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# Research on the Integration of Theory and Practice Teaching Mode Based on "Core Literacy"

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**Abstract**
*Core literacy is a key minority of high-level behavioral abilities that everyone needs to possess in the 21st century. It is the integration and integration of knowledge, skills and attitudes. The quality of university's "core literacy" talent training has become an important factor affecting China's comprehensive national strength and international competitiveness. This paper puts forward a teaching mode of integration of theory and practice based on the mixed concept of "core literacy". Combining with the actual situation of electrical specialty, this paper focuses on exploring the teaching mode of integration and development of innovation ability, practice ability and humanistic literacy. After teaching practice, good results have been achieved.*

**Keywords**
*Core competence; blended learning; integration of theory and practice; basic courses in electrical specialty; teaching mode*

## I. Introduction

With the development of the times and the increasingly fierce international competition, the society has put forward higher requirements for people's comprehensive literacy and innovation ability, and education is facing greater challenges. Core literacy is a key minority of high-level behavioral abilities that everyone needs to possess in the 21st century[1]. It is the integration and integration of knowledge, skills and attitudes. The cultivation of high-quality innovative talents and applied talents in key fields is of great practical significance to the formation of core competitiveness in the international high-tech field. Therefore, the quality of university's "core literacy" talent training has become an important factor affecting China's comprehensive national strength and international competitiveness, and is the core task of China's talent strategy in the new era.

On March 30, 2014, the Opinion of the Ministry of Education on Fully Deepening Curriculum Reform and Implementing the Fundamental Task of Lide Shuren was officially issued[2]. The Opinions clarifies six core qualities that students should possess to meet the needs of lifelong development and social development: innovation ability, critical thinking, citizenship quality, cooperation and communication ability, self-development ability and information literacy. It sets a strategic focus for promoting the modernization of education. Among them, innovative ability is the focus of China's "core literacy", and cultivating innovative talents is the preferred goal of China's education.

The theoretical basis of this study is the "core literacy" theoretical system and the constructivist "teaching and learning" theory. Combining with the pilot project of school education informatization, according to the rapid development of basic courses of electrical specialty, the close combination of theory and practice, the strong applicability of its own characteristics and the learning mode of information technology for college students. The rapid change of has resulted in the integration of the blended teaching mode with the integration of theory and practice[3]. Through teaching practice, good teaching results have been achieved.

## II. Current teaching situation of electrical basic courses in Colleges and Universities

The core literacy research started from the worldwide upsurge of core literacy is essentially a movement to upgrade the quality of education, not a separate voice of our country, but a concentrated reflection of international educational competition, a world trend. The end of twentieth Century and the beginning of twenty-first Century are the interchanges of international education reform. International organizations, countries and regions all over the world have different understandings of the orientation of educational reform, but they all focus on core literacy research. Up to now, it has formed a relatively perfect content structure, curriculum system and quality assurance system, and has become a pillar concept to promote curriculum reform in western developed countries[4]. However, because of the early development of innovative quality education in foreign countries, in order to cultivate talents with innovative consciousness and ability, the teaching ideas emphasizing inquiry and discovery have gradually become the mainstream of the development of teaching ideas.

Under the background of globalization and technological revolution, Chinese universities are facing unprecedented challenges. The traditional teaching methods in our country still occupy a dominant position in Colleges and universities. Accumulating and learning the knowledge heritage left by predecessors has become almost the whole content of higher education. The unreasonable teaching methods and assessment methods have led to the decline of students'learning enthusiasm, so that many students in the first and second grade of professional basic courses have not laid a solid foundation, and later professional courses simply do not understand, and finally even give up learning. How to cultivate students'independent innovation ability, ensure students' learning of professional basic courses, and stimulate their learning motivation for professional basic courses is an important part of the teaching reform of professional basic courses. Although China's higher education has entered the track of rapid development, the quality of innovative talents training in universities has been plagued by the higher education circles and even the whole society. How to cultivate innovative talents with "core literacy" has become the primary problem faced by universities. At present, key universities in China have fully realized the importance of the core literacy system of students'lifelong learning and the cultivation of independent innovation ability, and have begun to carry out corresponding reforms and explorations in order to meet the urgent requirements of collaboration, communication, critical thinking and creative and innovative talents cultivation in the new era.

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## III. Analysis of the integration of theory and practice teaching mode based on "Core Literacy

For students majoring in electrical engineering, innovation ability is the core of "core literacy", and training innovative talents is the priority goal of Chinese education.

1. Taking students as the main body, updating teaching contents and improving teaching mode

(1) Updating teaching contents

According to the rapid development of basic courses of electrical specialty, the close combination of theory and practice, the strong application of its own characteristics and the integration of theory and practice of teaching mode, the textbooks are revised. The core of textbook compilation is "learning by doing, learning by doing". In addition to theoretical explanation, each part of the content adds a comprehensive training link of circuit design and production, which constitutes the basic framework of the integrated teaching process of "theory, simulation, design, experiment and test". There are abundant cases and its practicability is relatively strong. Teaching content simplifies tedious mathematical derivation, focusing on analysis and application. The reorganized theoretical teaching content and practical teaching content are unified. The relationship between the updated content and the traditional classical content, the relationship between basic theory and practical application are better handled, and the cultivation of students'practical and innovative ability is realized to the greatest extent.

(2) Improving teaching mode

Both mixed teaching and practical integration teaching models follow the constructivism educational concept of "teacher-led, student-centered". This model gives full play to the advantages of the combination of online and offline teaching modes. Through intensive lectures in class, active exploration and discovery after class, cooperative learning can be organized independently, which can save students a lot of time in class and enhance their practical ability. That is to realize the combination of theory and practice, and also realize the combination of independent learning and cooperative learning[5]. Combining with each other, we can form a new learning mode which can not only play the leading role of teachers, but also embody students'autonomous learning. Combining with the actual situation of electrical specialty, we try to explore the teaching form of integration development of innovation ability, practice ability and humanistic quality, and finally form a rational and practical integrated teaching mode based on the mixed concept of "core literacy".

2. Teaching conditions and guarantee

(1) Strengthening teacher team building

We should combine the characteristics of "core literacy" personnel training, renew the educational concept, strengthen the construction of teachers'team, actively provide conditions for teachers to go out for training, improve the level and connotation of team teachers' own skills, enhance the quality of team teachers, and form a noble teacher's morality, advanced educational concept, reform consciousness and possession. Teaching staff with high teaching level and strong practical ability.

(2) Creating an information-based learning environment

The comprehensive platform of network teaching in schools and the wireless network covered by the whole school have built a network teaching platform with rich resources for the implementation of the integrated teaching mode based on the mixed concept of "core literacy". The network teaching platform of this course effectively integrates informationization with the construction of electrical basic courses, expands the traditional classroom teaching space into an open space, solves the space-time limitation of classroom teaching, expands a broader, more powerful and more convenient new classroom for teachers to achieve their teaching objectives, and provides a basic course theory of this kind. The implementation of the integrated teaching mode has successfully implemented an ideal information learning environment.

(3) Equipped with portable test box

Innovative talents with core literacy have to face more complex technology and technology, and have higher requirements for hands-on ability and self-learning ability. In order to facilitate students to practice, explore and innovate, combined with the practical and engineering characteristics of the basic courses of electrical specialty, the college invests in equipping portable test boxes, which provides a guarantee for the implementation of practical integration teaching.

3. Design and practice of integration of theory and practice teaching mode based on "core literacy"

According to the integrated teaching mode based on the mixed concept of "core literacy", the implementation scheme of the teaching design of basic courses of electricity is shown in Figure 1.

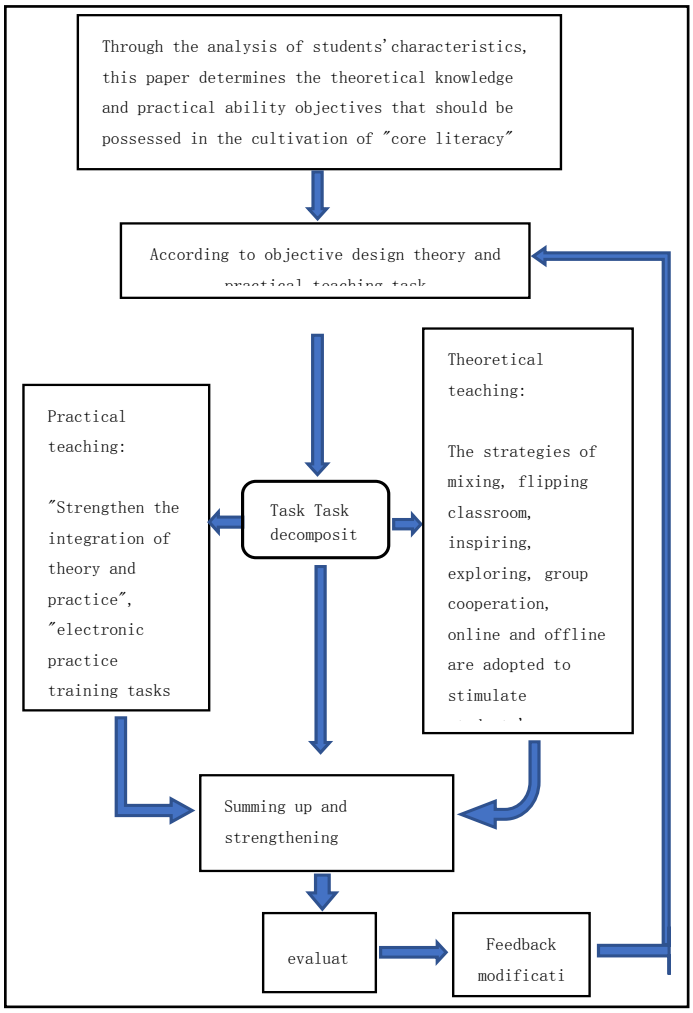


Fig. 1 : Block diagram of teaching plan for electrical basic courses

Among them, mixed teaching adopts the "three points and two lines" type, namely, pre-class, in-class and after-class three time nodes and online and offline two forms of design teaching, teachers and students respectively complete different teaching tasks.

4. Improve the way of evaluation

In the course of course construction, according to the characteristics of the basic courses of electricity, the evaluation mode that conforms to the new teaching mode is gradually improved. Teaching evaluation uses the method of combining process and finality to evaluate students'learning situation, which not only evaluates theory but also emphasizes ability. In peacetime and final grades, 50% of the grades include team performance and personal performance. The results of team activities include task performance and results display of team classroom activities; the results of individual activities include network testing + hands-on practice + others (attendance, homework, participation in classroom activities, project and related innovative practice results, etc.). In order to better evaluate students'mastery and application of knowledge and avoid cheating in final exams, we should continue to increase the proportion of process assessment in the future, and build a more scientific, rational, standardized and easy-to-operate formative assessment from the aspects of evaluation objectives, evaluation indicators, evaluation methods and developmental evaluation plan.

## IV. Conclusions

Based on the mixed concept of "core literacy", the research and exploration of the integrated teaching mode of rationality and practice has just begun. This kind of teaching mode can improve students'comprehensive quality and international competitiveness in an all-round way, and adapt to the requirements of talents in the information age. Combining with the characteristics of the basic course of electrical specialty, it not only integrates the advantages of traditional classroom teaching and network teaching in teaching practice, but also provides students with a complete and real task background for knowledge points in teaching, stimulates students'creative desire, and trains them through electronic practice. In order to improve the students'ability of cooperation and communication, practice and innovation, a teaching mode with the integration of theory and practice as the core is established. Since 2016, two rounds of teaching practice have been carried out and good teaching results have been received. But there are also many difficulties in the course implementation, such as the allocation of practical time and theoretical teaching time, the implementation of network teaching needs more time from teachers and students, the design of topics should be diversified to suit students at different levels, and the proportion of process assessment can better evaluate students'knowledge. The mastery and application of knowledge need to be improved in the future teaching and research process.

## V. AcknowledgEment

**T**he heading of the Acknowledgment section and the References section must not be numbered.

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