

# On the Research and Practice of Ideological and Political Teaching in Discrete Mathematics Course

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## Abstract

"Curriculum Ideological and Political Education" is put forward to change the situation that teachers pay attention to imparting professional knowledge and neglect guiding students' correct values, and it is an inevitable trend of contemporary education mode. In the process of teaching, we should thoroughly implement the "course ideological and political education" into the classroom teaching of discrete mathematics, and fully implement the requirements of "three-round education" under the guidance of the "4-4-5" ideological and political curriculum system with the aim of "cultivating people by virtue". We will continue to explore, practice, reform and innovate in teaching process, methods and strategies, teaching content, organizational process and evaluation mechanism to help students establish their ideals and beliefs.

**Keywords:** Curriculum ideology and politics, Discrete mathematics, reform in education.

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## INTRODUCTION

On December 7-8, 2016, at the National Conference on Ideological and Political Work in Colleges and Universities, the General Secretary Xi Jinping pointed out: to make good use of classroom teaching as the main channel, the ideological and political theory courses should be constantly strengthened in the process of improvement, and the affinity and pertinence of ideological and political education should be enhanced to meet the needs and expectations of students' growth and development. Other courses should be well guarded and planted, so that all kinds of courses and ideological and political theory courses can walk in the same direction and form a synergistic effect (Guan *et al.*, 2022). On May 28, 2020, the Ministry of Education issued the notice on the issuance of the Guidelines for Ideological and Political Construction of Courses in Institutions of Higher Learning, marking the launch of ideological and political courses and curriculum research in the new era in universities across the country.

All university courses study the objective laws of nature and transcend ideology. The purpose of teaching is not only to let students learn theoretical knowledge and skills in professional fields, but also to

have clear requirements for mastering basic concepts and theories, calculation methods and skills, and to integrate ideological and political education into course teaching (Chai, 2021). "Curriculum Ideological and Political Education" is a developing concept based on criticizing and reflecting on traditional ideological and political courses. As an innovative thinking, it emphasizes the integration of ideological and political education into courses other than ideological and political theory courses. In school teaching activities, based on courses, it realizes the cognitive transformation from substantive courses to the concept of teaching and educating people, and reasonably penetrates moral education elements into professional knowledge to implement the fundamental task of educating people. Integrating curriculum ideology and politics into professional teaching will not only help to implement the basic education policy, but also help to strengthen the effectiveness of professional teaching.

As the core basic theory course of computer specialty, discrete mathematics course is an important branch of modern mathematics, which mainly studies variables, structures and relationships with discrete characteristics and involves a wide range of contents. Discrete mathematics is generally offered to science and engineering students, but most colleges and

universities pay little attention to moral education, which leads to students mastering more skills but less social feelings, so it is more urgent to carry out curriculum ideological and political education according to the curriculum content (Zhang and Chen, 2023).

To sum up, the integration of curriculum ideology and politics into the classroom teaching of discrete mathematics is a necessary path to realize all-round education and an important measure for the curriculum reform of discrete mathematics.

## RESULTS AND DISCUSSION

### The Role of Ideological and Political Education in Discrete Mathematics

Under the background of "Curriculum Ideological and Political Education", the teaching reform of discrete mathematics is carried out, and the cultural genes and value paradigms in professional courses are carefully studied, and the ideological and political resources contained in them are extracted, so that ideological and political education can be integrated into all aspects of classroom teaching, and the coordinated progress of ideological and political education and professional education can be realized, so as to achieve the teaching goal of knowledge imparting, ability training and value shaping.

#### 1) Innovating Teaching Activities and Perfecting the Curriculum System

As the main position of higher education, professional teaching has natural advantages in teaching time. Promoting professional teaching in an all-round way and implementing the ideal goal of transforming ideological and political education from the main channel to the three-dimensional ideological and political education in the past will help the courses and ideological and political education in all disciplines to play their educational effectiveness simultaneously. On the one hand, enhancing teachers' subjective consciousness and strengthening their ideological and political education ability will help teachers to cultivate students' humanistic ethics and scientific spirit with the help of professional teaching, and realize the deep integration of curriculum ideological and political education and professional teaching. On the other hand, to deepen the ideological and political education in professional teaching courses, it is necessary to scientifically design educational objectives, contents, methods and carriers in professional teaching, and give full play to the value infiltration function of professional teaching and the value leading function to students. In a word, the integration of ideological and political courses into professional teaching is a key link in the development of colleges and universities, which is helpful to improve the talent training system.

#### 2) Practicing Cultural Integration and Sublimating the Traditional Thought of Teaching and Educating People

Ideological and political education can cultivate students' dialectical thinking and help them make correct life choices. Integrating ideological and political education into the teaching process of discrete mathematics can greatly cultivate students' dialectical thinking and rational thinking, help students make correct choices in the process of life choice and avoid tragedies. Promoting ideological and political education in courses and excavating ideological and political education resources in specialized courses will not only help to give full play to the role and advantages of courses and classroom teaching in various disciplines, but also help to ensure that ideological and political education in colleges and universities permeates classroom teaching in various disciplines and form a big ideological and political pattern (Chen, 2023).

#### 3) Forming a Synergistic Effect and Breaking Through the Barriers of Discipline Education

Under the background of ideological and political education, some ideological and political education should be integrated when teaching the knowledge points of each chapter, especially the historical reasons and learning motives of some new concepts. In the teaching of reasoning theory, the rigor proved by reasoning theory and its practical application will be used in the teaching process to carry out ideological and political courses and enhance students' enthusiasm for learning. At the same time, students can deepen their understanding of dialectical materialism, experience patriotism and improve their national pride and social responsibility, so as to achieve multiple teaching goals.

#### The Implementation Method of Ideological and Political Construction in Discrete Mathematics Course

The teaching reform of discrete mathematics under the background of "course thinking and politics" is mainly carried out from the following six aspects:

##### 1) Planning the top-level design and integrating ideological and political goals into the syllabus

First of all, we should make clear the guiding ideology of ideological and political education, give full play to the role of classroom teaching as the main channel and position in educating people, run ideological and political education through the whole process of education and teaching, and strive to cultivate talents with both ability and political integrity. From the perspective of students' development and the design concept of curriculum ideological and political education, we should revise the teaching syllabus and clarify the curriculum tasks, teaching objectives, teaching contents and evaluation methods in the process of organic integration of discrete mathematics teaching and curriculum ideological and political education, so

as to provide guidance and basis for the implementation of curriculum ideological and political education. We should select course knowledge points and construct an innovative knowledge system of discrete mathematics courses, so as to realize the goal of ideological and political thoughts in courses, textbooks and brains. Starting from the design concept of students' development and curriculum ideological and political education, we should put curriculum ideological and political education into syllabus, teaching plan, classroom and teaching evaluation, implement "taking this as the foundation and four regressions", continue to deepen the construction of curriculum connotation and improve the quality of curriculum teaching (Chen *et al.*, 2023).

## 2) Deeply Digging the Gene of Ideological and Political Education and Innovating Teaching Design

We should open up the blind spots and shortcomings in the teaching content and innovate the classroom teaching design. Mining ideological and political genes can be carried out from two levels: on the one hand, we should regard a single course as the object of mining, dig deep into the special ideological and political genes in this course, make clear the correspondence between ideological and political genes and professional knowledge, find the right place to cut people, infiltrate ideological and political genes in professional teaching, and realize the organic integration of ideological and political genes and single courses. On the other hand, take the curriculum group as the object of excavation, and attach importance to the construction of specialty groups and high-quality specialty. Based on the research of teaching materials, explore the elements of mathematical ideological and political education. According to the teaching content of the course, fully tap its moral education connotation, carefully sort out the knowledge points that organically integrate the ideological and political education content with the professional knowledge and skills education content, and on this basis, carefully design the teaching content that integrates the ideological and political education elements, and establish the internal correspondence between them in a seamless and organically integrated way, which can effectively achieve the same frequency resonance of knowledge imparting and value leading.

## 3) Exploring Diversified Teaching Methods in Classroom Teaching

We should innovate teaching methods in teaching, flexibly use a variety of teaching methods, closely combine curriculum ideology and politics with classroom teaching, and deeply integrate students' daily concerns and needs, so as to give full play to the educational effect of education and teaching. At the same time, we should innovate ways and means of contacting students, and combine the ideological and political course with the social class, so that the boring historical theory course can become the "main channel"

of the ideological and political course. In the teaching form, it has changed from "teacher-centered" to "student-centered". We should give full play to the advantages of the online open course of discrete mathematics, expand the time and space of classroom teaching by actively carrying out online and offline mixed teaching, and make the ideological and political course effectively implemented. Through the combination of real life and professional cases, the teaching situation is created, and the teaching content and curriculum ideological and political education are skillfully integrated to better play the effect of curriculum ideological and political education. The teaching mode of asking questions, analyzing problems and solving problems is adopted to guide students to explore and discover step by step and cultivate their innovative spirit of exploration.

## 4) Integrating Case Teaching According to the Blueprint of Ideological and Political Education

The case teaching of ideological and political elements should be introduced into the teaching content and embedded in the teaching resources. Choosing appropriate cases is beneficial to students' deeper understanding of knowledge. When choosing cases, it will not only help students to achieve mastery of knowledge and transfer from old to new, improve their ability to analyze and solve problems, but also provide students with a "nutritious soup" rich in ideological and political elements, which is an effective way to show the function of moral education (Gong, 2020). In classroom teaching, "gene-style" is integrated into the education of world outlook, patriotism and personality quality, bringing fresh cases into the classroom and imparting knowledge with temperature and thickness.

## 5) Reforming the Assessment Method and Strengthening the Evaluation of Students' Ideological and Political Education

Teaching evaluation and feedback mechanism should be established to promote the reform of ideological and political teaching. A scientific and reasonable evaluation mechanism needs to be based on the scientificity and feasibility of the evaluation index system and the operability of monitoring means and measures (Li and Zhou, 2021). It is the basic means to ensure the orderly development of the school's "curriculum ideological and political work" and is helpful to promote, feedback, regulate and guarantee the construction of "curriculum ideological and political work". Design a reasonable assessment method and explore a scientific teaching evaluation system. In the course evaluation system, the assessment of students' cognition, emotion, values and other "ideological and political" aspects should be included, objective quantitative evaluation should be gradually combined with subjective inspection, and a more detailed and systematic evaluation index should be formulated by means of comprehensive result evaluation, process evaluation and dynamic evaluation, so as to fully reflect

the teaching situation and enhance the evaluation proportion of classroom education effect.

### 6) Exploration of "Two-way Evaluation" of Classroom Teaching Effect

We should improve different teaching activities in and out of the classroom, emphasize the innovation of methods and the application of modern technology, adhere to the unity of explicit education and implicit education, and give full play to the effect of mathematics "course ideological and political" teaching. At the same time, we will continue to strengthen team teachers' learning exchanges, update teaching concepts, improve the ideological and political teaching level of the course, and improve their self-cultivation and educational ability. Through the investigation of students' recognition of teachers' classroom teaching, we can reflect the combination of knowledge imparting and value leading in the course, help each student to continuously improve their interest in learning, complete the established teaching tasks more effectively, consolidate what they have learned, broaden their academic horizons and promote the all-round improvement of college students' ideological quality. Through the "two-way evaluation", we will further improve the consciousness of curriculum ideological and political education, and strengthen the standardization and scientific construction of curriculum ideological and political education.

### CONCLUSION

Adhering to the guidance of Socialism with Chinese characteristics Thought in the new era, and closely following the "Top Ten Education" system of ideological and political work in schools, organically integrating ideological and political education into the training process of professional talents to form a synergistic effect can promote the realization of the "three-round education" function of discrete mathematics course teaching. Firstly, this paper analyzes the necessity and significance of implementing course ideological politics in discrete mathematics. Then, starting from the design concept of course ideological politics, it revises the teaching syllabus of discrete mathematics, establishes a scientific teaching evaluation system and perfects the course assessment method. Starting from the content of the teaching materials, this paper gives the implementation means of ideological and political education in discrete mathematics courses from the aspects of excavating

ideological and political resources and designing ideological and political cases, hoping to break the independence of traditional ideological and political courses and enhance students' understanding of ideological and political education by integrating ideological and political education into professional courses.

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