

# Research on the Construction of Information Instructional Resources Sharing Platform under the Internet Background

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**Abstract:** The rapid development of the Internet has promoted the informationization of education. At present, all universities have basically established digital instructional resources with various forms and rich contents, but they are independent of each other, and the effectiveness of resource application is not high. The establishment of information-based instructional resource sharing platform in universities can effectively innovate college education methods, improve the output of college education capacity, and contribute to the rapid development of the education industry, which has good practical value. Under the background of the current "internet plus" era, the resource quality of instructional resource banks in universities needs to be improved, and the platform function needs to be improved. Based on this, this paper expounds "internet plus" on the basis of the background analysis of "internet plus", and analyzes the necessity and development status of information-based instructional resources sharing platform construction in universities under the environment of "internet plus". This paper probes into the design of information-based instructional resource sharing platform, constructs the model framework of information-based instructional resource sharing platform in universities, and puts forward some constructive suggestions. With a view to promoting the informatization, intelligence and modernization of instructional resource base construction.

## 1. Introduction

At present, IT has penetrated into all aspects of economic development and social life, and people's production mode, lifestyle and learning mode are undergoing profound changes [1]. Education has also changed with the popularity of the Internet. Relying on the Internet, network technology can be integrated into the traditional education system to realize the wide dissemination, fast application and high efficiency of education [2]. Among them, the application of IT in the information-based instructional resource sharing platform in universities can provide rich learning resources for college students and reduce the teaching burden of teachers. Promoting the integration and sharing of instructional resources in universities is an effective way to solve the current dilemma of instructional resources application and improve the effectiveness of instructional resources application [3]. The construction of instructional resource pool is not only an important way to deepen teaching innovation, enrich instructional resources and promote the co-construction and sharing of high-quality instructional resources, but also a practical need for the construction of educational connotation and high-quality development [4].

Under the background of "internet plus", if education wants to realize the construction of information-based classroom, it puts forward higher requirements for universities, which need them to actively change their educational concepts and constantly explore the construction of information-based classroom, so as to better promote the development of education towards modernization [5]. The research and practice of instructional resources sharing, integration and optimal allocation are of great significance, especially the high-quality digital instructional resources sharing platform as the infrastructure is the most important [6]. However, at present, there are some problems in the establishment of instructional resources sharing platform in universities, such as imperfect information equipment, insufficient efforts to organize learning resources and so on. These problems have seriously affected the performance of the platform [7]. The construction of

high-quality information-based instructional resource sharing platform plays an important role in promoting education equity, improving education quality and innovating education model. Therefore, universities should attach importance to the creation of instructional resource sharing platform, scientifically organize instructional resources and rationally design the platform functions to promote the rapid development of universities.

## **2. Exploration of internet teaching mode**

### **2.1. The present situation of instructional resource base construction based on internet plus**

"Internet plus" mainly refers to the combination of the Internet and traditional industries, but it is not a simple addition of the two. It is through IT and Internet platform, etc., that the Internet can be deeply integrated with traditional industries, thus creating a new development ecology [8]. "internet plus" represents a new productivity change, giving full play to the one-stop integration role of the Internet in social resource allocation, and fully integrating the vitality of the Internet into all fields of social life. In order to comprehensively enhance the innovation and productivity of the whole society, and finally form a new form of social and economic development based on the Internet. In education, in order to effectively exert the effect of information means, teachers need to make rational use of information means in classroom teaching. In order to integrate instructional resources with high quality, although educators have developed a number of high-quality courses, the actual application effect is not satisfactory [9]. The main problem is that the investment in hardware is not enough, the main thoughts are spent on building the network, and the network application construction is not paid enough attention, which leads to the lack of software resources.

Instructional resource pool is the integration of a large number of high-quality instructional resources serving learners' needs. Compared with traditional instructional resources, it has the advantages of large capacity, many types, fast updating and high value, and has become an important driving force for the reform of teaching mode. Although the instructional resources are increasing by a large margin at present, the practicality is not high, which can't serve students well. Slowly, teachers simply put the contents of textbooks into PPT on the Internet for students to download and view, which leads to students' lack of enthusiasm for learning and lower and lower teaching efficiency [10]. And most of the instructional resource banks have the following problems at the development level: ① The resource structure is scattered. ② The resource utilization rate is not high. At present, the content of educational resources is slowly updated, and the updated results can't get timely feedback. Therefore, the construction subject must make it clear that the standard for measuring the construction of instructional resource pool does not depend on how much, nor on the pursuit of completion rate. The real significance lies in the extent to which resources can support and meet the individualized and universal needs of learners' learning and teachers' teaching.

### **2.2. Importance of building high-quality resource platform**

To build high-quality resources, we should gather the strengths of hundreds of schools of thought and create a scene where hundreds of schools of thought put together high-quality resources. Adhere to the principle of openness, aim at mutual benefit, and actively advocate universities in and outside the region to jointly create a number of high-quality courses to serve the majority of teachers and students. Instructional resource database itself is an important carrier of professional construction informatization, and it is gradually developing towards a one-stop comprehensive education service platform. Based on "internet plus", the resource sharing design of information teaching platform in universities provides students with the latest learning resources, effectively integrates and shares excellent instructional resources, improves the teaching quality in universities, and provides a good learning environment for teachers and students in universities. There are the best instructional resources in the sharing platform, which can enable students to acquire knowledge anytime, anywhere, improve students' learning efficiency and enable students to actively participate in it. The deep integration of network technology and traditional teaching methods brings together high-quality educational resources of major universities to build and share and promote educational

equity. Cross-college credit mutual recognition system makes up for the imbalance of instructional resources among universities. The structural hierarchy of general resource platform retrieval is shown in Figure 1.

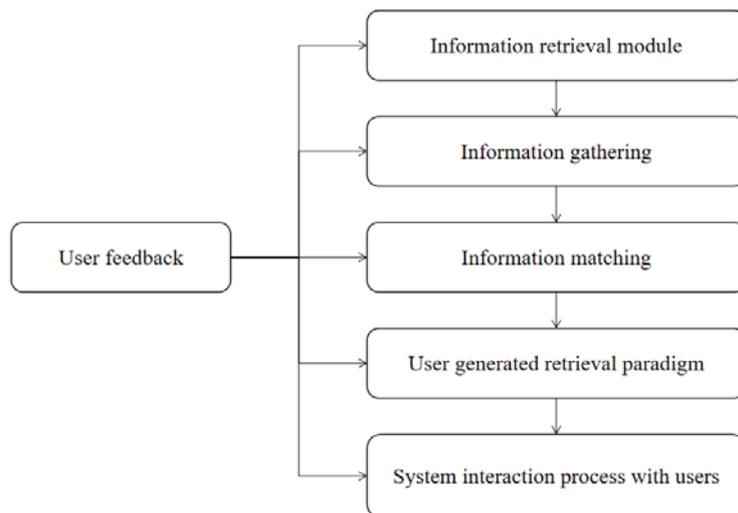


Figure 1 Structural hierarchy of general resource platform retrieval

The features of the information-based instructional resources sharing platform based on IT are as follows: ① It can provide users with a shared and developing learning environment. ② Provide intelligent and personalized learning space for users. ③ Have an integrated and cross-border learning network. ④ It has many functions. The purpose of education is student-centered, and teachers play an auxiliary role. The educational information sharing platform can not only provide high-quality instructional resources for students, but also become a bridge for communication between teachers and students. Therefore, the platform design should consider that students are not only users, but also providers of resources, which can better promote the progress and development of education. We should encourage students to go out, deepen the integration of university alliances, establish online cross-university teaching, and open up the mutual recognition mechanism of digital credits. Realize online teaching and cross-college learning. It is expected that in the near future, the resource database will probably become an integrated learning center for students' autonomous learning, teacher-assisted teaching and social personnel education and training, and the data analysis function will be further strengthened and mined.

### 3. Information-based instructional resource sharing platform based on internet plus

#### 3.1. Build the platform and create the running structure

The sharing platform of information-based instructional resources in universities based on IT has multiple functions, which can effectively improve the rapidity and security of the network platform and help to manage and maintain the platform. The construction of information-based instructional resources sharing platform in universities is a complex network work, involving many disciplines and requiring the cooperation of many departments. Instructional resource database is the practice of studying the design, development, utilization, management and evaluation of educational learning resources and learning process. In order to better adapt to the learning trend of mobility, openness, sharing and collaboration, the educational service function of the platform should be further optimized. The information-based instructional resource sharing platform will arrange the objectives and resources of several database modules with different objectives reasonably to coordinate their retrieval. Each database module is an autonomous computing entity with the ability to automatically identify knowledge. Finally, several database modules coordinate and cooperate to form a problem solving network. The overall architecture of the platform is shown in Figure 2.

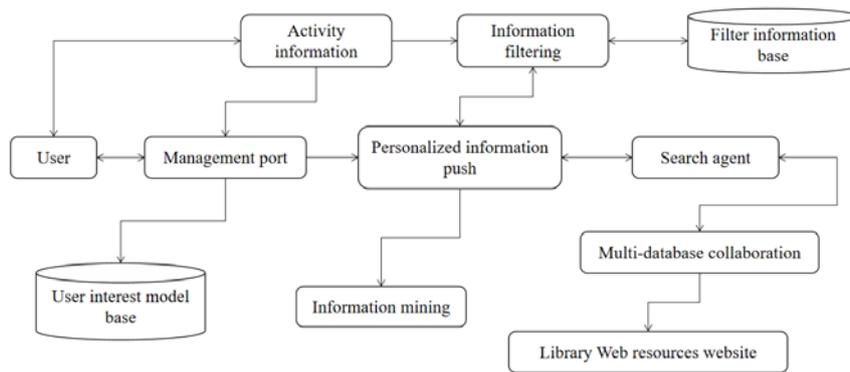


Figure 2 Overall structure system of platform

When designing the sharing platform of information-based instructional resources in universities, users can be divided into three types. They are management users, student users and teacher users. According to different users' requirements for the instructional resource sharing platform, different permissions are given to them, so as to give full play to the multiple functions of the instructional resource sharing platform. Implement the student-centered concept, and take it as the core standard to evaluate the education platform. When setting up the platform, it is necessary to establish a student evaluation system, so as to facilitate the use of shared instructional resources in combination with traditional teaching. In order to give full play to the advantages of the Internet, teachers should not only have the idea of Internet teaching, but also actively change teaching methods to realize the construction of information-based classroom.

Content and speed are the two key factors that affect users' use in the development of instructional resource library. The information-based instructional resource sharing platform in universities can refine tasks through different data modules, and complete each task with the help of servers. The information exchange between database modules is mainly a circular structure. The course database includes learning methods and requirements, course learning content, learning activity design and arrangement, learning evaluation design and arrangement, teaching courseware, and expanding resources. It provides rich resource support for teaching activities. While sharing resources, we should ensure the regularity of resources, not only to ensure that students can learn knowledge efficiently and conveniently, but also to ensure the intellectual copyright of resources. There are a large number of information platform resources, and the platform construction should consider the selection of high-quality instructional resources to push.

### 3.2. Effective management of platform resource sharing

It is the direct person in charge of the construction, use and maintenance of the instructional resource pool, and its initiative is directly related to the quality and update speed of the resource pool. Therefore, for those teachers who are responsible for the continuous updating of the instructional resource pool and spend a lot of time and energy, they should be given corresponding teaching workload identification, performance appraisal reward or special fund support for the project subject according to the level of resource updating. In the function of uploading and searching resources, users can upload resources, which is convenient for users to upload research results and their own resources for unified management. And users can search resources through metadata information. Universities can refer to the retrieval structure level and retrieval structure principle, and establish a instructional resource sharing platform structure system. The basic overview of credit mutual recognition system platform is shown in Figure 3.

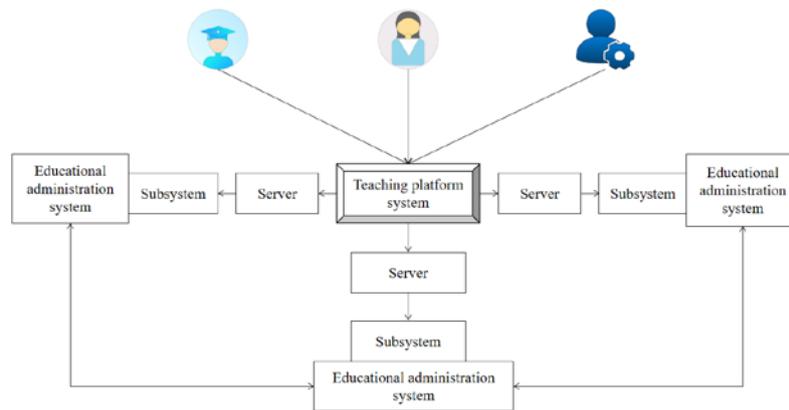


Figure 3 Overview of the platform foundation of credit mutual recognition system

In terms of information storage, the service platform uses NAS storage. Under this stable architecture, the platform can use open source software without purchasing separately, which saves the software cost and improves the compatibility of the system. And under this platform, users can log in to the service platform with familiar browsers for teaching and learning activities. The construction of instructional resource pool is a process of construction, use, enrichment and perfection. Industries, enterprises, universities are not only the subjects of resource construction, but also the subjects of resource renewal. Relevant government departments should strengthen the support for the construction of information-based instructional resources sharing platform in universities, optimize the construction of educational resources, mobilize the enthusiasm of relevant staff and train their professionalism. Committed to improving the quality and sustainability of sharing platform operation, and providing the best education service for college students.

#### 4. Conclusions

With the rapid development of network IT, great changes have taken place in teaching and learning in the classroom. Various educational and teaching activities are realizing the close combination of modernization and digitalization, theorization and practice, gradually consolidating the educational foundation, and striving to realize the leap-forward transformation from traditional education to digital information education. The "internet plus" has remarkable characteristics, which provides development opportunities for the information-based classroom construction of education and effectively promotes the modernization of education. Resource sharing is conducive to win-win cooperation of high-quality educational resources among different schools. The scientific allocation of high-quality educational resources solves the problem of limited educational resources and large educational population. The construction of information-based instructional resources sharing platform is a comprehensive systematic project, and it is also a huge project that needs innovative thinking. Its construction needs to combine technology and management. The establishment of information-based instructional resource sharing platform based on "internet plus" can effectively improve the teaching level of universities, innovate the teaching mode and promote the rapid development of China's education industry. Education should fully realize the development advantages of "internet plus", face up to the problems existing in the education information classroom under the background of "internet plus", and actively take effective measures to promote integration. This is of great practical significance to the cultivation of talents, the progress of education and the sustainable development.

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