

# *The Practical Effects and Evaluation Methods of Interdisciplinary Integrated Teaching in Basic Education*

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**Abstract:** As an important innovative approach in the field of basic education, interdisciplinary integrated teaching aims to break the limitations of traditional single subject teaching, broaden students' horizons, and cultivate their core competencies for comprehensive growth. In the current context of basic education reform, interdisciplinary integrated teaching not only solves the problems of fixed thinking and one-sided perspectives in traditional teaching, but also provides students with a more comprehensive and diverse learning experience. Interdisciplinary integrated teaching enhances students' understanding and application of basic knowledge. By integrating knowledge and methods from different disciplines, students can gain a deeper understanding of problems, form a more complete and systematic knowledge system, and increase their interest and participation in learning. The diverse learning content and methods stimulate students' curiosity and thirst for knowledge, making them more proactive in their studies. In addition, interdisciplinary integrated teaching also promotes the integration between disciplines and the cultivation of comprehensive literacy, which helps to cultivate composite talents with interdisciplinary thinking and innovation abilities. This article explores the practical effects and evaluation methods of interdisciplinary integrated teaching in basic education.

## **1. Introduction**

In today's ever-changing era, education is facing unprecedented challenges and opportunities [1]. The traditional single subject teaching model, although having its inherent advantages, appears inadequate in cultivating students' comprehensive literacy and innovative ability [2]. Therefore, interdisciplinary teaching has emerged as an important teaching method in the field of education. Interdisciplinary integration refers to a learning approach that utilizes knowledge from other disciplines to broaden the scope of knowledge in one's own discipline [3]. This integration is not only a simple superposition of knowledge, but also a deep understanding and innovative application of knowledge. Through interdisciplinary integration, students can understand and comprehend problems from multiple perspectives and levels, thereby cultivating more comprehensive and in-depth thinking patterns and problem-solving abilities [4]. In modern society, the integration and infiltration of interdisciplinary knowledge has become a trend. Whether it is scientific research, technological innovation, or solving social problems, interdisciplinary knowledge and skills are

required [5]. Therefore, interdisciplinary teaching is not only an inevitable trend in modern curriculum reform, but also an important way to cultivate the talents needed by future society.

Traditional single subject teaching often suffers from a single knowledge structure and an excessive emphasis on subject knowledge orientation [6]. This teaching method often leads students to only learn and think in a narrow field, lacking understanding and recognition of other subjects [7]. However, in real life, problems often have complexity and comprehensiveness, requiring the comprehensive application of knowledge and skills from multiple disciplines to solve them. Therefore, viewing practical problems through interdisciplinary integration in a cognitive way is more in line with the cognitive growth laws of students, which helps to improve the problems of fixed thinking and lack of innovation in traditional teaching. The principles and theoretical foundations of interdisciplinary teaching are reflected in multiple aspects. Firstly, it is a concrete manifestation of the comprehensive principles of education. According to the comprehensive principles of education, disciplines are not isolated, but rather permeate and promote each other. By organically integrating knowledge and skills from different disciplines, students can better understand and apply knowledge, forming a more complete and systematic knowledge system.

Secondly, interdisciplinary teaching emphasizes that teaching should be close to real-life situations. Interdisciplinary teaching emphasizes the combination of learning content and practical situations, allowing students to learn and apply knowledge in real-life situations, thereby cultivating their practical abilities and innovative spirit. In addition, interdisciplinary teaching also emphasizes the cultivation of students' comprehensive literacy. Traditional teaching methods often place too much emphasis on imparting knowledge and training skills, while neglecting the cultivation of students' comprehensive literacy. Interdisciplinary teaching requires students not only to master the knowledge and skills of various disciplines, but also to be able to organically integrate them and form comprehensive abilities. This ability includes not only the understanding and application of knowledge, but also various qualities such as innovative thinking, critical thinking, and problem-solving ability. Therefore, we should actively explore and practice interdisciplinary teaching methods and strategies, and make positive contributions to cultivating talents with comprehensive literacy and innovative spirit.

## **2. The Application of Interdisciplinary Integrated Teaching in Basic Education**

### **2.1. The Basic Connotation of Interdisciplinary Integrated Teaching**

Interdisciplinary integrated teaching is an innovative teaching method that breaks the boundaries between traditional disciplines and organically integrates knowledge and skills from different disciplines, forming a new teaching model [8]. This teaching method emphasizes the comprehensiveness, coherence, and innovation of knowledge, aiming to cultivate students' interdisciplinary thinking and problem-solving abilities [9]. In the basic education stage, interdisciplinary integrated teaching is particularly important. It can not only broaden students' knowledge perspective, enhance their understanding and application ability of knowledge, but also stimulate their learning interest and creativity, and improve their comprehensive literacy. Through interdisciplinary integrated teaching, students can be exposed to more diverse knowledge content, cultivate interdisciplinary thinking, and enhance their ability to solve practical problems [10].

The basic connotation of interdisciplinary integrated teaching includes the following aspects. Firstly, it emphasizes the inherent connections and mutual penetration between different disciplines. By organically integrating knowledge and skills from different disciplines, a more complete and systematic knowledge system can be formed, helping students better understand and apply knowledge. Secondly, interdisciplinary integrated teaching focuses on cultivating students' innovative thinking and practical abilities. By guiding students to participate in interdisciplinary

projects, practical activities, etc., it is possible to stimulate their learning interest and creativity, and cultivate their innovative and practical abilities. Finally, interdisciplinary integrated teaching also emphasizes the subjectivity and initiative of students. It encourages students to actively participate in the learning process, explore and solve problems independently, and cultivate their self-learning and lifelong learning abilities.

## 2.2. Enriching Classroom Content

Under the traditional teaching model, the classroom teaching content of basic education subjects is often limited to specific subject areas, lacking diversity and innovation. However, interdisciplinary integrated teaching injects new vitality into classroom content, making classroom teaching more diverse and colorful. Firstly, interdisciplinary integrated teaching can organically integrate knowledge from different disciplines, forming an interdisciplinary knowledge system. For example, when teaching history courses, knowledge from multiple disciplines such as geography, politics, and economics can be introduced to analyze historical events and phenomena from multiple perspectives. This teaching method not only broadens students' knowledge horizons, but also helps them form a more comprehensive and in-depth understanding. Secondly, interdisciplinary integrated teaching can introduce practical problems in real life and combine theoretical knowledge with practical applications. By guiding students to apply interdisciplinary knowledge to solve practical problems, it can stimulate their interest and motivation in learning, improve their practical and problem-solving abilities. For example, when teaching science courses, students can be organized to conduct interdisciplinary scientific experiments or project research, allowing them to learn and apply knowledge in practice.

In addition, interdisciplinary integrated teaching can also utilize modern teaching methods such as multimedia and the internet to enrich classroom teaching forms and content (as shown in Figure 1). By creating multimedia courseware and conducting online discussions, students can be provided with a more vivid and intuitive learning experience, improving their learning effectiveness and interest. Through interdisciplinary integration of teaching, the classroom content of basic education disciplines has been greatly enriched and expanded, and the quality of teaching has also been significantly improved. Students can not only acquire more comprehensive and in-depth knowledge in interdisciplinary learning, but also cultivate interdisciplinary thinking and problem-solving abilities, laying a solid foundation for future learning and life.



Figure 1: Multimedia teaching

### 3. Practical Effects and Evaluation Methods

#### 3.1. Practical Effects

The practical effect of interdisciplinary integrated teaching in basic education is significant, as it provides students with a broader learning perspective and deeper learning experience. Firstly, interdisciplinary integrated teaching effectively promotes students' understanding and mastery of knowledge. By organically integrating knowledge and skills from different disciplines, students can learn and understand knowledge within a more comprehensive and systematic knowledge framework. This teaching method not only helps students master knowledge of a single subject, but also enables them to understand the connections and interactions between different subjects, thereby gaining a deeper understanding of knowledge. Secondly, interdisciplinary integrated teaching stimulates students' interest and curiosity in learning.

Traditional single subject teaching often places too much emphasis on imparting knowledge and training exam taking skills, leading to students losing interest and motivation in learning. Interdisciplinary integrated teaching introduces diverse learning content and activities, allowing students to learn and apply knowledge in the process of solving practical problems, thereby stimulating their interest and curiosity in learning. Students are more actively involved in learning, actively exploring and solving problems, and have formed good habits of self-directed learning. In addition, interdisciplinary integrated teaching also cultivates students' comprehensive literacy and innovation ability. In the process of interdisciplinary learning, students need to comprehensively apply knowledge and skills from multiple disciplines to solve problems, which exercises their interdisciplinary thinking and problem-solving abilities. At the same time, interdisciplinary integrated teaching also focuses on cultivating students' teamwork spirit, communication skills, and innovative thinking, which are of great significance for their future growth.

#### 3.2. Evaluation Methods

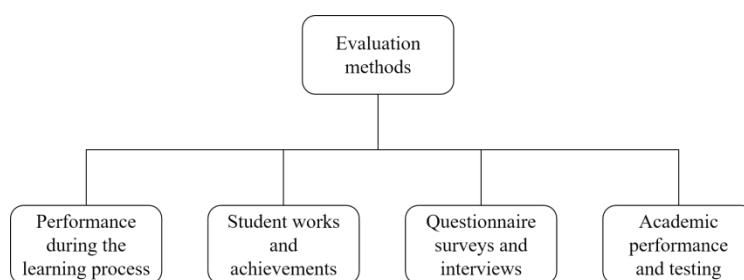


Figure 2: Evaluation method

The evaluation of the practical effectiveness of interdisciplinary integrated teaching requires the use of diverse evaluation methods to ensure the objectivity and accuracy of the evaluation results (as shown in Figure 2). Firstly, teaching effectiveness can be evaluated by observing students' performance in interdisciplinary learning processes. Observe whether students actively participate in learning activities, whether they can comprehensively apply knowledge and skills from different disciplines to solve problems, as well as their performance and interaction in group cooperation. These observations can reflect the level of acceptance and learning effectiveness of interdisciplinary integrated teaching among students. Secondly, the teaching effectiveness can be evaluated through the works and achievements of students. The projects, assignments, and works completed by students can reflect their understanding and application abilities in interdisciplinary learning. Teachers can rate or comment on students' works to understand their learning situation and progress level.

In addition, questionnaire surveys and interviews are also commonly used evaluation methods. By designing questionnaires or conducting interviews, students can understand their satisfaction with interdisciplinary integrated teaching, learning attitudes, learning difficulties, and other related information. These pieces of information can help teachers better understand the learning needs and issues of students, thereby adjusting teaching strategies and improving teaching methods. Finally, academic performance and tests can also be used to evaluate teaching effectiveness. By comparing the academic and test scores of students before and after interdisciplinary integrated teaching, the significance of teaching effectiveness can be understood. At the same time, specialized test questions can also be designed to assess students' understanding and application ability of interdisciplinary knowledge.

#### 4. Conclusions

The implementation of interdisciplinary integrated teaching strategies in basic education undoubtedly brings new challenges and opportunities. This teaching strategy not only breaks down the barriers between traditional disciplines, but also plays an important role in cultivating students' humanistic, artistic, and comprehensive subject abilities. In the basic education stage, students are in a critical period of knowledge accumulation and thinking growth. The implementation of interdisciplinary integrated teaching strategies helps students form a comprehensive knowledge system and interdisciplinary thinking. Through the integration of different disciplines, students can better understand the internal connections of knowledge and improve their ability to comprehensively apply knowledge. At the same time, this teaching strategy also helps to stimulate students' interest and curiosity in learning, cultivate their self-learning ability and innovative spirit. In short, interdisciplinary integrated teaching strategies are one of the important directions for the reform and growth of basic education. By strengthening research and practice, we can continuously improve the quality and effectiveness of interdisciplinary teaching, laying a solid foundation for the comprehensive growth and future growth of students.

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