

## Exploration of Building "the Second Learning Space" Education Mode

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**Abstract.** The realization of "the second learning space" mainly includes two aspects: one is to "pave the road and build the bridge" by technology; and the other is to provide professional and systematic high-quality teaching resources with the help of the professional teachers.

The research content mainly includes five parts: the connection of broadband network, the functional services provided by the system, the acquisition of high-quality resources, the storage of resource data, and the construction of security system.

The fundamental purpose of the research and development of the "second learning space" is to break through the limitations of time, space and region, to form a new educational model of learners' autonomous learning and mutual learning under the network environment, to mobilize students' initiative and enthusiasm in learning, to exercise students' creative thinking, to cultivate students' innovative ability and to improve education and teaching quality, and to promote education and teaching reform.

### 1 Explore the background

According to the "12th Five-Year Plan" of the Ministry of Education, it is the general trend to strengthen the construction of high-quality educational and teaching resources, to explore the guiding principles for the formation of the road of educational informatization with Chinese characteristics, and to closely focus on the strategic goal of "strengthening provinces in Colleges and universities". The construction of digital campus is the trend and its quality, level and utilization rate of a university education is the realization of comprehensive strength such as the level of education and teaching in a university.

Combining with the actual situation of information construction in our university, it lays a material foundation for the development of "the second learning space". Efforts should be made to integrate high-quality teachers' resources, cultivate high-quality talents of compound type, break through the existing teaching mode, and research and develop the "second learning space", in order to make it possible for the diversity of knowledge acquisition channels, the autonomy of content selection and the flexibility of learning time.

Therefore, the research and development of "the second learning space" is conducive to improving the quality and efficiency of education and teaching, and has a positive practical significance and long-term historical significance for building a learning society and promoting the in-depth development of education and teaching reform in our school.

### 2 Similar research level and development trend at home and abroad

With the rapid development of science and technology, global education is showing great changes. China is also carrying out education reform in an all-round way and vigorously innovating Education. In recent years, with the rapid development of information technology and penetration into every sphere of life, all aspects of our lives have been greatly impacted, and also injected new life for the modernization of education.

The combination of modern education concept and new computer technology provides a wider development space for education, and meanwhile also provides a new stage for people's lifelong education and sustainable development. The study of learning space started late in China.

In 1994, the State Education Commission chaired the construction of "China Education and Scientific Research Computer Network". On the basis of this computer network environment, in 1996, Dazhong Wang, President of Tsinghua University, took the lead in proposing that colleges and universities should develop modern distance education.

Since then, some colleges and universities in China have set up a network education platform. However, these platforms are mostly based on school enterprise cooperation mode of joint development, and will serve as an independent form of learning network teaching, mainly to provide training of higher education to the society.

In the national teleconference on education

informatization in 2012, Vice Premier Yandong Liu pointed out that "innovative education mode and learning mode must be innovated, high-quality education resources should be shared, information-based learning environment should be accelerated, network learning space should be accessible to all, and sustainable operation and maintenance mechanism should be explored". In March 2012, the Ministry of Education issued the Ten-Year Development Plan of Education Informatization (2011-2020). On the basis of in-depth research, the Ministry of Education condensed the development goals and tasks of the Ten-Year Development Plan of Education Informatization.

In the period of the 12th Five-Year Plan, three key objectives and tasks are put forward: strengthening the construction of broadband network in schools, strengthening the construction and sharing of high-quality digital educational resources and the construction of real-name network learning space environment, as well as two key projects: the construction of educational management information system and the construction of public service platform for educational resources.

The Deputy Minister of education emphasized that "E-learning space is the future development direction of education informationization, the innovation and exploration of new models of students' learning, teacher-student interaction and teacher-student interaction in the network era" and summarized it as "three links and two platforms".

Individualized education in foreign countries has developed earlier and studied more. It is in the leading position both in theory and in practice. The second learning space is widely used in foreign countries, especially in vocational education and the training of professional and technical personnel.

In the new situation, combined with the development trend of education informatization, "the second learning space" will inevitably become an effective driving force to promote education and teaching reform and improve personnel training, and will be accepted by more people.

### 3 Technical analysis

The program is to solve the technical difficulties and key points and expect goals and major technical and economic indicators.

The construction of "Second Learning Space" project utilizes the mature network technology to achieve knowledge imparting. In this environment, students can get the guidance of famous teachers in a professional or a certain learning field, so that students can learn the knowledge they need easily, freely and actively.

In the process of the project construction, the first step is to build the learning space platform, which mainly includes: system development architecture selection analysis, related technology principle analysis, system functional module demand analysis, system overall design analysis, etc.; Secondly, according to the requirement of learner autonomy, high-quality educational and teaching resources are produced. Through online learning and assessment, learners

complete the completion of a certain subject. In the process of project construction, the process design and function realization of system research and development are solved by means of school-enterprise cooperation and multi-party participation.

The key issues of this project construction are the choice of the learning space platform system architecture, data processing process, especially the development and construction of high-quality education and teaching resources, which is the key link and one of the weakest links of current education informatization. In order to solve this problem, we should fully mobilize the relevant teachers to participate actively in the production of resources, and give them corresponding subsidies. "The Second Learning Space" uses network transmission technologies such as audio and video transmission and data collaboration to simulate real classroom environment and provide effective learning environment for students through the network. Students directly use browsers on communication devices connected to the Internet, sign up for the "second learning space" and become spatial trainees.

The "second learning space" project is expected to be completed in two years and divided into three steps, First of all, to achieve the publication of elective course information, students can log into the space to select courses online, through time learning, complete homework, participate in online assessment, to meet the credit requirements, in this way to complete the whole management process of elective courses in school; Secondly, in this space to complete the training of students' second degree, through online registration, payment, learning professional courses, qualified assessment, application for graduation certificate to complete the continuing education degree; Finally, when the system runs steadily and maturely, we will carry out the "Classroom for Famous Teachers", take learning space as the supporting platform, expand and extend the functions of the system, provide services to other brotherly institutions and people in need in all walks of life, and give full play to the role of demonstration and promotion of Famous Teachers.

### 4 The research methods (or technological process, implementation plan) that the project intends to adopt and its feasibility analysis

The objective reason for building the "second learning space" is that teachers face too many students, and that teachers are too demanding and that teachers lack teaching means, tools and carriers. There are only "five ones", that is, "a mouth, a chalk, a blackboard, a textbook, a classroom". Doctors can make use of detection equipment, laboratory tests and surgical equipment and facilities to carry out medical treatment; The actors perform with the help of props, stage, lighting, sound and electronic background. Set up the network teaching implementation platform of each course, solidify many teaching requirements of the new curriculum standard in the network teaching implementation platform, according

to certain inquiry route and operation process, provide teachers with teaching assistants and tools, provide students with inquiry platform, let teachers have "three heads and six arms", and let teachers do what they should do. "What", "can do" and "must do".

The realization of "the second learning space" mainly includes two aspects: one is to "pave the road and build the bridge" by technology; and the other is to provide professional and systematic high-quality teaching resources with the help of the professional teachers.

The project construction plan should include seven parts: project construction background, project construction significance, project construction feasibility analysis, project construction content, project construction progress, project construction guarantee and project construction expected effect.

According to the "Twelfth Five-Year Plan" put forward by the Ministry of Education, we should strengthen the construction of high-quality educational and teaching resources, explore the way to develop educational informatization with Chinese characteristics, closely focus on the strategic goal of "strengthening provinces in Colleges and universities", and combine with the actual situation of informatization construction in our university, develop the "second learning space" and form the network environment. Next, the new educational model of learners' self-learning and mutual-aid learning breaks through the limitations of time and space and learning methods of the existing educational model, promotes educational equity, improves the quality of education, establishes a learning society and promotes the development of educational and teaching reform, which is of great significance to the construction of continuing education, lifelong education and learning society.

Righteousness.

Using the existing network communication technology and closely surrounding the construction of the "Second Learning Space" project, it can be divided into the following links, Firstly, using the existing network technology to achieve full coverage of the campus network, to ensure the security and stability of the entire campus network; secondly, targeted research and development of learning environment, breaking through the time and space constraints, to create new learning opportunities for learners; Finally, the study of the multi-source, optional, accessibility and timely accessibility of information resources provided by the "second learning space" will essentially change the distribution pattern of information resources and the way people own them, so as to realize the reconstruction of educational relations.

Through the existing mature data access strategy, data encryption technology, user control, system and information backup and system log technology, to ensure the safe and stable operation of hardware and software systems.

In order to enable the project to proceed smoothly and gradually, a project team of experts has been set up to review the implementation of the project from time to time, to give theoretical and methodological guidance, and to train the personnel of the project research team on an ad hoc basis, Cultivate a group of professionals with higher information literacy and engaged in network teaching research and development.

Utilize the informatization environment of the school reasonably and effectively, raise funds in many ways for the research of the project and the study and training of teachers.