



Exploration and Practice of Teaching Management Courses Based on the Construct of Thinking Maps--The Teaching of Quality Management as an Example

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Abstract. Teaching innovation is an important means to enhance the level of teaching and education in universities and students' innovation ability, and it has great theoretical significance and practical guidance significance for teaching reform and development. Focusing on CTGF to carry out the practice of teaching innovation, to realize the all-staff, all-process, all-round mode of teaching innovation. Aiming at the actual teaching pain points in management courses over the years, we set up the teaching concepts of "cultivating moral integrity" and "student-centeredness" for the teaching mode, design, evaluation and other aspects. In the method of integrating Civics into the curriculum, the main line of "infiltration and sublimation" of knowledge is adopted to establish an immersion classroom and improve the students' thinking pattern. Through blended teaching, the whole process of blended teaching mode of learning before class, researching during class and understanding after class is realized, and the construction of thinking schema is carried out.

Keywords: Mind mapping constructs; Curriculum civics; Whole process teaching; Pedagogical innovations

1 Introduction

Under the background of globalization of education, on the basis of ensuring the quality of students' cultivation, it has become an important issue for the cultivation of talents in colleges and universities that students can use knowledge to guide practice, analyze problems, solve problems, and master the awareness and ability of academic inquiry. The teaching mode of classroom lectures should be shifted to a new teaching method which is student-led and focuses on the cultivation of thinking, and focuses on cultivating students' innovative consciousness and application ability^[1].

Through the innovative practice of teaching based on the construction of mind mapping around the cultivation of talents in colleges and universities, based on the constructivist learning theory, through the creation of a thinking classroom, guiding students to take the initiative to learn so as to build and enrich the network of existing

knowledge and experience in the students' minds, forming self-effective thinking, and exploring the all-round, all-process and all-round model of talent cultivation covering the whole staff.

2 Knowledge Schema and Analysis of Pedagogical Pain Points

2.1 Knowledge Mapping and Grooming

Schema is a way of expressing knowledge in constructivist learning theory and refers to a network system of knowledge representations organized around a topic in the human brain [2].

Relying on the course "Quality Management" to carry out the exploration and practice of teaching reform, the course through the conceptual knowledge of quality and reliability and through the data analysis to find out the problem-solving ideas, methods, emphasizing the mastery of the quality and reliability of the problem analysis process, focusing on the cultivation of students in the real-life analysis of problems and problem-solving ability.

Through the questionnaire research to analyze the learning basis of the student group electing the course, the use of the form of map sorting students have the basic knowledge schema (Figure 1), based on the schema theory to enhance the fit and applicability of the case study teaching methodology in the course teaching, as a basis for the reform of teaching, teaching methodology of the entry, guiding the way of adjusting the students to improve their thinking.

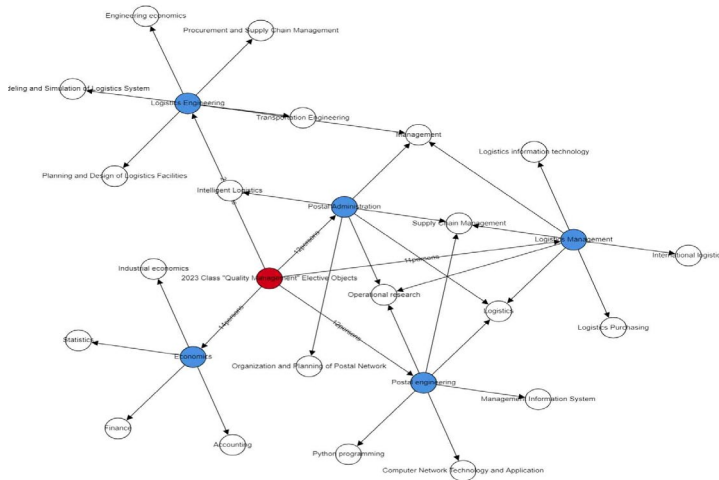


Fig. 1. Knowledge schema grooming.

2.2 Teaching Pain Analysis

Through the questionnaire, we know the basic knowledge schema of the students who take the course in 2023: they have certain basic knowledge of management, are good at or interested in logical analysis, and have certain data analysis ability. In the teaching process should strengthen the understanding of quality management related concepts, focus on strengthening the application of data analysis to solve practical problems, through the creation of situations introduced into the teaching can allow students to standardize the direction of thinking on the basis of the existing knowledge schema, to develop the ability to analyze and solve practical engineering problems, through the course of teaching so that the students have the ability to independently construct their own direction of thinking, enrich the knowledge schema --Through the teaching of the course, the students will have the ability to construct their own thinking direction and enrich their knowledge schema.

3 Whole-process-based Blended Teaching Methodology Integration Path

Construction of Thinking Graphic Formula (CTGF) is a method based on the constructivist learning theory, which guides students to learn actively through the creation of a thinking classroom, thus building and enriching the network of existing knowledge and experience in students' minds and forming their own effective thinking (Figure 2). The significance of thinking construction lies in the enrichment of thinking schema in the original knowledge structure, the construction of a new knowledge system, and the formation of an effective thinking mode through active exploration and full social interaction [3].

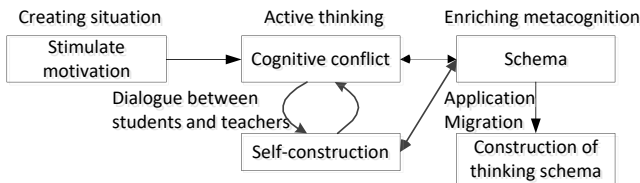


Fig. 2. Thought Pattern Constructs.

In order to focus the students' thinking schema in the theoretical teaching of the course, so as to form the thinking mode of solving the quality problems by utilizing the professional knowledge, the innovative reform of the teaching mode is proposed. The course teaching team summarizes the "whole process hybrid teaching method" in teaching, divides the course teaching into three main stages - learning before class, studying in class and understanding after class, and adopts the hybrid teaching method throughout the teaching practice, and devotes itself to the construction of students' thinking schema, forming a characteristic innovative mode of course teaching. The blended teaching method is used throughout the teaching practice (Figure 3), which is dedicated

to the construction of students' thinking schema, forming an innovative mode of teaching in the specialty courses and improving the effect of teaching and learning.

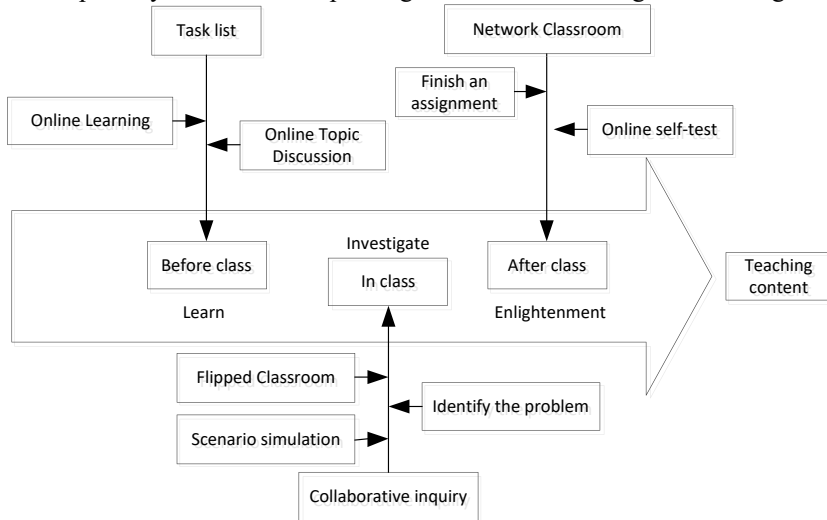


Fig. 3. Instructional implementation of a whole process blended approach to teaching and learning.

3.1 Enriching Mind Mapping by Comprehensively Carrying Out Online\Offline Blended Teaching Mode with the Goal of Cultivating Application-Oriented Talents

"Quality Management" course teaching content design based on the practical characteristics of quality management tools, so that students recognize the core values of quality management and the composition of the knowledge system, can analyze the root causes of quality problems and factors affecting the enterprise from the perspective of systematic management, and then from the human, machine, material, method, environment, measurement and other aspects of the problem analysis, to find out the solution to the problem of the path of quality. Secondly, we learn the basic methods of quality control such as control charts, sampling tests and process capability indexes, improve the quality of enterprise products from the perspective of the whole process, and utilize the quality management system to realize the continuous improvement of the enterprise's quality management capability. In addition, total quality management, 6 sigma management, zero-defect management, quality and economic analysis is also an important part of this course, the learning of these theoretical knowledge can make students realize that management is the fundamental to improve the quality level of the enterprise, the formation of the whole process of quality management reflecting the online teaching content.

We design the course from the whole process of pre-course, in-course and post-course to realize the "through the whole process of teaching". Based on the cultivation goal of application-oriented talents, we optimize the integration of teaching resources

such as catechism videos, PPT courseware, research projects, enterprise cases, etc., combining quality management methods with industry practice, helping students enrich their thinking schema and deeply understand the application process and value of quality management methods.

In-depth analysis of the characteristics of student online learning, in order to solve the problems of "invisible" (including invisible students' learning status, invisible students' feedback and other new problems) and "can not catch" (including classroom questions students do not respond, no response, poor interaction) to carry out the team teaching. The teaching method is divided into two categories, one is to learn knowledge from practice, through the case guide combined with self-programmed teaching software, real-time interaction with students, knowledge explanation; the other is from knowledge to practice, with the task as the traction through a variety of means to guide students to participate in the discussion. "Two-way synchronization" multi-dimensional mobilization of student enthusiasm and initiative to ensure good teaching order and teaching results.

3.2 Realize the Integration of the Whole Process of Civic Education and Professional Education with the Guidance of Values

1. Integration of the key points of the Civics and the content of the curriculum

Civic and political elements such as the theory of high-quality development are integrated into the teaching to help students shape their value system and realize the organic unity of knowledge transmission, ability training and value guidance. Through the guidance of Civics and Politics, students can take the initiative to care about the national policies and regulations, pay attention to the social development, pay attention to the state-owned enterprises, and show the pride of patriotism and love of home.

In the practice of course ideology, we make full use of the idea of PDCA cycle in quality management, aiming at improving the quality of the whole process of education and teaching, practicing course ideology and exploring the integration mode of course ideology, and forming an effective integration mode of "one body, three sides" of "Quality Management" course ideology and politics, which is based on the students' main body from the following three aspects--thinking training, guiding by the case study before class, and simulating by the situation in the class. We have formed the effective integration mode of "one body, three sides" of "Quality Management" course (Figure 4).

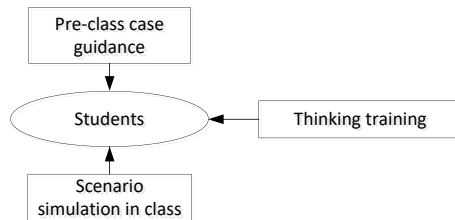


Fig. 4. The "one body, three sides " model of integrating the ideology of the curriculum.

According to the characteristics of the knowledge system of quality management, we have fully explored the elements of the Civics of the course, formed the correlation matrix between the knowledge points and the Civics elements, and organized and formed dozens of cases of the Civics of the course (Figure 5). At the same time, the teaching materials involved in the teaching process, such as lecture notes and videos, are further enriched and improved. In the teaching process, through the guidance of humanities knowledge, combined with historical stories and famous quotes, the elements of Civics and Politics are more naturally integrated into the teaching process. In this way, it can not only increase the interest in listening to lectures, but also broaden the knowledge, and at the same time increase the effect of cultural self-confidence.

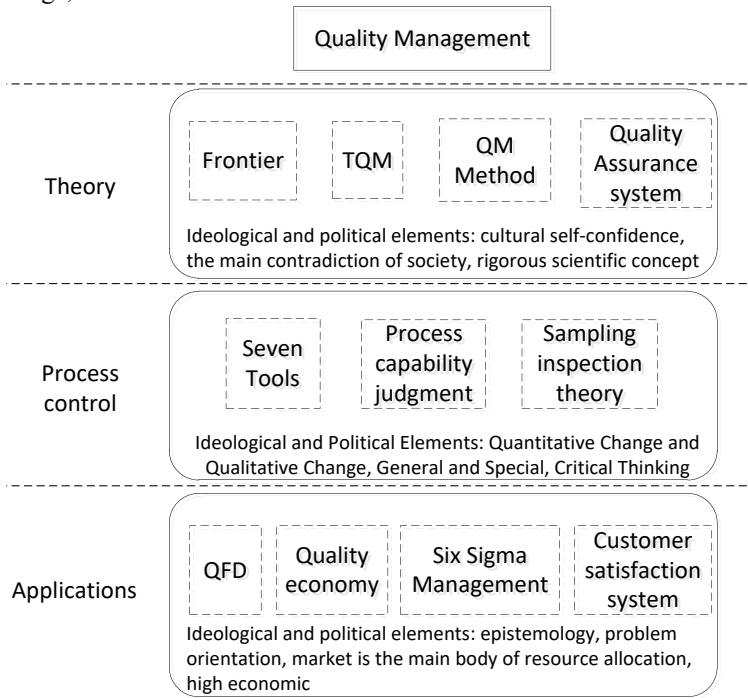


Fig. 5. Diagram of the knowledge points of the curriculum with the elements of the Civics.

2. Integration of curricular ideology into the whole process of teaching and learning

The method of integrating course politics adopts the path of knowledge "decomposition - aggregation" (Figure 6). First, professional simulation, set introductory questions to build an immersive classroom; second, progressive exploration, the significance of each link of quality control, the basic principles, methods and models, and gradually stimulate the cultivation of students' awareness of the mission of scientific management, the development of the "speak with data", "control black swan events" and other quality management methods; third, cooperative practice, group case studies. "Third, cooperative practice, group exercises, summarize and refine the application of

quality control tools and methods, and combined with post-course assignments to sublimate the scientific ideas, implementation points, and innovative applications of quality management.

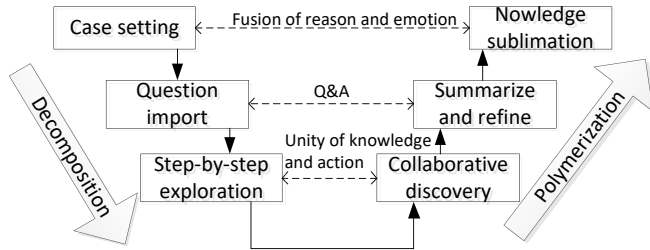


Fig. 6. "Immersion-sublimation" pathway.

Explore the organic combination of values and professional knowledge in the form of thinking training: dialectical thinking, reverse thinking, critical thinking, etc.; pre-course case guidance to inspire students to think; classroom present: let students understand the real strength of the national defense. The professional teaching really become the base of talent training, play the driving role of professional teaching on the development of society, improve the overall competitiveness of students, better docking demand for talents, and adapt to the development of society has a positive impact.

3. Cultivate students' thinking by means of refined teaching

Based on the whole process of blended teaching method (Figure 7) to the task as a pull, to the practical inquiry-oriented, around the students, through the entry of multi-channel teaching, the use of online and offline blended teaching mode to carry out practical inquiry, guiding the students to collect information, analyze the problem, solve the problem, the use of group reporting, keynote speeches, case studies and other teaching means to carry out activities, so that the course knowledge system is autonomously constructed in the student's self-knowledge The teaching mode of independent learning^[4] is developed through the use of various teaching methods such as group presentations and case studies.

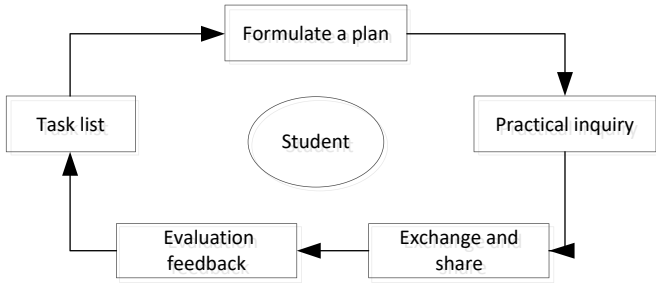


Fig. 7. Whole-process-based blended learning methodology incorporation pathway.

The course stands in the perspective of enterprise talent demand, to start specific quality management tasks, process, task-driven specific requirements as the basis for

the integration of online teaching content, with the help of project-oriented, information integration, teaching-learning-doing in one, innovative course teaching mode.

In classroom teaching, teachers make the classroom "live" by setting up some suitable problem situations, providing students with appropriate guidance and hints, and adopting diversified teaching methods, teaching board management and other methods^[4]. Students are guided to climb up the theoretical ladder step by step, and are provided with the means to move from knowledge construction to the refinement of their thinking.

4 The Three-pronged model of the Management Course

We are exploring the mode of ideology and politics in management courses to cultivate the high ideological beliefs of college students and to make them become the future builders and successors of the country with both virtue and ability. Through the teaching practice of the course, the "three integration" of the elements of ideology and politics is carried out.

4.1 Integration of Ideas

In order to give full play to the leading role of educators in the "Quality Management" course, it is necessary to strengthen the ideological and political construction of teachers to realize the integration of ideas. The teaching team of the course utilizes activities such as party and group activities, pedagogical activities and seminars, and observation of the teaching of ideological and political lessons, combines the teaching content of the course, carries out ideological and political and teaching ability enhancement education from various angles, and enhances the effectiveness of classroom education by upgrading the personal qualities so that classroom teaching is organically fused with the education of ideology and politics.

4.2 Integration of Cases

After the full integration of ideas, it is also necessary to play a leading role in the ideological leadership of the curriculum through effective means. Therefore, the teaching process needs to abandon the traditional form of knowledge teaching, give full play to the subjective initiative of teachers, build two-way communication channels, cultivate the spirit of exploration, the pursuit of truth and scientific spirit of students, teachers need to actively explore effective means of teaching process, through a realistic case, the elements of the Civic and political elements of the classroom teaching into the silent, subtle influence on the students' outlook on life and the world, thus enhancing the quality of students^[4]. This will enhance students' quality^[4].

For example, in the teaching process, through the analysis of key words so that students understand the quality of domestic accidents in recent years and think deeply about the root causes of accidents, after a series of teaching case study, stimulate the students' sense of social responsibility, not only to mobilize the interest in learning, but

also to make the students in the process of exploring the truth of the relevant knowledge easily learned.

Therefore, the integration of case studies into the curriculum plays a crucial role in the daily teaching of Civics.

4.3 Integration of Knowledges from Two-way

Through the two-way knowledge integration between teaching and learning, students can internalize knowledge effectively, share cases through group work, analyze the quality culture of enterprises, or use the tools and means of quality management to solve their own learning and life problems, and through the activities that stimulate the subjective initiative, students can guide the knowledge they have learned to the practical problems^[5].

Teachers do a good job of summarizing and guiding, the actual case and course knowledge content organic integration, so that students in the case of sharing after the independent construction of the knowledge system, play the initiative of learning. In this way, the organic combination of ideological education and course content can be realized explicitly, and the synergy between ideas and knowledge can be accomplished implicitly.

4.4 Formation of an Effective Integration Model of "one Body, Three Sides" for Management Courses

The practice of Civic Governance of the course also makes full use of the idea of PDCA cycle in quality management, with the goal of improving the quality of the whole process of education and teaching, practicing Civic Governance of the course and exploring the formation of Civic Governance of the course into the integration mode, forming a student-oriented from three aspects - thinking training, pre-course case guidance, and in-class presentations. We have formed the effective integration mode of "one body, three sides" of "Quality Management" program. The

Explore the organic combination of values and professional knowledge in the form of thinking training: dialectical thinking, reverse thinking, critical thinking; pre-course case guidance: cases of national defense, guiding students to think; classroom present: let students understand the real strength of the national defense. To make professional teaching a real talent training base, to play the driving role of professional teaching on the development of society, to improve the overall competitiveness of students, to better meet the demand for talent, and to adapt to the development of society has a positive impact.

5 Analysis of Teaching Effectiveness

CTGF-based whole-process course teaching innovation practice, through teaching-practice-reflection to realize the exploration of course teaching innovation.

First of all, create teaching scenarios to guide thinking. Thematic classroom teaching mode is carried out through case guidance, encouraging students to search for information in advance, carry out group study, conduct main body discussion, and comprehensive integration of the course's ideology and politics through the guidance of the teacher, guiding students to care about politics and social issues.

Secondly, problem-based teaching is carried out to enrich the knowledge schema. Students are guided from theory to practice to solve practical problems.

Finally, through reflecting on cases and knowledge, students are guided to actively explore and independently construct thinking patterns. It enhances students' knowledge base, political literacy and observation and learning ability, and promotes students to learn to think, reflect on themselves and realize their growth.

6 Conclusions

In the innovative practice of management course teaching, we follow the principle of "student-led and teacher-led" in the main position of classroom teaching, give full play to the thought-leading role of course ideology and politics, form the integration mode of course ideology and politics of "one body, three sides", and form the path of teaching reform with "immersion and sublimation" as the main line, carry out two-way communication through rich teaching activities, and dedicate ourselves to the construction of ideological schema. The main line of the teaching reform is "infiltration - sublimation", and through the rich teaching activities, two-way communication is carried out, and we are committed to the construction of the thinking pattern. In the future teaching practice, we will continue to explore the material of course Civics and Politics, enrich the teaching resource base, optimize and improve the teaching means and methods, and better integrate the knowledge transmission, value orientation and ability development into one, so as to build a high-quality course.

References

1. HE Yongda, ZHANG Weiguo, CHEN Yali. Research on the application of PBL model in the reform of bilingual teaching--taking the teaching of "econometrics" as an example[J]. Educational Theory and Practice.2022,42(10)49-53.
2. Nie Xinhua, Xiao Zhicai, Qin Liang, et al. Exploration of teaching reform of "automatic test technology" course based on CDIO mode[J]. Industry and Information Technology Education. 2019. 6(53):42-45
3. Higher Education Writing Group. Higher education studies [M]. Northwestern University Press,2018
4. Tao Qian. Quality function unfolding of growth mindset cultivation in management course teaching[J]. China Management Informatization.2020,2(3):46-49
5. Chen Chunxiao, Wang Jinjian. Current Situation and Countermeasures of Industrial Colleges in Application-oriented Undergraduate Universities [C]. Higher Engineering Education Research, 2020 (4): 131-136.

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