Academic Education Publishing House

Occupation and Professional Education Vol. 2 No. 6, 2025

Exploration of the Application of Applied Teaching Mode in Undergraduate Thesis Writing Courses: Taking the Engineering Cost Major as an Example

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Abstract: The current teaching status of undergraduate thesis writing courses is that the teaching content is highly theoretical, which cannot meet the actual needs of students. Taking the engineering cost major as an example, this paper introduces the applied teaching mode into the undergraduate graduation thesis writing course, analyzes the necessity of curriculum reform in detail, then expounds the reform path from three aspects: teaching content, teaching method and assessment method, and finally puts forward the expected teaching effect of curriculum reform. The reform ideas proposed in this paper can improve the practicality and interest of the course content, so as to stimulate students' interest in learning and cultivate students' ability to write papers and solve problems independently.

Keywords: Undergraduate Thesis; Applied Teaching; Curriculum Reform; Engineering Cost Major

1. Introduction

As an important teaching link in the process of university talent training, undergraduate graduation thesis is a key link in connecting classroom learning and practical application, and an important indicator to test the quality of education[1]. In order to help students improve their core scientific research skills such as literature retrieval, logical reasoning, and thesis writing, so as to successfully complete the writing of graduation thesis, many universities offer graduation thesis writing guidance courses. However, there are still many problems in students' graduation theses, such as outdated topic selection and lack of innovation, imprecise thesis structure, poor writing standardization, etc., indicating that the quality of graduation design needs to be improved[2]. This also reflects that there is still room for improvement in the teaching of the current thesis writing course, and curriculum reform is imperative.

The major in construction cost is an interdisciplinary field that integrates engineering technology, economic management, and legal norms, with a strong emphasis on practical applications. The writing of undergraduate theses must be based on real projects, balancing technical analysis with economic logic, to achieve the dual objectives of academic training and engineering practice[3]. Most of the current graduation thesis writing courses focus on theoretical teaching, which is difficult to meet the practical requirements of students, but the introduction of applied teaching mode can provide a feasible way to solve this problem. The applied teaching mode takes cultivating students' practical ability as the core goal, emphasizing the deep integration of theoretical knowledge and practical application, so that students can flexibly apply the knowledge they have learned to production practice[4]. This paper will elaborate on the teaching reform of the graduation thesis writing course of engineering cost from three aspects: the necessity of reform, the reform path and the expected teaching effect.

2. The Necessity of Curriculum Reform

2.1 The Dilemma of Traditional Teaching Mode

The graduation thesis writing course of engineering cost major aims to cultivate students' innovative thinking and practical ability to analyze and solve problems, so that students can systematically master the skills and specifications of thesis topic selection and writing, so as to lay a solid foundation for students to successfully complete their graduation thesis. At present, the course still adopts the traditional teaching mode, and there is a structural contradiction of emphasizing

theoretical explanation and neglecting practical application, which can no longer meet the current teaching needs[5]. Specifically, it is manifested as:

(1)The teaching content is too theoretical. Most of the reference textbooks in this course introduce theoretical knowledge related to thesis writing, and most of the teachers' teaching content is also theoretical knowledge explanation, and practical teaching is relatively lacking. For students majoring in applied majors, it is difficult to flexibly and effectively apply the knowledge they have learned to thesis writing when writing their graduation thesis, which leads to many problems in the thesis.

(2)The teaching method is solidified, and the classroom is relatively boring. The knowledge involved in this course is relatively wide and academic, and the teacher teaches mostly in the one-way transmission mode of classroom lectures, explaining the writing methods and requirements of each component of the graduation thesis, while students passively accept the knowledge. For students who are exposed to thesis writing for the first time, it is difficult to form a complete and coherent knowledge system, and it is difficult to deeply understand the important and difficult knowledge of the course, resulting in low student participation and inactive classroom atmosphere, which affects the teaching effect of the course.

(3)The assessment method is relatively simple, and the evaluation system deviates from the ability orientation. The assessment method of the course is to write academic papers at the end of the semester, but some students perfunctory complete the assessment by copying existing literature and fabricating data, who has not mastered the method of writing papers. The single assessment method ultimately leads to ignoring the original intention of cultivating students' ability to solve practical problems, so it is difficult to achieve the requirements of talent training goals.

In summary, due to the high degree of theorization of teaching content and the single teaching method and examination method, students' participation and enthusiasm are not high, which seriously affects the teaching effect.

2.2 Advantages of Applied Teaching Mode

The applied teaching mode takes "practice-oriented and ability training" as the core, which can effectively solve the dilemma of the traditional model and has good adaptability to the graduation thesis writing course of engineering cost:

(1)The teaching content highlights practicality and realizes the deep integration of theory and industry needs. The applied teaching mode is guided by "solving practical problems" to build a course content system, transforming abstract writing theory into specific tasks that fit professional practice, and introducing practical engineering cases as teaching materials to make papers a theoretical refinement of the practical process, so as to cultivate students' ability to solve practical problems.

(2)Diversified teaching methods stimulate students' interest in learning. The application-based model adopts interactive teaching methods such as case-based teaching, project-driven, and situational simulation to stimulate students' interest in learning, enhance students' sense of classroom participation, and improve teaching effectiveness.

(3)The assessment methods are diverse and three-dimensional, and the evaluation system accurately matches the ability orientation. The application-oriented model adopts the assessment method of "procedural assessment and final assessment", and comprehensively cultivates students' ability to use professional knowledge to solve practical problems through a multi-dimensional evaluation system.

3. The Path of Curriculum Reform

The applied teaching model is a teaching paradigm that focuses on cultivating students' practical application ability and problem-solving ability, emphasizing the transformation of theoretical knowledge into practical skills, driving the learning process through real scenario tasks, and guiding students to master the logic of knowledge application in practice[4]. The introduction of the applied teaching mode into the graduation thesis writing course aims to cultivate students' problem-solving-oriented writing ability and academic writing transfer ability, that is, students can put forward actionable suggestions for specific engineering cost scenarios when writing graduation thesis, and can also transfer the skills mastered in the process of graduation thesis writing to professional practice scenarios.

3.1 Deconstruct the Essay Writing Process

and Embed it in Professional Scenarios

The main content of the course is divided into five modules: "topic selection→ literature review→ outline formulation→thesis writing→ thesis revision", and embedded in the explanation of each module related scenarios of engineering cost major, so that students can master the complete thinking process in the learning process of specific sub-tasks one by one[5].

(1)The topic selection module focuses on training students' writing skills to transform professional problems into academic problems. For example, students are required to submit three topic selection plans in their professional fields, explaining the value and feasibility of the research, and searching for at least 15 relevant literature in the past five years to support the topic selection.

(2)The literature review module develops students' critical integration skills of professional literature. For example, with a hot issue in the engineering cost industry as the theme, students are required to complete a 5,000-word summary within the specified time, pointing out the unsolved problems of existing research and possible future development directions.

(3)The essay writing module strengthens students' writing logic. For example, based on the feasibility study of an actual engineering project, students are required to write in a logical way such as a three-paragraph template of "data reference→analysis→ conclusion".

3.2 Teaching Methods are Diversified

3.2.1 Case-based teaching

Case-based teaching is based on practical problems, and through the explanation and analysis of real cases, students can effectively apply the knowledge they have learned to professional practice situations, The use of real cases for teaching is conducive to students' active participation in teaching activities, and cultivates students' ability to use professional knowledge to solve practical problems and the ability to think and solve problems independently[6]. When teaching practical content such as literature search, reference annotation, graduation thesis writing skills and requirements, the case teaching method is adopted, and the graduation thesis under the real guidance of the lecturer is used as a teaching case, so that students can effectively master the relevant knowledge and apply what they have learned. Teachers can also collect typical problems that have occurred in the writing of previous students, establish a database of typical problem cases, integrate relevant cases in classroom teaching in a timely manner, and deepen students' understanding of relevant thesis writing methods by comparing problem samples and modified model texts.

3.2.2 Project-driven teaching

Project-driven teaching follows the concept of "student-centered and problem-based". In the teaching process, teachers put forward challenging questions in the form of projects, taking problems as the starting point of teaching, students seek solutions through independent cooperation and exploration, thereby cultivating their autonomous learning ability[7]. In the teaching process of this course, the general project is "completing a qualified graduation thesis", which is divided into 5 phased tasks: "topic selection → proposal → first draft → revision → defense". A relevant task is assigned in each phase, which is completed by students in groups or independently. The final results are presented in the form of group reports, and teachers guide students in the process of the project as academic mentors.

3.2.3 The interactive classroom of "mock defense and paper evaluation"

In the middle of the course, a mock defense is organized, and students are randomly selected to form a "defense committee", and questions are asked about the content of the report after the students report the content of the paper, simulating the real defense scenario. In this process, students are trained on how to explain writing ideas in oral language and how to quickly identify argumentation loopholes, lay a logical foundation for subsequent written writing, and also let students be familiar with the process of formal defense and master common defense skills, so that they can logically display the key content of their thesis in the future formal defense process and successfully pass the graduation defense[8].

After students submit their course papers, carry out "paper mutual evaluation" activities. Students are required to work in pairs to score each other's papers according to the school's grading standards for grading papers and write corresponding revisions. In this process, students can become more familiar with the requirements of the school's graduation thesis writing

standards by reviewing other people's papers, pay more attention to details in formal writing, avoid many low-level mistakes in the thesis due to carelessness, and cultivate students' critical thinking.

3.2.4 Introduce collaborative teaching by enterprise tutors

In the context of the integration of industry and education, school-enterprise collaborative education has become an important way for application-oriented universities to cultivate talents[9]. In the teaching process of this course, technical talents with rich experience in cost consulting, project management and other companies can be invited to participate in the teaching of this course as corporate tutors. In the teaching process, corporate tutors can provide students with a wealth of real engineering cases as writing materials, guide students on how to transform enterprise problems into academic topics, review the authenticity of professional data in papers and the practicality of argumentation logic, etc., so as to make up for the cognitive gap of engineering practice in school teaching and cultivate practical talents that meet the needs of the industry.

3.3 The Evaluation System of "Outcome-Oriented and Process Tracking"

The graduation thesis writing course abandons the final assessment method based on the final examination, and adopts the assessment method of combining process assessment and final assessment, accounting for 40% and 60% respectively[10]. Among them, the process assessment consists of four parts: pre-class preview, classroom interaction, classroom practice and after-class homework, and the final assessment mainly adopts the form of course paper writing and reporting.

3.3.1 Process assessment

The proportion of pre-class preview in the process assessment is 20%, and the main content is to complete the preview test questions assigned on the learning platform, so as to cultivate students' independent learning ability.

Classroom interaction accounts for 10% of the process assessment, which aims to examine students' participation in the course, mainly through classroom questions, questions and discussions on the learning platform.

The proportion of classroom practice in the procedural assessment is 40%, and the main content is to assign practical topics according to the key knowledge of the classroom, including topic selection, writing the opening report, writing the thesis outline, modifying the thesis format, etc., aiming to understand whether students understand and master the important and difficult knowledge taught in the classroom through practical topics.

After-class homework accounts for 30% of the procedural assessment, and students are urged to review the knowledge learned in class by assigning after-school homework, and at the same time, it can also comprehensively evaluate students' mastery of important and difficult knowledge, so as to adjust the teaching progress and methods in a timely manner.

3.3.2 Final assessment

Course thesis writing accounts for 60% of the final assessment, mainly through the topic selection value, argumentation logic, professional standard citation, format standardization, etc. to comprehensively score students' papers, test whether students can combine academic paper writing knowledge with engineering cost professional issues, form research results with practical reference value, and cultivate students' academic normative awareness.

The course paper report accounts for 40% of the final assessment, and is scored through the logic and expression ability of the students' reports, PPT presentation and the accuracy of answering questions, mainly examining the students' ability to refine the core content of the paper, the organization of logical presentation, and the ability to respond to professional questions, and cultivate students' communication and adaptability skills.

4. Expected Teaching Effect

By introducing an applied teaching mode for systematic reform, this course is expected to achieve the following teaching effects and realize the deep integration of writing ability and professional practice:

(1)The quality of students' papers has been significantly improved. The topic selection of the thesis is in line with the needs of the industry, and most of the topics are from the actual problems of the engineering cost industry. Enhance the authenticity of argumentation logic and data to avoid problems such as data piling up and empty views; The papers have complete elements and the format is standardized.

(2)Students' writing ability and professionalism

develop in tandem. Students' ability to transform problems has been improved, and they can independently transform specific problems in the practical operation of engineering cost into academic research problems; Practice-oriented writing migration can be carried out, and data argumentation skills and logic construction methods mastered in thesis writing can be transferred to professional practice scenarios. Academic integrity and rigor have been strengthened, the citation content can be standardized in the paper, and the plagiarism check rate meets the requirements of the school.

(3)The adaptability of teaching to industry needs has been improved. Students can flexibly apply the relevant skills mastered in thesis writing to the cost engineer examination, realize the connection between the course and the vocational qualification examination, and reflect the paving effect of the course on students' professional ability.

5. Conclusion

This paper reforms the undergraduate graduation thesis writing course of engineering cost by introducing an applied teaching mode, and adopts the methods of professional scenario-based teaching content, diversification of teaching methods, and comprehensive assessment methods, which can effectively improve the practicality and interest of teaching content, enhance students' learning enthusiasm and classroom participation, so as to achieve the core goal of improving students' graduation thesis writing ability and independent problem-solving ability, and solve the dilemma of boring classroom and poor teaching effect of traditional teaching mode. Looking forward to the future, the current rapid development of AI technology, engineering cost undergraduate thesis writing courses are also facing new challenges, how to organically combine new technologies with ethical and political education is the focus of the next step.

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