

# *Construction of the Practical Teaching System of Ideological and Political Courses in Applied Universities under the CDIO Concept*

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**Abstract:** At present, there are still some problems in the system construction of practical teaching in application-oriented universities, such as lack of top-level design of teaching objectives, block segmentation and overlapping of teaching content, single teaching field, simple teaching design, imperfect evaluation system, and lack of long-term guarantee mechanism. Based on the CDIO concept, explore the path of constructing an ideological and political practical teaching system from teaching objectives, teaching contents, and teaching strategies, evaluation and guarantee the practical teaching of ideology and politics, promote the scientific development of the practical teaching of ideology and politics, and improve the effectiveness of practical teaching of ideology and politics.

## 1. Introduction

Ideological and political theory course in recent years (hereinafter referred to as the "education courses") education teaching achievements, but in the face of diverse ideology and culture, diversified social ideological trend and complex realistic problems, how to make students identity, internalize the value of education courses, enhance students' interpretation of practical problems, is still a difficult task of college education course teaching. The practical teaching of ideological and political course and theoretical teaching complement each other in content and function, and constitute the two wings of the ideological and political course teaching system, which plays an important role in solving the dilemma of ideological and political course, enhancing students' interpretation of practical problems, and achieving true learning, true understanding and true use. However, there are a series of problems in the practical teaching of ideological and political courses in colleges and universities, and the practical teaching system of ideological and political courses in colleges and universities to cultivate application-oriented talents needs to be improved and constructed. A series of problems such as single teaching field, simple teaching design, unscientific evaluation system, lack of long-term guarantee mechanism.

## 2. The Practical Pain Point of Ideological and Political Course Practical Teaching

Xi general secretary in the school of ideological and political theory class teachers symposium put forward the education courses reform and innovation of "eight unifies" specific requirements, which emphasizes the practical orientation of college education courses, namely to "adhere to the

unity of theoretical and practical", for education courses practice teaching reform in colleges and universities provides a new path. In order to better understand the demands of students, the author sent 794 questionnaires to students of applied universities in 2019, 2020, 2021 and 2022. The number of boys and girls accounted for 59.57% and 40.43%, respectively. From some data of the questionnaire survey can be seen, it shows the college students on the practical teaching of ideological and political courses. At the same time, combined with the experience and lessons summarized by teachers in teaching, we found that there are still many shortcomings in the current practical teaching of ideological and political courses:

### **2.1 Teaching Objectives are Lack of Top-Level Design**

From the point of view of "teaching", education courses practice teaching long in education courses theory teaching client, teaching goal design, lack of the theoretical teaching goal of repeated or superposition, rather than strengthen or supplement theory teaching goal, teaching subjective randomness is stronger, the lack of mature and suitable for practical practice of teaching goal system of specific measures. It directly affects the setting of teaching content, the design of teaching activities and the implementation of teaching organization. From the perspective of "learning", the questionnaire data shows that 73.3% of students think it is necessary or necessary to carry out practical teaching of ideological and political courses, but they do not understand the purpose of teachers' teaching and their own learning tasks. The practice process is a quick look, which is mainly caused by the lack of top-level design of teaching objectives

### **2.2. Block Segmentation and Cross-Repetition of Teaching Content**

In order to integrate with the resources of practical teaching base, the practical teaching content often lacks emphasis and theoretical teaching content complement each other. There are block segmentation, crossover and repetition, and no mutual interpretation of the content, which cannot well reflect the unity of theory and practice. From the questionnaire data, 36.4% of students think to practice teaching content theory teaching content is difficult, and the teacher often ignore this in the field teaching, the essence of the practice teaching is often diluted practice itself, blurred the focus, make students produce "attendance" rather than "participate in learning" illusion. At the same time, the practical teaching content is out of school positioning and professional characteristics, and there is no systematic, lack of theme and other problems, which to some extent reduces students' expectation and attraction of practical teaching.

### **2.3. Teaching Field Is Single and the Teaching Design Is Simple**

The current complex situation at home and abroad and the psychological characteristics of college students in the new era require that the practical teaching of ideological and political courses must be supported by careful teaching design. At present, most of the actual teaching is in the traditional way that teachers set themes, students conduct research and submit reports. According to the questionnaire survey, they was asked, "Do you think the practical teaching methods of ideological and political courses are rich and innovative?" 80.98 percent of the students thought the activity was old, single and unattractive. Even if the teacher leads out to teach on site, there is no suitable teaching method determined according to the teaching content, and the on-site teaching effect is greatly reduced. As the new media learning platform, VR, AR, the emergence of virtual reality teaching methods, for each course teaching resources and carrier of update, but education course practice teaching on the platform and the use of science and technology is slow, no new method of students learning enthusiasm, nor create a new learning field for students. Although

tsinghua University, Jilin University, Chongqing Jiaotong University and other universities have formed a number of distinctive practical teaching modes of ideological and political courses, how to design and implement the practical teaching system of ideological and political courses that can promote the cultivation of application-oriented universities still needs to be explored.

#### **2.4. The Evaluation System Is Imperfect**

The practical teaching of ideological and political courses pays more attention to the process evaluation, but the current assessment method is relatively single, the assessment of each link is not detailed enough, and does not pay attention to the design and improvement of the evaluation system. Because the early teaching goal orientation is not enough specific, course teaching design and no standard clear learning task requirements, there is no corresponding assessment project evaluation rules and assessment rewards and punishment measures, to the student's learning performance, emotional quality, psychological quality, problem solving ability initiative cannot show, simple practice teaching evaluation, evaluation of the education teaching results, also cannot reflect the learning results. With the openness of the teaching environment of practical teaching and the individual differences of students, such as only letting teachers as the evaluation subjects, it is easy to make the evaluation results one-sided. It is imperative to introduce multiple evaluation subjects such as student evaluation and part-time teacher evaluation in practical teaching base. At the same time, if the outcome evaluation is only based on the written materials such as practice reports, it is difficult to reflect the real learning effect of students in the present situation of developed network resources and rampant plagiarism. When asked "what form is the final evaluation", 46.73% of students chose to defend the theme to the teachers, and 47.86% of students wanted to report in the form of group report. It can be seen that the traditional final evaluation method of survey report can be "fishing in troubled waters".

#### **2.5 Lack of Long-Term Guarantee Mechanism**

According to the relevant requirements of the Ministry of Education, most colleges and universities have special funds for ideological and political courses to support the course construction and the practical teaching of ideological and political courses. However, some colleges and universities have no sense of coordination in the management of practical teaching of ideological and political courses, but simply treat it as the same as the general theoretical courses, believing that the curriculum opening units can organize ideological and political teachers to conduct course teaching by themselves. In fact, education practice teaching to fully, not only need financial support, and need the school in the logistics, secondary college with student management, school, enterprise resource sharing as a whole, establish a systematic, long-term collaborative education guarantee mechanism, and now the traditional fragmented management idea and mechanism is not conducive to the implementation of the ideological course field teaching and effect.

In short, from the point of teaching practice, education courses practice teaching or confined to the classroom, the theory teaching activities simply summarized as "in-class practice", or to college students summer social survey activities instead of education courses "extracurricular practice" and college students summer social survey activities are often lack of theoretical guidance become a mere formality. From the perspective of theoretical research, there is a lack of systematic thinking on the practical teaching system of ideological and political courses, and a lack of overall management of ideological and political course practical teaching, leading to the practical teaching of ideological and political courses is currently faced with problems such as unspecific teaching objectives, inappropriate content, non-standard teaching, unreasonable evaluation, and inadequate

guarantee.

### **3 The CDIO Concept Guides the Feasibility of Building the Practical Teaching System of Ideological and Political Courses**

Based on the analysis of the practical teaching problems of ideological and political courses, the practical teaching system of ideological and political courses should be constructed to meet the needs of talent training in applied universities. Broad practice teaching body refers to the practice teaching by the practice teaching activities of the organic whole, specific contains the goal of practice teaching system, content system, implementation system, management system and security system and other elements, their respective roles, and coordination, play the overall function of practice teaching system.[1] From the perspective of combining the content of talent training objectives and ideological and political courses, some scholars believe that the practical teaching of ideological and political courses should be systematically constructed from five levels: thought, resources, method, management and evaluation [2]. Some scholars believe that education course practice teaching should adhere to the principle of "three close to", through the "three fusion" way, based on the "series", scientific, systematic build collection management platform, teaching organization, practice, practice base and effect evaluation of "five system" in the integration of practice teaching comprehensive improvement system [3]. In short, education course practice teaching system is the teacher as the leading, the student as the main body, which is based on theory teaching knowledge, to encourage students to actively participate experience all kinds of internal and external practical activities related to curriculum content as the form, to help students understand, absorb, internalize theoretical knowledge for the purpose, to cultivate the students use the theory knowledge of thinking, analysis and problem solving ability for the sum of the teaching idea and teaching form [4]. It is an organic whole formed by the nonlinear coupling of teaching objectives, educators, educational objects, teaching contents, teaching methods, teaching carriers and other internal elements, as well as in the whole environment such as schools and society.

CDIO teaching concept is an engineering education concept that has emerged in the past 20 years. It is mainly put forward to pursue the imbalance of the balance between theoretical knowledge and practical ability. It aims to realize the integration of theory and practical teaching. CDIO is: Concept (Conceive) -Design (Design) -Implementation (Implement) -Run (Operate). CDIO education concept follows the idea of "learning by doing", emphasizes the combination of theory and practice, and pays attention to the cultivation of students' ability of learning initiative, cooperation, innovation and application. This new educational concept closely combines teaching organization with practical scenarios such as society and enterprises. Through the "project-based" learning module arrangement under the scene, students give full play to their subjective motivation, gradually realize the "integration of knowledge and action", and finally achieve teaching results, and have made remarkable achievements in the field of engineering education.

The systematic, practical, inclusive and extension of CDIO teaching concept are applicable to the practical teaching reform and innovation of ideological and political courses in colleges and universities, which can solve the outstanding problem of imbalance between knowledge mastery and practical ability of ideological and political courses. First, enhance the purpose of practical teaching, overcome the blindness of practical teaching, systematically "conceive" teaching as a whole, combine the orientation and characteristic needs of application-oriented colleges and universities, and avoid the form of practical teaching exceeding the purpose. Second, through careful design, satisfy the demands of students internalization education class value, in the face of realistic issues, the formation of project teaching organization module, collocation practice scenario, to implement "middle school", the third is the realization of the actual teaching practice system

mechanism, four is through the practice of the system structure is reasonable, internal system can continue to coordinate and orderly, and the external environment can work together, function can guarantee play results, give feedback Suggestions, and according to the Suggestions. In order to improve the level of ideological and political course practice teaching, improve the quality of talent training. The integration of theoretical and practical teaching based on CDIO concept provides an excellent paradigm for the in-depth reform of ideological and political education in colleges and universities [5].

#### **4. Ideological and Political Course Practice Teaching System Construction Path**

##### **4.1 Implement the New Ideas and Construct the System Which Is In Line With the Practical Teaching Objectives of Ideological and Political Courses in Application-Oriented Universities**

Teaching objectives in the practice teaching system guide drive and to the evaluation effect, education course practice teaching objectives for practice teaching content and teaching organization set the premise and driving direction, the whole teaching process should be around the teaching goal process, at the same time, the teaching effect achieve evaluation standard also mainly see the teaching goal setting. The teaching objectives should be refined according to the talent training needs of application-oriented universities. Applied colleges and universities pay more attention to cultivate innovative, compound, applied talents, build with the education course practice teaching objectives, to be more pragmatic to implement "education small class" and "social big classroom" concept, on the basis of education courses theory course teaching objectives, will be adapted to the professional categories to foster innovative spirit, professional spirit, improve comprehensive quality, speculative, perfect and perfect personality, reveal emotional experience and identity as the core of practice teaching goal setting, complete knowledge consolidation, ability to generate target, the unity of the value construction goal. To realize the standardization and targeted setting of the target system, and to improve the blindness of the previous practice teaching objectives.

##### **4.2 Build a Practical Teaching Content System of Ideological and Political Courses Integrated with Professional Characteristics**

The content system is the core system in the practice teaching system. Ideological course practice teaching content design should overcome the various courses in ideological course theory teaching block segmentation and the disadvantages of overlapping content, with teaching goal as the leading drive, follow the scientific, realistic and targeted principle of education courses practice teaching content combined with the theory teaching, combining the era characteristics and school characteristics, scientific integration and overall planning, make the content thematic, thematic, subject characteristic. The classification addresses the key points in the theoretical study and explains the structured theoretical content. The design is necessary.

##### **4.3 Field Construction and Teaching Design of Ideological and Political Courses**

The platform carrier, methods and main behaviors of teachers and students of ideological and political practical teaching constitute a practical teaching scene, which forms a specific field from the perspective of sociology. Building different practical teaching fields and designing teaching strategies combined with them can more effectively enhance the experience, attraction and recognition of the field, promote practical teaching to break the routine and improve the teaching effect. The practical teaching platform carrier provides the foundation for the construction of the

teaching field. Around this scene, it highlights the students' subjectivity, and organizes the teaching activities through the teaching design conforming to the field characteristics, so as to realize the innovation and optimization of teaching methods. Combined with teaching practice, the classroom practice field is designed, the situation is assumed, and students are guided to participate in and discuss speculation through group cooperative practice projects such as special course homework presentation, hot case debate and theme salon. Xi general secretary in the national ideological and political work conference said that "to use new media technology to make work alive, promote ideological and political work traditional advantages with information technology, enhance age and appeal" [6] therefore, can be innovative classroom practice field of virtual scene, increase ideological virtual simulation practice teaching project, using VR, AR virtual technology to realize student experience of ascension. At the same time, the digital database of ideological and political practice teaching should be established or updated, and the network learning platform should be well used to complement the database. Real classroom and virtual classroom should be fully coordinated and effectively complement each other. Expand the practice field in the school, on the basis of giving full play to the guiding role of ideological and political teachers, with the help of the study scene of the second classroom and holiday practice survey, to realize the collective practice learning experience of students. Open up multi-directional social practice fields, rely on local resources, such as industry backbone enterprises, red education bases, typical communities, towns and villages and other social practice bases to meet the needs of practical teaching, broaden students' vision, improve their cognitive ability, and strengthen value identification. In short, the teaching design should highlight the control of ideological and political teachers in the teaching field, and design the corresponding standard and complete teaching design to complete the teaching activities.

#### **4.4 Build a Scientific and Reasonable Comprehensive Assessment and Evaluation System**

Build a comprehensive assessment and evaluation system of teachers, students and schools with the participation of multiple subjects. Teachers are the leading players in students 'assessment and evaluation. They should adhere to the combination of process and result assessment, form a comprehensive and dynamic process evaluation standard of comprehensive and multi-level indicators, and quantify students' learning performance. Students are the object and subject in the assessment and evaluation. The project operation of the learning content enables students to better understand each other's learning degree. Therefore, the assessment and evaluation should also be used to realize students' self-evaluation and mutual evaluation. The administrative department of the school has the responsibility of guaranteeing and supervising ideological and political practice teaching. At the same time, as a part of teaching supervision, it should also conduct top-level assessment of teaching content, teaching implementation plan, teaching organization and operation, and establish the monitoring and feedback system of teaching quality monitoring of ideological and political courses. The trinity linkage assessment mechanism of teachers, students and schools can comprehensively evaluate the implementation of ideological and political practice teaching more reasonably, and improve the practical teaching effect and teaching quality of ideological and political courses.

#### **4.5 Optimize the Practical Teaching Guarantee System**

In order to ensure the effectiveness of practical teaching of ideological and political courses, the guarantee system should play a synergistic effect in the whole process of ideological and political teaching under the collaborative mechanism of ideological and political education, from the aspects of policy system, leadership organization management, the construction of teaching staff and the

allocation of special funds. We should improve the teaching system of ideological and political courses in colleges and universities, follow the principles of pertinence, standardization and operability, and formulate relevant systems according to the national and local teaching guidelines at the macro level. Micro-boon, the specific plan will be implemented in place, clear responsibilities and tasks. Strengthen the organization and management of leaders. Although the practical teaching of ideological and political courses is mainly implemented by teachers, the leading organizations at the two levels of the school and college should establish a normative teaching order, and guarantee the logistics and safety of practical teaching activities. Strengthen the introduction and training of ideological and political teachers, enhance professional skills, at the same time in teaching practice, to provide experience for the next round of teaching. Colleges and universities should also allocate special funds for ideological and political courses in time to ensure that the practical activities are supported by funds and that the practical teaching of ideological and political courses can be carried out effectively.

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### References

- [1] Wu Guoying. *Research on the construction of practical teaching system of humanities and Social Sciences in universities—Based on marketing concept*, Tianjin: doctoral thesis of Tianjin University, 2010.85.
- [2] Xu Yanqiu. *Thoughts on constructing the practical Teaching System of Ideological and Political Theory course in Colleges and universities*, *Educational Exploration*, 2013 (9): 124-125.
- [3] Zhang Chunhe. *Exploration and Construction of practical Teaching System of Ideological and Political Theory Course in Colleges and universities in the New Era*, *School Party Building and Ideological Education*, 2018 (17): 55-62.
- [4] Sujanta Kazemanzadeh. *Distributed System Integrating Virtual Reality Technology in English Teaching. Distributed Processing System* (2022), Vol. 3, Issue 1: 62-70.
- [5] Ye Jin, Dong Yuyu. *Research on Practical Education of Ideological and Political Education in Universities based on CDIO concept*, *Journal of Nanjing University of Aeronautics and Astronautics (Social Science Edition)*. 2021, 23(02): 103-107.
- [6] *At the National Conference on Ideological and Political Work in Colleges and Universities, Top leaders of China stressed that the ideological and political work runs through the whole process of education and teaching to create a new situation for the development of higher education in China. People's Daily*, 2016-12-09 (1).