

Research and Practice on Integration of Information Technology and Discipline

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Abstract— Our country attaches great importance to the integration of information technology and subject curriculum, actively explores the integration of subject curriculum and information technology, fully reflects the application of information technology, vigorously promotes the universal application of information technology in the teaching process, and promotes the effective integration of information technology and subject curriculum has become an important theme in recent and future education reform. This paper studies the effective integration and deep integration of information technology and subject teaching in Colleges and universities, and explores the methods and Strategies of teachers' teaching and students' learning by utilizing the technological advantages of information technology.

Keywords— *Integration, Explores, Information Technology, Advantages*

I. INTRODUCTION

With the development of information age, the integration of information technology and disciplines in universities has become one of the most important issues in the process of education reform all over the world. Our country has also carried out some research and practice related to the integration of information technology and disciplines in universities. In the Ten-Year Development Plan of Education Informatization (2011-2020), it is particularly emphasized that exploring the deep integration of information technology and teaching should lead to the innovation of educational concepts and modes by means of informatization, that is, to promote the comprehensive and deep integration of information technology and educational process, and to promote the comprehensive transformation of education from purpose, content, form, method to organization, so as to improve the quality of teaching.[1]

II. ANALYSIS OF PROBLEMS IN INTEGRATION REFORM

In recent years, many colleges and universities in China have carried out research on the integration of information technology and disciplines, and there are some problems in the practice of integration reform. The relationship between information technology and disciplines is not properly handled. The effect of integration is too superficial to find the best entry point for the integration of information technology and disciplines. [2] It only takes information technology as a teaching demonstration, simply increasing the speed of information dissemination, and does not achieve deep integration. Only accelerated the speed of inculcation, increased the amount of information, and did not put the concept of integration into practice. In the practice of teaching reform, there is a phenomenon that the evaluation method is single and the students seldom participate in the evaluation. In the effective integration of information technology and disciplines, we should pay more attention to process evaluation. On the basis of teacher evaluation, we should increase student evaluation appropriately.[3] To achieve a comprehensive assessment of students' behavior from multiple perspectives. In the process of integration of information technology and disciplines, learning strategies lack guidance. In the process of integrating classes, some classes put too much emphasis on new learning methods, one-sided pursuit of students' autonomous learning, network-based inquiry learning. However, in the process of implementation, teachers lack guidance on students' learning strategies. Despite the rich ways of classroom learning, students are more silent after the lively classroom. This emphasis on "flying" classroom, resulting in the role of information technology is difficult to play, autonomous learning, inquiry learning and other learning methods are not in place, learning objectives are difficult to achieve.

In view of the above problems, this paper further carries on the strategy analysis to the practice of information technology and subject integration, constructs the effective application strategy of information technology and subject teaching integration, correctly grasps the integration thought and strategy, better exerts the advantages of information technology and subject integration, and better improves the teaching effect. [4]

Explore the research of self-learning, cooperative learning and inquiry learning mode based on the network environment. Explore the research of flipping classroom and mixed teaching method by using online open course. Research on the development and construction of teaching resources under the guidance of curriculum reform concept. [5]

III. PROBLEM SOLVED

Improve the understanding of the new teaching mode of information technology and curriculum integration. The integration of information technology and curriculum should be carried out in accordance with the characteristics of various disciplines and the specific conditions of different disciplines, which meets the requirements of the teaching content, teaching objectives and teaching strategies of the disciplines. [6] The integration of resources in the integration of information technology and curriculum should realize the rational allocation of hardware resources; make full use of network resources, the cultivation of

human resources and the organic restructuring of curriculum resources, so as to achieve "optimal integration". Improve the information technology level of University teachers; renew teachers' concepts, master modern educational ideas, information-based teaching methods and means, etc.

IV. CORRESPONDING COUNTERMEASURES

"Deep integration" is a deeper requirement for information technology integration in Higher Education after "integration". Information technology is becoming the support of modern educational technology and the necessary means to develop education, promote the reform of teaching mode, teaching method and evaluation system. Under the guidance of this idea, this paper studies how to effectively integrate information technology with subject teaching, promote the reform of teaching and learning methods in the most effective way, promote the improvement of teachers' and students' information literacy, enable students to study independently, dare to explore and innovate boldly on the platform of integration of information technology and subject education, realize the fundamental purpose of education and teaching, and give full play to colleges and universities as high-quality ones. [7] Functions of the main base for quality personnel training.

The integration of information technology and disciplines in foreign countries has developed earlier, with the main characteristics of multimedia, networking, socialization, situational and instrumentalization. Emphasis is laid on letting students use information technology in subject learning and using computer as a tool of assisted learning.

The construction of the integration of information technology and curriculum in Colleges and universities does not only lie in the use of information technology by teachers to impart knowledge, but also in the fact that teachers and students can use information technology to better acquire information and knowledge, so as to solve the problems encountered in teaching and learning, and ultimately achieve optimal teaching and learning. In the organic integration of information technology and University curriculum, the four elements of teaching activities - teachers, students, media and teaching content are the main research objects of this paper.

V. MAJOR RESEARCH WORK ON EDUCATIONAL REFORM

The integration of information technology and curriculum refers to the integration of information technology with curriculum in the form of tools, the integration of information technology into the elements of curriculum teaching system, making it a teaching tool for teachers, a cognitive tool for students, an important form of textbooks and the main teaching media, and the integration of information technology, information resources, information methods, human resources and curriculum content. Jointly, a new teaching method to accomplish the teaching task of the course.

Firstly, this paper deeply understands the current situation of the integration of information technology and discipline in Colleges and universities, and analyses the internal advantages, disadvantages and external opportunities of the integration of information technology and discipline in Colleges and universities according to the current situation. On this basis, it puts forward the idea of effective and deep integration of information technology and discipline and corresponding measures, and finally creates and completes the construction of the integration of information technology and discipline in Colleges and universities. [8]

On the basis of the existing experience in the integration of information technology and political courses in Colleges and universities, this paper takes public mathematics, College English and college physical education as examples to further integrate with information technology effectively. Through the research of the subject, the application strategy of integrating scientific information technology and subject teaching is constructed. Let students fully grasp the basic skills of information technology, cultivate students' ability of network information acquisition, information analysis and processing, fully mobilize students' enthusiasm and creativity in learning, greatly expand the connotation space of students' subject knowledge, meet students' individualized needs, so as to cultivate students' comprehensive ability of independent innovation. Through the research of the subject, teachers can master the basic methods of information technology and subject integration, explore the integrated teaching mode, further enhance teachers' information technology literacy, and obviously improve the quality of subject teaching. Construct various teaching and learning modes based on the network environment, promote the construction of school network resources and the sharing of network resources, and build an autonomous, research and cooperative learning platform. We will further promote the in-depth integration of information technology and higher education and innovate personnel training models.

VI. CORRESPONDING IMPLEMENTATION MEASURES

This paper first identifies the members of the research team, instructs teachers to conduct theoretical and reference studies, and formulates research programs for the integration of information technology and disciplines. To construct an effective teaching mode of integrating information technology and various disciplines, and to guide teachers to make practical explorations on the basis of their own disciplines. The information technology level of teachers is investigated. Research teachers in peacetime teaching can consciously integrate information technology into teaching, and pay attention to information technology as students' cognitive tools, teaching tools, strengthen the learning of subject teaching theory, strengthen the teaching design under the new concept, so that information technology can play its maximum benefits. According to the theoretical conception of the research, the members of the research team integrate public mathematics, College English and college physical education. It interprets the curriculum standards of three disciplines, classifies and refines the teaching contents of the disciplines, analyses the information technology environment and the ontological functions of the information technology, and makes case studies of teaching practice. [9] Taking the subject group as the unit to discuss and exchange, constantly revise

and improve the "integration" teaching, and form the successful experience of "integration of information technology and subject teaching".[10]

VII. SUMMARY

The purpose of this study is to scientifically and effectively use information technology and subject teaching integration, change the traditional classroom teaching mode, expand students' learning ideas, serve teaching, improve the quality of education and teaching, train students to interpret information with multiple senses, solve problems in multiple ways, change the unacceptable knowledge into static, dynamic and easy, and complete the transformation of information into knowledge. Knowledge transforms into wisdom. Improve the teaching effect and train compound applied talents.

ACKNOWLEDGEMENTS

2018 National University Computer Basic Education Research Project "Research and Practice of Reversal Classroom Teaching Model Based on SPOC", Project No.:2018-AFCEC-208.

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