. Extensive exchanges and mutual learning can further promote and improve undergraduate graduation design work.

Optimization of undergraduate graduation design is a continuous process, which needs to be discussed and improved in many directions, for example, through the problems found in the process of graduation design, problems such as optimizing the teaching concept, teaching

organization methodology and working mechanism of undergraduate education can be solved; the process of graduation design should be informationized, institutionalized, standardized and instrumented to solve the problem of improving the quality standard of practical teaching; the scientific and effective evaluation system and scoring rules should be constructed; the intelligent learning management platform should be built; the intellectual property rights should be defined to promote the transformation of graduation design works; the management and graduation exhibition of graduation design links in the post-epidemic era.

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