

Study on the evaluation of undergraduate graduation design marks in architecture department based on whole-process management—— Take the Department of Architecture of Tibet University as an example

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ABSTRACT

This article takes the Department of Architecture at Tibet University as an example to explore a comprehensive evaluation standard for undergraduate graduation design projects based on whole-process management. It introduces process scores into the existing composition of grades, which includes evaluations by advisors, cross-evaluations, and final presentations, to build a more robust system for assessing thesis project performance. The article also proposes introducing a mid-term blind review system during the design process to enhance supervision over both advisors and students, thereby improving the quality of design projects and achieving holistic education throughout the entire educational period.

KEYWORDS

whole process management; graduation design; grade

Graduation design project is the best practical opportunity for undergraduate students to transition from the learning phase to the work phase, profoundly impacting their ability to work independently^[1]. Graduation design project represent the final stage of education and teaching in architecture-related higher education institutions, and it is also a crucial part. This stage not only summarizes the five years of study but also comprehensively evaluates the quality of student learning, determining whether they can graduate on time. It is also a reflection of the educational quality of the institution and the ability of the students it produces. For majors such as Architecture and Urban-Rural Planning, graduation projects assess students mastery of foundational professional courses and specialized courses, as well as their ability to integrate this knowledge into design practice. The quality of undergraduate graduation projects directly reflects the overall competence and comprehensive abilities of students^[2].

To achieve the set training objectives and enhance students competitiveness in employment, various architecture universities place great emphasis on their graduation projects and have conducted extensive research and practical work to improve the quality of these projects. They continuously apply new technologies, concepts, and models to reform teaching methods and management practices, thereby enhancing the quality of graduation design projects. Professor Lu Yaqin from Guizhou University has conducted in-depth research on the graduation projects of architectural engineering majors at her institution, proposing reforms such as establishing a standardized question bank for graduation projects, standardizing design content, and scientifically evaluating design outcomes to cultivate students ability to apply theory to practice^[3]. Chen Kesong et al., from the teachers perspective, proposed ideas for optimizing the process of undergraduate graduation design projects^[4]. Wang Ye et al., considering the foundation of engineering students and the current status of professional settings at their institution, proposed new ideas for guiding undergraduate graduation projects in engineering institutions that emphasize both process and quality^[5]. Zhang Jinping et al., analyzed issues in undergraduate graduation projects from three aspects: design topic selection, organizational management, and assessment mechanisms, and proposed solutions to increase institutional attention, enhance the sense of responsibility among instructors, and strengthen students interactive communication skills^[6]. Tian Ruifeng et al. from the School of Architecture at South China University of Technology explored new models for architectural graduation projects under the background of "New Engineering" construction The model of "industry-academia-research" cooperation is led by teaching on elderly care buildings, covering aspects such as topic selection, teaching framework, and feedback mechanisms^[7]. Xu Hao et al. explored the trend towards diversification in graduation project types, proposing digitalization and paperless solutions for managing graduation projects^[8]. Peng Jianguo et al. analyzed the issues present in graduation projects of architecture majors at local universities, and from the perspective of cultivating core competencies in architectural talent, proposed strategies to improve the quality of graduation design projects, enhancing the quality of graduation project topics, improving the capabilities of advisors, inviting technical professionals to participate in guidance, establishing an elimination mechanism for graduation projects, and strengthening management and evaluation of graduation projects^[9].

In order to achieve the goal of characteristic education in Tibet University and cultivate "reliable, applicable, stay and do well" applied talents, and meet the requirements of undergraduate professional evaluation in architecture and urban-rural planning, in the teaching practice of undergraduate graduation design in the Department of Architecture of Tibet

University (hereinafter referred to as our university).

1 Analysis of the current situation of graduation design in architecture department

The Department of Architecture at Tibet University admits students nationwide, but the two majors in our department, Architecture and Urban-Rural Planning—primarily recruit students from within the Tibet Autonomous Region. Each major admits new students at a ratio of approximately 3:2 (students from within the region to those from outside). If there are insufficient numbers of students from outside the region, we will increase the proportion of students from within the region. A significant portion of our internal students come from rural areas, with a smaller number coming from urban areas within the region. The unique composition of the student influences the special nature of their career choices and employment. Additionally, due to the timing of the graduation project course—the period before graduation and departure—it is one of the key factors affecting the quality of the graduation project. The long duration and lack of strict supervision during the entire graduation project process lead to a certain degree of complacency among both teachers and students. Furthermore, multiple factors such as civil service exams and graduation internships interfere with the final outcome, resulting in unsatisfactory graduation project results: 1) Inconsistent design scales, varying in size. Some graduation projects are too small to meet the required workload; others are overly large, exceeding the expected workload. 2) Lack of logical development in student design proposals and insufficient depth in drawings. 3) Absence of a scientific evaluation mechanism, often relying heavily on on-site presentations. 4) Loose process supervision. 5) Inadequate archiving of design outcomes. The requirements are not clear. Comprehensive analysis shows that the main reasons for the above problems are as follows.

1.1 The time arrangement of graduation design is not appropriate

Due to the significant climate differences between Tibet and other part of the country, the scheduling of teaching activities does not align with other universities. Our graduation project spans two nature years, seven months in total, but it is interspersed with a winter break of two months. This has led to a certain degree of complacency among students and their advisors. Additionally, factors such as civil service exams and graduation internships have interfered with the process, resulting in less than satisfactory outcomes for the graduation projects.

1.2 Lack of teachers for guidance

Our Department lacks teachers, only 11 teachers meet the qualifications for design advisors. To guide nearly 60 graduates, some teachers have to mentor about 8 students on average, approaching the threshold required for undergraduate evaluation but exceeding the schools limit of 6. Such a large number of mentors directly affects students creative enthusiasm, ultimately impacting the quality of their graduation projects.

1.3 The composition of graduation design marks is simple

The graduation design score consists of three parts: the score from the instructors evaluation, the cross-evaluation score, and the final presentation score, which is relatively simple. Among these, the final presentation score accounts for 40% of the total score, the instructors evaluation score accounts for 40%, and the cross-evaluation teachers score accounts for 20%.

2 Evaluation criteria for graduation design results throughout the whole process

Based on the above problems and the management experience of mainland universities, this paper puts forward a graduation design evaluation mode based on the whole process management, and carries out the whole process management of graduation design, including all stages involved in the composition of grades, so as to supervise and guide teachers and graduates.

2.1 Strengthen the whole process of time management

Given the inability to adjust the teaching schedule, it is unlikely that there will be significant changes in the graduation project timeline. Therefore, the only option is to make minor adjustments to the timeline and enhance management between advisors and students during holidays, aiming to maintain the continuity of the entire design process and minimize interruptions. As a result, both the topic selection time and the finalization of topics were moved forward by one

month, allowing students sufficient time for preliminary research and literature review. They are required to complete their proposal reports by the end of December and submit them online. During the winter break, advisors are required to provide at least 1-2 online sessions of guidance for each student, with corresponding records. Advisors will conduct regular checks on the progress of the graduation projects, point out issues and offer suggestions, and urge students to make necessary corrections. The advisory records serve as the basis for evaluating students scores in subsequent stages and for determining eligibility for blind reviews, accounting for 10% of the total score; they also serve as one of the criteria for assessing teachers workload.

2.2 Quantitative evaluation of the whole process

Quantitative Topic Selection. After in-depth research on the employment directions, industry requirements, and professional qualification exams for architecture and urban-rural planning, as well as multiple discussions within the project team, a consensus was reached on the design scale for both majors. The requirements and scales were set according to the subjects of each majors professional qualification exam. For example, the architectural scale for the graduation project in architecture is around 5,000 square meters for public buildings, with an allowable fluctuation of 10% based on functional needs. For urban-rural planning, considering the current compilation requirements at different levels of planning in China, it is recommended that instructors control the site area to about 5-10 hectares, and the site selection must be within the administrative boundaries of the Tibet Autonomous Region. Topics selected by teachers after discussion in the teaching and research office will only be made available to students if deemed qualified. This section accounts for 10% of the total score.

Quantify the guidance process. To alleviate the shortage of qualified instructors, we will build a "dual-qualified" and "team-based" instructor team. We encourage graduates to form "dual-qualified" guidance teams with their internship supervisors and school teachers, as well as junior-level teachers assisting senior-level teachers to form on-campus "dual-qualified" guidance teams. Additionally, for masters thesis advisors, they can leverage their senior graduate students to form "team-based" guidance teams to assist the main instructors. All guidance processes must be documented; guidance records serve as criteria for evaluating students final scores and eligibility for blind reviews, accounting for 10% of the total score; they also serve as one of the bases for assessing teachers workload.

Quantify the responsibilities of teachers. Clearly define the duties of thesis advisors, implementing a system where advisors are responsible for the entire thesis phase. Advisors must take full responsibility for all teaching activities during this period. Their main responsibilities include: Proposing topics. Select suitable research directions for undergraduate students, refine thesis topics, draft task lists, and develop guidance plans and teaching procedures. Delivering thesis task books to students on time, setting specific learning and research requirements, specifying primary references and social survey content, and assisting students in preparing their proposal reports. Providing at least 1-2 offline or online (during winter break) sessions per week to guide and answer questions about the thesis, regularly checking progress, addressing issues and offering feedback, and urging students to make necessary corrections. Guiding students to write their theses according to the task book and the "Tibet University Undergraduate Thesis Writing Standards." Reviewing all materials related to the thesis and carefully writing comments from the advisor. Promptly identifying and correcting academic misconduct by students, and reporting to the college if necessary to disqualify them from defending their theses. This part is the main basis for evaluating teachers later workload.

Quantify the depth and content of submitted work. Previously, our schools architecture department often focused more on the design itself, with an incomplete integration of knowledge. For example, when designing buildings, there was often a concentration on refining the building itself and studying its form, while neglecting aspects such as outdoor environment creation, energy-saving technology utilization, and the connection between surrounding roads and sites. The graduation project is a test of students comprehensive application of knowledge. Whether in architecture or urban-rural planning, the graduation project is a crucial phase in the undergraduate curriculum that evaluates students ability to integrate basic knowledge and design skills. The requirements and outcomes of the graduation project are higher than those of regular design assignments. It requires students to apply their learned knowledge, conduct comprehensive research on current conditions, analyze problems objectively and comprehensively, and draw lessons from similar cases to find solutions for their own design proposals. During the graduation project process, students not only need to design physical spaces but also integrate analyses from multiple perspectives such as social, economic, and industrial aspects, explore the factors contributing to problem formation, and propose integrated solutions that truly reflect the systematic and comprehensive nature of their design proposals.

Based on the above analysis, the depth requirements for graduation projects in architecture must meet the industry-defined "scheme design" depth requirements. The depth requirements for graduation projects in urban and rural planning must comply with the regulations set by various levels of planning compilation in the industry. The requirements for graduation project outcomes in architecture must satisfy two main components: master plan design

drawings & architectural design drawings. The requirements for graduation project outcomes in urban and rural planning must include: planning texts and attachments, as well as planning explanations and basic data included in the attachments.

The list for archiving and submitting graduation project results is as follows: Physical Archives: Two A1 extended color display boards, one A3 design text bound with adhesive, and one graduation thesis printed according to school requirements; all physical archives must be bound, printed, and named as required. Electronic Archives: All submitted physical files must also be submitted as electronic archives, all in PDF format; all electronic documents must be burned onto CDs. This section accounts for 30% of the total score, primarily supervised by the instructor who will check the completeness of the results and provide a grade for this part, which is reflected in the instructors evaluation score.

Quantify the graduation presentation report. Students participating in the graduation project return to school in March, after which the teaching and research office organizes teachers to conduct a mid-term review of the design, confirming whether students have completed the required workload by this point. If they meet the standards, they can proceed to the next stage of the design. If not, the department head will hold a meeting with both the student and their advisor for bilateral supervision. One week before the formal defense, students must submit their design works to the department for blind review. If the quality and depth of the design meet the requirements for the graduation project, it can pass the blind review and enter the formal defense. Additionally, to qualify for the defense, students must also pass the plagiarism check on their preliminary thesis submitted earlier. If the preliminary thesis fails the plagiarism check, the students eligibility for the graduation project defense will be revoked.

If a student who has passed the blind review performs poorly during the defense and the text quality is not high, after scoring by the defense panel, they must further revise and improve their text to achieve a passing score of 60 points before participating in a second defense. Such students must make revisions according to the feedback form to enter the second defense; otherwise, they will lose the opportunity for the second defense and will not graduate this year.

In the final presentation, students must provide a fifteen-minute PPT, two A1 extended color display boards, one A3 text in glue binding, and one graduation thesis printed according to school requirements. This part accounts for 30% of the total score.

The final grades for the graduation projects of two majors in our schools Department of Architecture consist of five parts: scores from the instructor evaluation, cross-evaluation, project defense and presentation, guidance process, and topic selection. The detailed composition of the grades reflects the process supervision. Specifically, topic selection accounts for 10%, the guidance process accounts for 10%, the project defense and presentation account for 30% of the total grade, the instructor evaluation accounts for 30% of the total grade, and the cross-evaluation by instructors accounts for 20% of the total grade.

3 Implementation effect of the evaluation standard mode of graduation design based on whole-process management

Through the comprehensive management of the entire process of graduation design for two majors in our Department, this study examines the composition of graduation design grades. The research findings were applied to the teaching process of the "Graduation Design" course for the year 2022,2023, and 2024 Architecture and Urban Planning students, conducting an initial experimental teaching attempt. After three phases of practical management in graduation design instruction, it was found that students enthusiasm, initiative, and interaction between teachers and students have all improved. Analysis of 149 anonymous questionnaire (covering all graduates from three grades and two majors) revealed that students generally had a positive response to the course. 75.31% of students believed that the full-process control enhanced their communication with advisors, improved design quality, and provided a clear sense of knowledge gain.

Through the research on evaluating undergraduate thesis projects in the Department of Architecture via comprehensive process management, it has been found that systematic management of graduation projects for two majors in the Department of Architecture can play a certain promoting role. It clarifies the content, depth, and corresponding time nodes required at each stage of the graduation project. It plays a leading role in accurately grasping the depth, difficulty, and comprehensiveness of the graduation project content, avoiding issues of fairness caused by inconsistent design requirements from different advisors. It facilitates subsequent undergraduate evaluations, major assessments, and discipline construction for both majors in the department, laying a solid foundation. Controlling the entire process of the graduation project and setting work requirements according to evaluation standards. It serves as a supervisory and promoting factor for faculty members in the department. It helps graduates complete their graduation projects successfully, thereby graduating on time. Setting minimum standards ensures that meeting these standards qualifies one for graduation. This model can not only be directly applied to practical teaching of graduation projects in

various majors within the Department of Architecture but also extended to other majors with graduation projects, such as transportation, civil engineering, and art design, offering significant reference value.

4 Conclusion

Through the research and practice of evaluating undergraduate thesis projects in architecture over a three-year period, both teachers and students have achieved dual development and supervision. For teachers, the comprehensive management and evaluation process standardize and quantify the teaching process, making it easier for them to provide better and more direct guidance, while allowing for a full understanding of the students thesis progress. For students, this model enhances their self-study abilities and provides a more comprehensive understanding of the composition of their graduation project scores. For the school, it increases the seriousness of the graduation design course, contributing to the improvement of student training quality.

Funding

Funding "Research on the Evaluation Criteria of Undergraduate Graduation Design in Architecture Department Based on the Whole Process Management" (XZDXJXYJ202108), a university-level teaching research and reform project of Tibet University

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