Strengthening the Construction of Educational Informationization to Help "Internet Plus Teaching"

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Abstract. With the rapid development of cloud computing, Internet of Things, big data and artificial intelligence technology, and the continuous integration of the Internet and education, the impact of information technology on education and teaching has attracted more and more attention from many scholars and frontline educators. The theoretical research in the field of "Internet+Education" is getting deeper and deeper. Therefore, under the background of "Internet-education", this study proposes how to make full use of modern information means and technologies to realize modern curriculum teaching, organically combine the traditional physical classroom with the online classroom supported by the Internet, and at the same time proposes a series of technical solutions and later service directions.

Introduction

As early as March 5, 2015, at the third session of the 12th National People's Congress, Premier Li Keqiang first proposed the "internet plus" action plan in his government work report. "internet plus" is an upgraded version of the integration of the two. It extracts the Internet as the core feature of the current information development and integrates it with industry, commerce, finance and other service industries. In the field of education, experts believe that internet plus will not replace traditional education, but let traditional education radiate new vitality. Our education is moving towards a 4.0 era with students at the core.

In April 2018, the Ministry of Education issued the "Education Informatization 2.0 Action Plan". In December of the same year, the Provincial Department of Education issued the "Zhejiang Province Education Informatization Three-Year Action Plan (2018-2020)", proposing to lead education modernization with informatization. This requires us not only to use technology, but also to integrate information literacy and information technology, to embed information technology into students' learning, and to promote the transformation of traditional classroom teaching mode to personalized learning in the "internet plus" era. This requires schools to make changes in six aspects of teaching philosophy, ability, method, content, management and environment so as to truly realize the transformation from teaching-centered to learning-centered, from knowledge imparting to ability cultivation, from classroom learning to various learning methods, and to promote the innovative application of teaching informatization.

The Construction Ideas

The school has taken the innovative application of information technology in teaching form as a strategic plan for the future to carry out top-level design and systematic planning. It has designed the work plan, formulated the management method, made clear the detailed rules for implementation, created a modern classroom, strengthened the research and practice of Internet information technology in classroom teaching, experimental training, skills assessment and other aspects, so that the supporting and leading role of information technology in professional construction and personnel training can be fully brought into play. The innovative application of information technology has gradually become a new feature and new highlight of school running.

At present, the construction of teaching informatization has moved from the construction of infrastructure equipment to the construction of an all-round informatization teaching environment,
with more emphasis on the promotion of information technology to teaching. In 2017, the Ministry of Education issued the Guiding Opinions on Further Promoting the Development of Vocational Education Informatization, which explicitly requires all localities to build wired and wireless integrated certification, a high-speed, stable and safe campus network, strengthen the hardware infrastructure of education informatization such as digital media production rooms and digital classrooms, and further optimize the informatization teaching environment in vocational colleges. Therefore, the school aims to meet the diverse learning of students, realize the benign interaction between teachers and students, build an information-based classroom teaching ecology, and promote the reform and reconstruction of classroom teaching mode. It continuously optimizes the modern teaching support system and service mode, and constructs a service-oriented modern teaching one-stop service system and a multi-level information-based teaching service mode, thus becoming a powerful driver of teaching informatization.

Construct a Three-Dimensional and Unblocked Campus Network Environment that Keeps Pace with the Times

Our school integrates the unified teaching and living area network, optimizes the backbone links of the campus network, combines the two campuses, teaching buildings and dormitory living buildings into a whole through ten thousand trillion optical fibers, and merges the living area network into the teaching network for unified management. A campus network with reasonable structure, full wired and wireless coverage, safety, reliability and stability has been built to form a high-speed, intelligent and all-round interconnection network environment. It realizes the whole school teachers and students to study and communicate at any time and anywhere in the campus through various multimedia terminals.

High Standard Construction of Educational Technology Support Center

The difficult problem that needs to be solved in the process of teaching informatization is how to improve teachers and students' informatization teaching and learning ability, and effectively integrate information technology and curriculum.

In terms of hardware construction, the school has completed the construction of the massive open online course League Educational Technology Support Center for Ningbo Universities on the basis of the original Educational Technology Center. The center includes functional blocks such as a video recording area, a traditional recording area, a virtual recording area, a seminar editing area, an office seminar area and a results display area, providing all-round massive open online course construction services to alliance members.

In the promotion of information literacy, the education technology center provides teachers and students with high-quality information technology services, provides complete technical support for classroom teaching innovation, and ensures the smooth development of information-based teaching activities. On the other hand, the Education Technology Center has strengthened training and guidance to enhance the information-based ability of teachers and students. We will continue to innovate the content and form of training and carry out hybrid training that combines online and offline training and combines basic and personalized training. Basic training for all teachers, promotion training for key teachers, and intensive training for excellent teachers. It also combines teacher information technology training with admission of course teaching qualifications, with the assessment of qualified courses for new teachers, and combines the improvement of students' online learning and other information literacy with specific courses. In the implementation process, information-based teaching technology training is carried out through traditional face-to-face teaching methods, network training methods, practical operation methods, micro-teaching training methods and other forms, so as to enhance the information literacy of teachers and students, lay a solid foundation for the smooth development of "massive open online course" in schools and the reform of classroom teaching methods, promote the cultivation of students' information awareness and ability, and meet the requirements of information-based teaching.
Multi-Directional Construction is Conducive to The Construction of Information Teaching Software and Hardware Environment

In terms of hardware environment, the school provides a new information environment for the application and innovation of teachers' information teaching, such as a series of intelligent teaching spaces such as teacher education technology training center, remote interactive classroom, micro-class production room, virtual reality training room, intelligent teaching environment, MOOC shooting room, high-definition multi-function studio, etc., providing a good development environment for all teachers and students to develop and utilize multimedia teaching resources. In terms of software platform, a series of e-learning platforms, resource platforms, production platforms, online open courses (e.g. Learning Pass, Rain Class, Blue Ink Cloud, etc.) and a number of information-based teaching platforms have been built, as well as platforms and tools such as mobile learning resource production tools and smart class tools. Through standardizing data flow, unifying authentication and integrating software environment, the data links of all platforms and tool systems are opened up based on the principles of integration and intercommunication to realize cooperative work.

High-Quality Construction of Modern Classrooms

In order to activate the learning space and reconstruct the information classroom ecology. To meet the diverse learning of students, to realize the benign interaction between teachers and students, to promote the reform of classroom teaching mode, the school to speed up the construction of a modern teaching environment combining the actual situation with the actual situation. One is to upgrade the modern learning space, the other is to transform the modern teaching physics space, promote the reform of classroom teaching mode and ecological reconstruction, and gradually form a "one platform+four ends" modern teaching ecology. The effectiveness of classroom teaching is continuously improved, and the satisfaction of students is significantly improved.

The school transformed the original multimedia classroom into a modern classroom, and carried out subversive renovation on the traditional classroom layout, spatial structure and facilities.

Modern classrooms are green and environment-friendly, flexible in movement, and adapt to new teaching modes such as inquiry-based, cooperative teaching, and turning-over classrooms. The classroom uses plastic floor and wood grain background wall, and is equipped with structured suspended ceiling with eye protection and energy-saving LED light source to create a healthy and environment-friendly classroom physical space. Movable and spliceable desks and chairs, movable platform, movable whiteboard and mobile power system are selected for the classroom, and different layouts are constructed through flexible movement.

Wireless screen projection, activation of space, construction of ubiquitous, intelligent new environmental application mode of education and teaching. All screens can be switched on wirelessly, and "everyone shares and shares in real time" can be realized in combination with teaching APP to stimulate classroom vitality. Group configuration touch all-in-one machine and wall writing board, the teacher-student interaction is more convenient, activate the learning space, fully embodies the student-centered.

Independent recording and broadcasting, long-distance observation, help resource accumulation and teaching reflection. Two cameras are provided, which can record and broadcast with one key and track automatically, thus realizing the normal recording of the classroom. Students consolidate their learning effect through video review. Teachers realize self-improvement of teaching reflection through video, and peers realize teaching observation and supervision through video.

Intelligent things are linked and controlled centrally to build an intelligent classroom support platform. The control of lights, air conditioners and curtains is controlled in a unified way. According to different teaching modes, the required equipment is automatically turned on, and the switching of equipment switch, screen switch and environmental mode is realized through mobile phones.

Dual-screen integration, intelligent pickup. The classroom is equipped with double screens, large screen, touch and writing, high definition, sufficient brightness and large viewing angle. Different
types of microphones are configured according to requirements, with clear sound quality and strong anti-interference.

The Late Construction Thinking

Teachers and Students Information Technology Literacy and Ability Improvement

In the process of promoting education informatization, the level of teachers and students' informatization literacy determines the depth and implementation process of school teaching informatization. In the next step, the Education Technology Center will continue to promote the plan to improve teachers and students' information technology literacy and ability. We will launch a plan to improve teachers' teaching ability by combining teachers' information technology training with admission to courses to achieve full coverage of information-based teaching ability training for teachers under 45 years of age and teaching in modern classrooms. Combine the improvement of students' information literacy such as online learning with specific courses.

Curriculum Teaching Platform Integration

At present, the school has a number of online open course teaching platforms, such as Learning Pass, Rain Class, Blue Ink Cloud, etc. Combined with course management, teaching diagnosis and rectification, and the construction of the school quality assurance system, a number of teaching platforms standardize data management through docking platforms and unify access to the data center for standardized management.

Give Full Play to the Leading and Exemplary Role of "Internet+Education"

At present, five courses in our school have been listed as national online quality courses. Therefore, on the basis of the previous construction, the first thing is to make good use of the curriculum in the school. High-quality teaching resources should benefit the students in the school and further improve the environmental construction of curriculum teaching.

Secondly, according to the course's own characteristics, it is necessary to innovate the course application mode and expand the course application channels. The focus is to do a good job in the course poverty alleviation in the central and western regions and the course service in the belt and road initiative.

References


