Integration of information-based teaching and quality education: ways to achieve and evaluation systems

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Abstract. This thesis discusses the integration of information-based teaching and quality education, aiming to suggest ways to achieve it and evaluation systems. First, the paper reviews the concepts and characteristics of information-based teaching and quality education, emphasizing their importance to student learning and development. The paper then analyses the significance and objectives of the integration of information-based teaching and quality education, pointing out that such integration can promote the development of students' multiple intelligences, innovative thinking and independent learning abilities.

Keywords: Information-based teaching; Quality education.

1. Introduction

1.1 Background and significance of the study

With the continuous development and popularity of information technology, information-based teaching has become an important trend and development direction in the field of education today. Information-based teaching has many advantages, such as the sharing of educational resources, improving teaching efficiency, stimulating students' interest in learning, and so on. At the same time, quality education is also an important direction of education reform, emphasising the cultivation of students' comprehensive qualities and abilities. The integration of information-based teaching and quality education can make education more responsive to the development needs of society, more in line with the learning needs of students, and can also better achieve the goals and tasks of education. At the same time, it promotes the development of information technology in education, promotes the overall development of students' comprehensive quality, and meets the needs of future social development to achieve educational equity.

1.2 Purpose of the study

The purpose of this thesis is to explore the integration of information-based teaching and quality education, which mainly includes the following aspects:

1). To explore the ways of realising the integration of information-based teaching and quality education, so as to better promote the integration of information-based teaching and quality education and improve the quality and efficiency of teaching.

2). To establish an evaluation system for the integration of information-based teaching and quality education, so as to better evaluate the effectiveness of the integration of information-based teaching and quality education, and thus continuously optimise education and teaching.

3). To explore the impact of the integration of information-based teaching and quality education on students, in order to better understand the advantages and shortcomings of the integration of information-based teaching and quality education, and thus to promote the improvement of education and teaching.

Overall, this thesis aims to study the integration of information-based teaching and quality education, explore its implementation and evaluation system, and understand its impact on students, so as to advance the improvement of education and teaching, and improve the quality and efficiency of teaching.

2. The relationship between information-based teaching and quality education

2.1 The basic concept and characteristics of information-based teaching

Information-based teaching is a teaching mode that uses advanced information technology tools to assist the teaching process in order to improve the effectiveness and quality of teaching.

The characteristics of information-based teaching include, inter alia

Diversification of teaching methods: adopting diversified teaching methods. In the current stage of reform and development of computer education and teaching in colleges and universities, in order to better enhance students' own interest in learning, teachers should fully combine the actual situation to innovate various teaching methods as a basis to steadily improve students' own learning enthusiasm and subjective initiative. [1]

Sharing of teaching resources: the use of information technology means can achieve the sharing and exchange of teaching resources, in order to improve the efficiency of resource use.

Personalization of the teaching process: Using information technology tools, students can be taught in a personalised way according to their learning characteristics and needs.

Scientific evaluation of teaching effects: Using information technology means, scientific evaluation of students' learning effects can be realised to promote the improvement of teaching quality.

Teacher role change: Information technology teaching requires teachers to change from the traditional "indoctrination" teaching to the role of guiding, assisting and stimulating students' interest in learning.

2.2 Connotations and characteristics of quality education

Quality education is an educational philosophy that focuses on the all-round development of students and the development of their personality, aiming to cultivate students' comprehensive qualities and innovative abilities. The report of the 18th Party Congress also states, "Comprehensively implement quality education, deepen comprehensive reform in the field of education, focus on improving the quality of education, and cultivate students' sense of social responsibility, innovative spirit and practical ability." These words not only point out the relationship between implementing quality education and improving the quality of education, but also indicate that implementing quality education means putting students at the centre and focusing on cultivating students' sense of social responsibility, innovation and practical ability. [2] The evaluation of quality education for college students should include ideological and moral quality, business quality, humanistic quality, physical and mental quality, etc. [3] Its connotation and characteristics include

Humanistic care: emphasizing respect for students' individuality and differences, focusing on the development of students' humanistic qualities and emotional education.

Comprehensive quality: focus on the quality of knowledge, ability, character, culture, art, health and other aspects to improve students' quality comprehensively.

Creative Ability: Emphasis is placed on cultivating students' creative consciousness and practical ability, promoting innovative thinking and creative practice.

Practical Education: Emphasis is placed on the cultivation of students' practical skills, encouraging them to improve their practical application skills through practical enquiry and problem solving.

Social responsibility: focus on cultivating students' sense of social responsibility and civic literacy, and guide students to actively participate in social practice and public welfare.

Throughout the whole process of education: Emphasis is placed on the fact that quality education should run through the whole process of students' education, including classroom teaching, campus life and social practice.

2.3 The interrelationship between information-based teaching and quality education

With the continuous development and popularity of information technology, information-based teaching has become an indispensable part of modern education. Information-based teaching and quality education are interrelated and mutually reinforcing, and the integration of the two helps

improve the effectiveness and quality of education and teaching, and cultivate the comprehensive quality of students.

In the process of integrating information-based teaching and quality education, information technology provides strong support for the realisation of quality education. Information-based teaching can provide students with more flexible and varied learning methods, which is conducive to stimulating students' interest in learning and their innovative abilities, thus better promoting the development and realisation of quality education.

In short, the integration of information-based teaching and quality education can promote the improvement of students' comprehensive quality and the quality of education and teaching, but it also requires continuous exploration and improvement of the realisation methods and evaluation system.

3. The integration of information-based teaching and quality education

3.1 Curriculum setting and teaching design

Establish a student-centred curriculum design, putting students at the centre of the curriculum design and paying attention to their individual needs and learning interests. In the teaching design, focus is placed on the cultivation of students' practical skills and innovative thinking, and students are encouraged to take the initiative to learn and think on their own.

The introduction of information technology teaching tools, taking advantage of information technology, allows for the development of a variety of multimedia courseware and online courses. Online learning and distance learning can also be achieved through online courses.

Strengthen the evaluation mechanism, which is an important criterion for measuring the curriculum and teaching design. In the process of integrating information-based teaching and quality education, diversified assessment methods should be adopted in order to comprehensively evaluate students' learning outcomes and overall quality.

Establish interdisciplinary curriculum design. Information-based teaching and quality education require interdisciplinary knowledge and skills, and therefore interdisciplinary design and teaching should be emphasised in the design and teaching of the curriculum. This promotes integration and cross-learning between disciplines.

The curriculum and teaching design in the integration of information-based teaching and quality education realisation approach needs to pay attention to students' practical needs and interests, focus on practical teaching and interdisciplinary integration, and also establish a diversified assessment mechanism in order to achieve comprehensive training of students.

3.2 Use of teaching resources

Information-based teaching resources is the collective name of all digital teaching information resources, digital hardware resources, digital teaching environment and educational human resources that support and promote information-based teaching activities based on Internet technology. [4]

Multimedia teaching resources: The use of multimedia teaching resources can improve the fun and interactivity of teaching and deepen students' understanding and memory of knowledge.

Network resources: The Internet is an important source of information-based teaching. Teachers can use network resources to find teaching materials, create courseware, and conduct online exchanges and discussions. Through the use of network resources, teaching content and methods can be enriched and teaching effectiveness can be improved.

Practical teaching resources: Practical teaching resources include laboratories, practical training bases, practical projects, etc. Teachers can make use of these resources to teach, so that students can learn by doing and deepen their understanding and mastery of knowledge.

Interdisciplinary resources: Information-based teaching and quality education require interdisciplinary knowledge and skills. Teachers can make use of interdisciplinary resources, thus promoting integration and cross-learning between disciplines. This allows students to understand and grasp the links between different disciplines and broaden their horizons.

3.3 Establishment of student assessment system

The traditional competitive student assessment is not conducive to discovering students' potential and motivating them to improve. In the context of quality education, the evaluation system of "good students" needs to be reconstructed. [5] The integration of information-based teaching and quality education is one of the important trends in the current education and teaching reform. The establishment of a student assessment system is one of the key aspects of this integration.

The following are some of the key steps in the establishment of a student assessment system:

1). Clarify the objectives of evaluation: The objectives of evaluation should be in line with the requirements of quality education. According to Bloom's theory of classifying teaching objectives in the cognitive domain, they can be divided into six levels from low to high: know (knowledge) - comprehend (understanding) - apply - analyse - synthesize - evaluate. This is used as a grip to analyse the cognitive goals to be achieved at each stage of the flipped classroom. [6]

2). Determine the evaluation content: the evaluation content should be adapted to the actual needs of information-based teaching.

3). Establish evaluation indicators: evaluation indicators are the specific criteria for evaluation. Evaluation indicators should be consistent with the evaluation objectives and evaluation content. Evaluation indicators can be divided into two types: quantitative indicators and qualitative indicators.

4). Determine evaluation methods: Evaluation methods refer to the specific methods and means used in the evaluation process. Evaluation methods should be compatible with the evaluation objectives and evaluation content.

5). Establish the evaluation system: Evaluation system refers to the organic combination of evaluation objectives, content, indicators and methods. The evaluation system should be scientific, impartial and effective.

3.4 Improvement of teachers' teaching ability

In the context of the new era, cultivating the educational ability of university teachers is not something that can be achieved overnight; it is a task that needs to be persisted in the long term and is also subject to the role of various factors such as information technology reform, the social environment of universities and relevant national policies. In the process of cultivation, educational training needs to be the main means to support teachers to improve their own educational ability after a long period of practice. [7]

Firstly, teachers' ability to apply information technology is the key to realising information-based teaching. With the continuous development and application of information technology, teachers need to master various teaching software and tools, and be able to use multimedia technology and network resources skillfully for teaching.

Secondly, teachers' teaching ability needs to meet the requirements of quality education. As quality education focuses on cultivating students' comprehensive qualities, teachers should, through continuous learning and practice, improve their teaching abilities, master effective methods of cultivating students' comprehensive qualities, focus on cultivating students' practical and creative abilities, and pay attention to cultivating students' sense of social responsibility, so that students have the comprehensive qualities required by modern society.

Finally, teachers' teaching skills also need to be improved by focusing on the reform of classroom teaching. To make information-based teaching and quality education truly integrated, traditional teaching modes and methods need to be changed. Teachers should constantly improve teaching methods, innovate teaching methods and improve the quality and effectiveness of classroom teaching, so as to better realise the integration of information-based teaching and quality education.

4. Evaluation system of the integration of information-based teaching and quality education

4.1 Determination of educational objectives and indicators

Informatization teaching and quality education are today's education

The establishment of an integrated evaluation system is one of the necessary conditions for the improvement of the quality of education and teaching, which is an important direction of reform. In defining educational objectives and indicators, the following aspects need to be taken into account:

1)Determination of educational objectives

Educational objectives refer to the knowledge, abilities and qualities that students should possess in the context of the integration of information-based teaching and quality education. When determining educational objectives, the needs of students' future development and the requirements of society for talents need to be taken into account, as well as the needs of students' individual development.

2)Determination of educational indicators

Educational indicators are the criteria and basis for evaluating whether students have achieved the educational objectives. When determining educational indicators, it is necessary to take into account the characteristics of information-based teaching and quality education, and to choose evaluation methods and tools that match them. At the same time, educational indicators should be operable and measurable, and be able to effectively evaluate students' performance and growth.

3)Integration of educational objectives and indicators

The integration of educational objectives and indicators is the key to the evaluation system. In the process of integration, educational objectives and educational indicators need to be linked to each other to ensure that the evaluation indicators can fully reflect the requirements of the educational objectives. At the same time, it is also necessary to consider the characteristics and differences of different educational stages and to reasonably determine the weights and proportions of evaluation indicators.

4.2 Design of evaluation methods and approaches

The evaluation system for the integration of information-based teaching and quality education needs to take into account a number of aspects such as students' cognitive level, skill level and emotional attitude. The design of evaluation methods and approaches needs to be determined according to the purpose of evaluation and the object of evaluation, and the following are some possible design directions:

Comprehensive assessment method: Evaluating students' informational quality and overall quality through the weighted scores of multiple assessment indicators.

Reflective assessment method: Evaluating students' informational quality and overall quality by allowing them to self-evaluate and reflect.

Project evaluation method: Evaluate students' informatization quality and comprehensive quality by having them participate in informatization teaching and quality education projects and evaluate the completion of the projects.

Grade evaluation method: By setting different evaluation grades and determining the grade students are at according to their performance, and giving the corresponding evaluation results.

It should be noted that the design of the evaluation methods and approaches should take into account the comprehensiveness, objectivity and operability of the evaluation, as well as being compatible with the teaching objectives and content, and avoiding the influence of the evaluation process on the students.

4.3 Analysis and application of evaluation results

Information-based teaching and quality education is an important direction in today's education reform. The integration of the two can promote the improvement of teaching effectiveness and the

overall development of students' comprehensive quality. When evaluating the teaching effect after integration, the following aspects can be considered.

1). Evaluation at the level of knowledge and skills: it mainly focuses on the evaluation of the knowledge and skills acquired by students in the classroom, including classroom performance, homework results, examination results, etc.

2). Evaluation at the level of comprehensive quality: mainly for the evaluation of students' comprehensive quality, including learning attitude, independent learning ability, communication ability, teamwork ability, etc.

3). Evaluation of information-based teaching: mainly for the evaluation of teachers' performance and teaching effectiveness in the process of information-based teaching, including teaching design, teaching methods, use of teaching resources, etc.

4). Evaluation of quality education: This is an evaluation of the quality education carried out by schools, classes and teachers, including educational objectives, curriculum and educational activities.

The analysis of the evaluation results can be carried out through statistical methods, and the results of different levels of evaluation can be analysed separately. For example, the analysis of the evaluation results of the knowledge and skills level can help to understand the students' performance in the classroom and their mastery of knowledge, so that teaching strategies can be adjusted in a targeted manner; the analysis of the evaluation results of the comprehensive quality level can help to understand the students' comprehensive quality development, so that quality education can be carried out in a targeted manner The results of the evaluation at the level of information technology and quality education can be analysed to understand the adaptability and effectiveness of the teaching model, so that teaching strategies can be adjusted and teaching reforms carried out in a targeted manner.

5. Exploration of problems and challenges

Information-based teaching and quality education are two hot topics in the current education field. Their integration can promote the improvement of education quality and the overall development of students' comprehensive quality. However, there are a number of problems and challenges in the realisation approach and evaluation system that need to be explored in depth.

5.1 Ways of realisation

Information-based teaching is the use of information technology to facilitate the teaching and learning process, which can effectively improve teaching effectiveness and students' interest in learning. Quality education, on the other hand, is an educational concept that focuses on the all-round development of students and emphasises the cultivation of comprehensive qualities. The way to realise the integration of information-based teaching and quality education can start from the following aspects:

1)Teaching design

Teachers can make full use of information technology to design teaching content and teaching methods, making teaching more flexible and diversified, paying more attention to students' personalities and interests, and promoting the development of students' independent learning and innovative thinking.

2)Teaching resources

Teachers can access richer, more comprehensive and authoritative teaching resources through the Internet and other channels, so that students can have access to more knowledge and information and promote the development of their overall quality.

3)Aspects of learning assessment

Teachers can use information technology to conduct learning assessment, evaluate students' learning outcomes and overall quality in a more scientific and objective manner, and promote students' overall development and quality improvement.

5.2 Problems and challenges in the evaluation system

The following problems and challenges exist in the evaluation system for the integration of information-based teaching and quality education:

1)Evaluation standards are not scientific enough

As the cultivation of comprehensive quality is a relatively comprehensive and complex process, the evaluation criteria are not scientific and objective enough, which may easily lead to inaccurate evaluation results and affect teaching effectiveness and student development.

2)Single evaluation method

In the traditional evaluation system, teachers often have a strong subjectivity in evaluating students, and teachers' subjective evaluation of students often takes up the main part of the whole evaluation, and because the evaluation items are relatively single, the evaluation made is not a comprehensive evaluation of students, which is somewhat misleading for students and parents to understand students, and it is also easy to bury students' potential. [8]

3)Unreliability of assessment results

Due to the unreliability of assessment results, students may become distrustful and dissatisfied with the results, thus reducing their motivation and incentive to learn and affecting the effectiveness of teaching.

6. Conclusion and outlook

6.1 Research shortcomings and outlook

"The integration of information-based teaching and quality education is an important direction of the current education reform, which aims to improve students' comprehensive quality and innovation ability through the application of information technology. However, in practice, we find that there are still some shortcomings in the research in this area.

Firstly, most of the existing research focuses on theoretical discussions, while lacking practical applications and experience summaries. This makes it difficult for research results to provide effective guidance for educational practice.

Secondly, the ways of realising the integration of information-based teaching and quality education and the evaluation system have not been adequately researched. Schools, teachers and students lack feasible realisation plans and evaluation criteria in practice, making it difficult to achieve the organic integration of information-based teaching and quality education.

Finally, the perspective of the research field is relatively narrow, and there is a lack of diversified research methods and interdisciplinary research. The integration of information-based teaching and quality education needs to take into account the intersection and integration of multiple disciplines and requires the participation and collaboration of experts from different disciplines, but interdisciplinary research is still relatively rare.

Looking ahead, we can strengthen research in the following areas:

Strengthen practical applications and experience summaries, and encourage schools and teachers to explore effective ways of realising the integration of information-based teaching and quality education in their teaching practices; establish a scientific evaluation system, including diversified evaluation methods and evaluation criteria, so as to improve the effectiveness of the integration of information-based teaching and quality education; promote interdisciplinary research, encourage exchanges and collaboration between experts from different disciplines, and improve the In short, the integration of information-based teaching and quality education is a major challenge.

In short, the integration of information-based teaching and quality education also has a wide range of application prospects. It can be applied to the teaching of various subjects. In addition, it can also be applied to different stages of education. The integration of information-based teaching and quality education can bring new ideas and methods to the development and reform of the education industry and promote the process of modernising education.

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