

# Exploration and Construction of the Assessment System for the "Electrical and Electronic Technology" Course in the Context of Ideological and Political Education

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**Abstract:** With the deepening of educational reform, the significance of ideological and political education in higher education is increasingly evident. This paper focuses on the assessment system of the "Electrical and Electronic Technology" course in the context of ideological and political education. Through literature research and analysis, it identifies the current situation and issues related to ideological and political education in the course. Furthermore, it explores and analyzes the strategies for constructing the ideological and political teaching and assessment system in the "Electrical and Electronic Technology" course. As a result, a comprehensive assessment system is established to ensure that the design and implementation of ideological and political education in the course aligns better with students' learning needs. This research offers new insights and approaches for improving the quality of ideological and political education and serves as a valuable reference for future educational reform practices.

## 1. Introduction

Since 2017, with the increasing attention paid to ideological and political education in higher education by the country, universities across the nation have actively responded and vigorously promoted the reform of classroom teaching with the goal of "ideological and political education integrated into the curriculum". Adhering to the centrality of moral education in cultivating students, and integrating ideological and political work throughout the entire process of education and teaching, efforts have been made to achieve holistic and comprehensive education, striving to create a new situation in the development of higher education in our country<sup>[1]</sup>. In this context, as a basic compulsory course for non-electrical engineering majors, "Electrical and Electronic Technology" aims to cultivate students' scientific thinking ability and innovation ability, improve students' ability to analyze and solve problems, and also needs to guide students to form correct outlook on life, values, and worldviews through ideological and political education. This requires that universities integrate the theoretical knowledge of the course "Electrical and Electronic Technology" with ideological and political education, guiding students to establish correct values, and cultivate their patriotic spirit and sense of social responsibility<sup>[2]</sup>.

As the main channel for students to acquire knowledge and skills, the teaching classroom also bears the essence of "educating people". The integration of ideological and political education into the "Electrical and Electronic Technology" course enhances the guidance of students'

thoughts by professional courses, and enables ideological and political courses and engineering courses to work together in the process of education, forming a synergistic effect. The scientific and reasonable evaluation of the effectiveness of course ideological and political education can measure the degree of implementation of course ideological and political education, directly reflect the success or failure of implementing ideological and political education, and provide a huge driving force for innovation and reform in the implementation process of ideological and political education in the "Electrical and Electronic Technology" course. The evaluation results will be beneficial for teachers to adjust their teaching strategies and improve the implementation of ideological and political education in accordance with the actual situation of students<sup>[3]</sup>. This article aims to explore the construction of the assessment system for ideological and political education in the "Electrical and Electronic Technology" course in order to meet the needs of student cultivation in the context of the new era. By revealing the core elements of ideological and political assessment, designing assessment methods and evaluation indicators, and establishing a sound assessment and evaluation mechanism, the effectiveness and scientificity of ideological and political education will be improved.

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## **2.Current research status of ideological and political assessment system for courses**

### **2.1.Domestic research status**

At present, the research focus of ideological and political education in various disciplines mainly lies in exploring the methods of extracting ideological and political education elements from the curriculum and investigating the approaches to integrating these elements into classroom teaching. In the reform and practice of the curriculum ideological and political teaching model, the research primarily focuses on teaching objectives and content. By delving deeper into the ideological and political elements and using case studies as examples in curriculum ideological and political education, students' interest in learning can be stimulated, and their enthusiasm can be aroused, thereby achieving the goal of ideological and political guidance. However, the research on the evaluation and assessment of curriculum ideological and political teaching is still not specific enough and lacks detail. Classroom teaching is an important component of educational activities in universities, and it is also the main battlefield for curriculum ideological and political construction. A scientifically and effectively designed teaching assessment system contributes to the development of curriculum ideological and political education in higher education institutions. Therefore, it is currently essential to focus on improving the assessment system for curriculum ideological and political teaching, constructing practical quantitative indicators, and promoting the continuous development of curriculum ideological and political education [4].

### **2.2.Current research status abroad**

Through literature research, it is found that the concept of "curriculum ideological and political education" is not explicitly mentioned in foreign countries. However, similar educational ideas such as values education, moral education, and civic education exist, which bear a striking resemblance to the curriculum ideological and political education in China [5]. The essence of these concepts is to influence students' values and cultivate value concepts that align with the national development requirements through curriculum teaching. For example, in the United States, ethical education primarily focuses on creating a favorable moral education environment to influence students' character, and also incorporates moral education content implicitly in subject teaching, which coincides with the concept of curriculum ideological and political education in China. In American schools, moral education is mainly concentrated on civic education and moral education. Civic education aims to teach students about American laws and regulations, understand citizen rights, become law-abiding citizens, and learn to care for their families [6]. Moral education, on the other hand, emphasizes the cultivation of students' moral character, familiarizing them with moral principles and providing appropriate guidance through actions, thereby instilling

moral aspirations and fostering correct values in students [7].

In the United States, the evaluation system for ethical education is a significant assessment tool. It aims to measure students' development in character and civic awareness. The evaluation system mainly includes core values assessment, such as fairness, respect, responsibility, integrity, etc.; personal traits assessment, which evaluates students' behavior and personal qualities, such as discipline, cooperativeness, self-confidence, etc.; teacher evaluation and observation, where teachers assess students' moral development through classroom observations, participation, and individual communication; and family assessment, where schools may require families to participate in students' ethical assessment, such as filling out questionnaires, attending parent meetings, etc [8]. The purpose of the ethical education evaluation system in the United States is to cultivate students' good character and civic awareness, provide feedback and support to help students grow continuously. It can also assist schools and educators in identifying the effectiveness of teaching methods and intervention measures to better meet students' needs.

## **3.Measures for the reform of ideological and political assessment in the course "Electrical and Electronic Technology"**

### **3.1.An analysis of the current status of the ideological and political assessment system in the course "Electrical and Electronic Technology"**

A total of 45 papers were found through the CNKI theme word search for "Curriculum Ideology and Politics in Electrical and Electronic Technology". By analyzing the distribution of secondary themes, it was discovered that the main focus lies in curriculum development related to ideological education, ideological elements, and teaching reform. However, research on the assessment system has not yet emerged as a major theme. Therefore, it can be seen that the current focus of the curriculum's ideological and political aspects in electrical and electronic technology is mainly on the construction of the ideological and political curriculum. The assessment aspect of curriculum ideology and politics is still relatively lacking.

As a fundamental course in the field of electrical and electronic technology, it is essential to integrate ideological and political education into the teaching process in order to enhance students' moral and ethical levels and overall qualities. However, in actual teaching, the majority of teachers only focus on imparting ideological and political theories, neglecting the assessment of students' practical abilities and moral character. This approach leads to students' lack of attention to ideological and political education, which can easily result in a disconnection between the goals of the curriculum's ideological and political aspects.

The assessment system is not comprehensive, and the assessment format is monotonous. Currently, many

schools use traditional written exams to assess ideological and political aspects, even in practical courses such as "Electrical and Electronic Technology". This format cannot effectively evaluate students' overall qualities and innovative abilities. It is necessary to consider introducing more practical operations and projects to assess students' comprehensive abilities. At present, the assessment criteria for curriculum ideology and politics have not been established, and there are no clear grading details and evaluation indicators, leading to a strong subjectivity in the assessment results. It is important to establish a scientific and reasonable assessment criteria, clarify the weight and scoring rules for each indicator, and make the evaluation more objective and fair.

### **3.2.Thoughts on constructing the ideological and political teaching and assessment system for the course "Electrical and Electronic Technology"**

In order to enhance the effectiveness of ideological and political education, it is essential to actively establish a corresponding learning and assessment system for curriculum ideology and politics. Without such a system in place, students may perceive these contents as not requiring assessment and naturally, not give them much importance. From the perspective of teachers, it is difficult to determine whether teaching objectives have been achieved or if teaching reforms have been successful, which may gradually diminish teachers' motivation for reform. The reform of assessment methods for students' learning outcomes has always been a focus in higher education. An improved assessment system for learning outcomes can stimulate students' enthusiasm for learning, evaluate teaching quality to some extent, and promote teaching reforms. When assessing the effectiveness of curriculum ideology and politics teaching, it is necessary to consider evaluating different teaching contents as well as the implementation results. Therefore, selecting appropriate evaluation methods in the evaluation process is particularly important. Hence, the design for constructing a curriculum ideology and politics assessment system can be outlined through the following approach.

(1) Establishing a curriculum ideology and politics assessment system by clearly defining the goals, content, and methods of ideological and political assessment. The purpose of curriculum ideology and politics assessment is to cultivate students' moral and ethical levels, enabling them to possess good ethical values and professional ethics, solid professional knowledge and skills, as well as innovative spirit and practical abilities, in order to contribute to the development of the nation and society. The assessment content mainly evaluates students' thoughts, emotions, values, cognition, and other aspects based on the assessment objectives.

(2) Developing assessment criteria for curriculum ideology and politics and quantifying assessment scoring standards. Quantitative evaluation of curriculum ideology and politics refers to the formulation of a quantitative table for the elements involved in the implementation of

curriculum ideology and politics. This evaluation method infers the effectiveness of curriculum ideology and politics through the magnitude of mathematical statistical measures. Quantitative evaluation of curriculum ideology and politics imposes strict requirements on the objectivity of assessment. Its advantages lie in the ability to establish quantitative standards, which helps avoid subjective arbitrariness on the part of the assessor. However, its disadvantage lies in the difficulty of purely quantifying ideological and political elements in terms of technical measurement.

(3) The implementation of curriculum ideology and politics teaching assessment. During the assessment process, emphasis is placed on integrating the evaluation weight of curriculum ideology and politics. The assessment process is divided into three main parts: diagnostic evaluation, process evaluation, and outcome evaluation. Within each assessment indicator, ideology and politics evaluation is integrated. For example, diagnostic evaluation can be done through pre-tests to understand students' self-learning situations. Process evaluation can assess students' language expression skills through their classroom performances, evaluate their professional demeanor during teaching practice sessions, and assign mind-expanding questions after class. In outcome assessment, both theoretical and practical aspects incorporate ideological and political assessment points, combining diagnostic evaluations prior to the course and process evaluations during the course to form scientifically standardized results of ideological and political assessment<sup>[9]</sup>.

### **4.Construction of the ideological and political assessment system for the course of Electrical and Electronic Technology**

The construction of a curriculum ideology and politics assessment system in universities primarily involves the evaluation of ideological and political elements, assessment methods, and assessment objectives. Without an effective curriculum ideology and politics teaching assessment system, it is difficult to determine whether the desired outcomes of curriculum ideology and politics have been achieved. Therefore, establishing a curriculum ideology and politics assessment system is particularly crucial and is currently a key focus and challenge in curriculum ideology and politics<sup>[10]</sup>.

#### **4.1.Elements of curriculum ideology and politics assessment in the "Electrical and Electronic Technology" course**

The elements of curriculum ideology and politics assessment serve as evaluation indicators for the comprehensive development of students. They require students not only to master the theoretical knowledge and skills of electrical and electronic technology but also to focus on cultivating their moral and ethical qualities, thus making them become successors of socialism. The main

elements of curriculum ideology and politics assessment in the "Electrical and Electronic Technology" course include: ideological and moral character, patriotism, scientific spirit, professional ethics, innovative mindset, teamwork, and self-learning ability. These elements are manifested as follows: students possess a correct outlook on life, values, and the world, along with a sense of social responsibility and professional ethics. They pay attention to the development needs of the nation and society, recognize the important role of electrical and electronic technology in national and social development, and are willing to dedicate their lives to the development of the country. They have a strong sense of innovation and the ability to adapt actively to technological advancements, constantly exploring and innovating. They have practical skills and problem-solving abilities. They possess good teamwork, communication, coordination skills, leadership abilities, and professional qualities required to become competent electrical and electronic technology professionals.

#### 4.2. Designing diversified assessment methods and evaluation indicators

Designing diversified assessment methods and evaluation indicators can ensure a comprehensive evaluation of students, not limited to traditional written exams. The assessment structure for this course is shown in Table 1, which includes diagnostic assessment, process assessment grades, and summative evaluation.

**Table 1.** Ideological and Political Assessment Form for the Course of "Electrical and Electronic Technology"

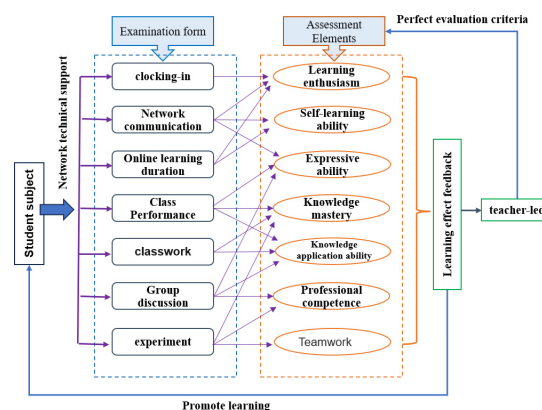
Evaluation method	Assessment Elements	Examination form	evaluation subject
Diagnostic evaluation (10%)	Self-learning ability(10%)	clocking-in Learning duration on Chaoxing	Chaoxing
Process evaluation (40%)	Learning enthusiasm(10%) Expressive ability(10%) Professional competence(10%) Teamwork(10%)	school assignment Class Performance Performance experimen Group discussion	teacher Student groups
Resultant evaluation; (50%)	Knowledge application ability(25%) Knowledge mastery(25%)	Final Exam	teacher

By utilizing the Chaoxing Learning Platform software to establish an online course, scoring weights can be set on the grade management page, and students can view their course scores in real-time. Online grades are automatically generated by the Learning Platform, while the scores for offline teaching activities are regularly inputted into the system of Chaoxing by teachers. The transparency of the grades allows students to have a clear understanding of their performance, and periodic grade rankings provided by teachers serve as a warning for students whose scores are lower, while also motivating high-achieving students to maintain their learning enthusiasm. This approach enhances students' sense of

achievement and urgency in learning and effectively prevents them from losing their focus and maintaining their enthusiasm for learning.

#### 4.3. Establishing a sound assessment system for ideological and political courses

A comprehensive nested multi-dimensional evaluation system is established for assessing ideological and political courses. The assessment system evaluates students from various aspects, including their learning motivation, self-learning abilities, expressive ability, knowledge mastery, comprehensive application of knowledge, professional ethics, and teamwork abilities, as shown in Figure 1. This system, with students as the main participants and teachers as the main guiding force, assesses and evaluates the ideological and political elements of the courses from multiple dimensions. Through the release of course assignments, attendance records, classroom discussions, online teaching videos, and other teaching activities on the Chaoxing Learning Platform, each activity is associated with corresponding assessment indicators for ideological and political elements. Students earn points by participating in these activities, and the sum of these points constitutes their regular assessment grades. By utilizing the data available on the Chaoxing Learning Platform, teachers can stay updated on students' learning progress in a timely manner, enabling them to reflect on and improve the teaching process, ensuring the integration of ideological and political education throughout the entire classroom teaching. This approach helps to effectively stimulate students' interest in learning and enhance their sense of achievement.



**Figure 1.** Ideological and Political Assessment System for the Course of Electrical and Electronic Technology

#### 5. Conclusions

since the concept of integrating ideological and political education into the curriculum was proposed, it has become a hot topic in educational reform research. Through literature analysis, it is found that the current focus of integrating ideological and political education into the curriculum lies in the exploration of key points and the reform of teaching system. Significant progress has been made in theoretical exploration and practical experience.

However, there is still a lack of research on the assessment of integrating ideological and political education into the curriculum, and a closed loop from practice to assessment to improvement has not yet been formed. Therefore, in order to further promote the construction of integrating ideological and political education into the curriculum, it is urgently needed to establish a scientific and reasonable assessment system. By scientifically and normatively evaluating the elements of integrating ideological and political education into the curriculum, it can better and faster promote the construction of integrating ideological and political education in universities, and promote the development and progress of ideological and political education in China.

Therefore, this study attempts to construct an assessment system for integrating ideological and political education into the "Electrical Engineering and Electronic Technology" course, formulates the assessment elements for integrating ideological and political education into the course, clarifies the evaluation criteria and methods, and improves the fairness and scientific nature of the assessment. This will make the design and implementation of integrating ideological and political education more in line with student needs, make course organization and teaching methods more interesting to students, better stimulate their initiative and enthusiasm, ensure that the design of teaching objectives, teaching methods, and teaching management are closer to students' learning habits and reflect their needs, and maximize the role of integrating ideological and political education in inspiring student thinking and leading values. It actively guides students to establish correct values, enhances their comprehensive abilities, and further promotes the development of ideological and political education.

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## References

1. Ministry of Education of the People's Republic of China Notice of the Party Group of the Ministry of Education of the Communist Party of China on Issuing the Implementation Outline of the Project for Improving the Quality of Ideological and Political Work in Universities [EB/OL]. (2017-12-05). [http://www.moe.gov.cn/srcsite/A12/s7060/201712/t20171206\\_320698.html](http://www.moe.gov.cn/srcsite/A12/s7060/201712/t20171206_320698.html).
2. Zhang Chun, Liu Hui, Yu Peng, et al. Exploration of the Reform of Assessment Methods for Materials Science Basic Courses under the Background of Curriculum Ideology and Politics [J]. *Modern Education Equipment in China*2023(17):114-116
3. Meng Na, Wang Sheng, Liu Heng, et al. Analysis of Evaluation Methods for the Effectiveness of Ideological and Political Education in Engineering Courses: Taking "Electrical and Electronic Technology" as an Example [J]. *Times Automotive*,2023(18):40-42.
4. Sun Yalun Research on the Construction of Evaluation Index System for Ideological and Political Education in Higher Education Courses [D]. Northeast Petroleum University,2023
5. Neil Hawkes. Values and Quality Teaching at West Kidlington Primary School[M].*Values Education and Quality Teaching*. Springer Netherlands, 2009:8-40.
6. Jialong Sun. Study on Ideological and Political Work in College from the Perspective of Moral Education[J]. *The Frontiers of Society, Science and Technology*,2020,2(2).
7. Aimin,T. The Authentic Moral Life and the Development of Life Resources inMoral Education Curriculum[J]. *Curriculum Teaching Material & Method*.2007.05.
8. Naomi Keeru Kithure,Eric Mwenda E.G,Martha Wanjiru Muraya,Job Mulati.The Impact of Samburu Culture on the Development of Western Education inSamburu Community during The Colonial Period In Kenya.[J]. *Research on Humanities and Social Sciences*,2013
9. Yao Zhiying, Cao Haiqing. Practice and Exploration of Ideological and Political Education in Professional Courses under the Background of New Engineering: Taking the Course of Electrical and Electronic Technology as an Example [J]. *Modern Commerce and Industry*,2023,44(21):205-207.
10. Wang Yuming. The Value, Difficulties, and Optimization Strategies of Constructing an Evaluation System for the Effectiveness of Ideological and Political Education in Higher Education Courses [J]. *Journal of Xinxiang University*,2023,40(10):