

# *Research on the Platform of Academic Exchange between Teachers and Students in Chinese and Russian Universities*

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**Abstract**—There are many problems in Sino-Russian academic exchanges between teachers and students, such as language, region, number of participants and so on. With the development of information technology, more and more academic exchanges are advocated in the information environment. They are no longer restricted by the number, language and region. Rich academic resources, convenient ways of interaction and timely information have greatly changed people's academic exchanges, which will bring new life to future academic exchanges. In accordance with the software engineering development criteria, this paper elaborates on the requirements analysis and detailed design of academic exchange platforms in Chinese and Russian universities, and achieves such links as user registration, personal space management, announcement management, dynamic management of academic exchanges, information management of academic exchanges, display management of existing scientific research achievements and scientific research style. Besides the functions of exhibition management, video management of expert lectures in academic exchanges, query and download of academic materials, moderator display management and authority management, it also includes the highlights of integral management, intelligent search, intelligent recommendation and so on. It is a collection of dynamic publishing information function of academic exchanges, query and download function of academic exchanges, and subject. Research results display function, online communication function and other services in one platform. Through this platform, we can make up for the unbalanced distribution of academic resources, realize the sharing of information resources and improve the efficiency of academic exchanges.

**Keywords**—*sino-russian universities; academic exchange; platform; three-tier architecture*

## I. INTRODUCTION

The pace of internationalization of education has formed an important trend in the development of the educational era. International academic exchanges and cooperation have increasingly become the main way to realize the internationalization of higher education. During the 13th Five-Year Plan period, China and Russia actively sought cooperation in the field of education between Chinese and Russian universities by means of the development

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Research and implementation of the academic exchange mode between Chinese and Russian Universities under the background of "Internet +" (GBD1317062)—a special topic for youth in Heilongjiang Provincial Education Department

opportunities of the "China-Mongolia-Russia Economic Corridor". The natural geographical good-neighbourliness and good tradition of cooperation between the two countries have brought great opportunities for exchanges and cooperation between the two universities[1]. Heilongjiang Province, as the bridgehead of international exchanges and cooperation between China and Russia, has extensive academic exchanges with Russian universities, but all of them adopt traditional ways of communication. Although these modes of communication can play a positive role in promoting, they are limited by language, region and number of participants, which makes it difficult for academic exchanges to play a sufficient role, and even less to play a national propaganda role. With the development of information technology, more and more academic exchanges are advocated in the information environment, which is no longer restricted by number, language and region[2]. Rich academic resources, convenient ways of interaction and timely information have greatly changed people's way of academic exchanges, making future academic exchanges glow with new vitality. In 2015, experts and scholars put forward the idea of "Internet + education", which was highly valued by the state[3]. Based on the theory of "Internet + education", a diversified and open academic exchange platform for Chinese and Russian teachers and students is established between the Internet and the Chinese and Russian teachers and students. It changes the traditional "face-to-face" or "minority elite" experience of academic exchanges and competitions, makes up for the unbalanced distribution of academic resources, realizes information resources sharing, and promotes the integration of "industry, education and research" between China and Russia.

## II. CURRENT SITUATION AT HOME AND ABROAD

At present, the most widely used academic exchange websites in China are China Academic Conference Online and Science Network[4]. Although these two websites are not professional academic exchange platforms, some new scientific and technological information and online academic resources provided by them have contributed to the promotion of academic exchanges among domestic researchers. Some foreign websites, such as the IEEE Conference, Calendar of Upcoming Events and so on, have similar problems with domestic websites, and academic exchanges are neither professional nor convenient[5].

It can be seen from this that a certain amount of theoretical and practical research has been carried out on academic exchanges at home and abroad, and some achievements have been achieved[6]. However, there are still some deficiencies in organizational and service aspects, and there are no mature results at present. Using the idea of "Internet +" to build an academic exchange platform between Chinese and Russian teachers and students, we can strengthen academic exchanges between Chinese and Russian Universities.

### III. PROBLEMS TO BE SOLVED

To study the needs and behaviors of teacher-student resource sharing in Chinese and Russian universities. Although the geographical location of China and Russia is close to each other, due to the differences in customs, culture and language, the communication between the two countries is not thorough, the demand is not clear and the communication is not smooth, thus affecting the effect of the platform in academic exchanges in higher education. Therefore, first of all, we should fully study the characteristics of academic exchanges between teachers and students in China and Russia, and formulate a reasonable academic exchange mechanism to promote in-depth interaction between the two sides.

How to give full play to the role of various user roles in the platform? In the process of application, the platform needs to integrate a variety of people with different purposes, experiences and ideas, such as academic guides, learners, evaluators and so on. How to attract these role application platforms and mobilize the enthusiasm of the corresponding personnel, and play an active role in the application process of the platform is the key problem to be solved.

Establishment and development of platform functional framework. On the basis of the above research, this paper makes a layer-by-layer analysis and summary of the communication problems that may arise in the process of academic exchanges, extracts the functional requirements of the platform according to the software function theory, and establishes the basic framework of academic exchanges between Chinese and Russian universities according to the needs analysis.

### IV. DEMAND ANALYSIS OF PLATFORM

The function modules of Sino-Russian academic exchange platform include user registration, personal space management, announcement management, dynamic management of academic exchange, academic exchange information management, existing scientific research achievements display management, expert lecture video management, data download, authority management, intelligent recommendation, etc. User roles include academic guides, students, teachers, administrators and so on. Different roles have different rights. Users should first fill in the required information for registration. After the identity verification has been approved, they can enter user account number, password and authentication code in the login interface. If the validation code is wrong or empty, the system will pop up the "validation code can't be empty or incorrect" message. If the user account and password are incorrect or

empty, the system will pop up the "user account and password can't be empty or incorrect" prompt information. If the user account, password and authentication code are correct, it will go into the main interface and display the user's name in the corresponding location. Administrators can add, delete and edit teachers and students' information, assign corresponding authority to teachers and students, delete and post comments, lock users, announcement management, academic dynamic management, academic data management; scientific research achievements display management, etc. Teachers and students can modify their personal information, view bulletins, academic exchanges, school exchanges videos, display scientific research results, search for information, download academic exchanges, and post, delete and comment posts. There are many Chinese and Russian teachers and students on the platform. They will post, discuss, leave messages and comment. Every user will have his own home page. The content of the homepage includes the basic information of users, the management of their own posts and so on. Through this platform, each user can communicate academically. The platform provides search function; uses prefix matching query keyword method, provide user experience, and meet the needs of users to quickly find interesting academic content. Enter the corresponding keywords in the search box and click the search button to read the matching data from the background database. The platform provides intelligent recommendation function and uses recommendation algorithm to recommend content that both teachers and students are interested in. The design of integral system in academic exchange platform can effectively enhance the activity of users and increase the use time of the platform. Teachers and students can get points by evaluating the best posts, active users who login continuously, daily tasks and setting up question-and-answer areas. The functional module diagram of the academic exchange platform between teachers and students in Chinese and Russian universities is shown in Fig. 1.

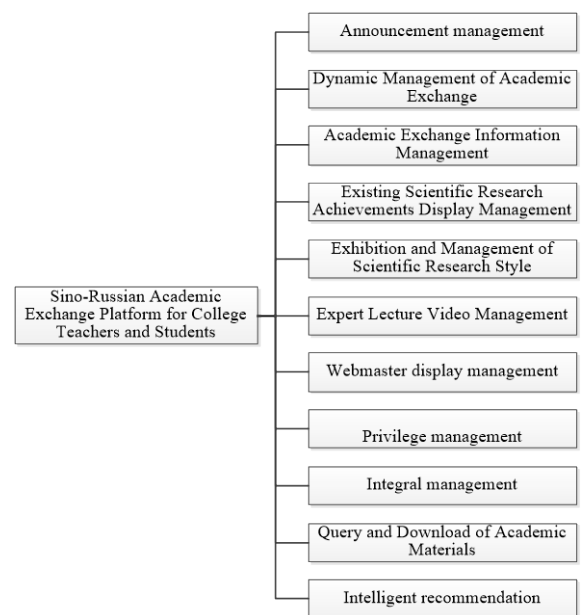


Fig. 1. Functional module diagram of academic exchange platform between teachers and students in Chinese and Russian Universities

## V. PLATFORM DESIGN

This platform includes teachers' information, students' information, announcement information, academic dynamic information, scientific research results information, academic exchange information, post information, comment information, section management, and other entities.

After teachers and students register and authenticate, they can login to the platform. Personal information is saved through session, and interface value is transferred. After successful login, the information saved in the session is displayed to the corresponding location. Session has an expiry date, after the timeout, the user login information is invalid, that is to realize the logout function; different roles have different rights. For tourists, you can browse information; for teachers and students, you can browse information and comments; for administrators, you can browse, comment and manage. In addition, the administrator can upgrade the user's rights, search the user on the page, modify his identity, and modify the user's rights field directly after submission. The platform displays 6 most popular posts on the home page. If teachers and students choose one post to click on, they will jump to the detailed page to display the title. The next line of the title shows the date, publisher and click volume. The specific content will be displayed after the change of line. For different levels of users, they click once and the number of Posts increases differently; if they browse their posts for themselves, they will not increase the number of posts.

Through the website announcement module, we can publish the information of expert lecture time, lecturer, subject, brief introduction, as well as important academic announcements and announcements that will be held in the near future. Teachers and students can arrange the time in advance according to the direction of the topics they are interested in, and reserve the corresponding professional knowledge to effectively improve the practical application of academic exchanges. Through the function of academic exchange dynamic module, we can publish the organization, schedule, results and live video of important academic exchange activities. Through the function of the academic exchange information module, the existing academic exchange video materials, lecture courseware materials, text materials and so on are saved. Academic exchange information retrieval and video-on-demand can be achieved, which can provide as detailed lecture materials as possible for teachers and students who fail to watch live academic exchanges on business trips and foreign studies, and realize the maximum benefits of academic exchanges. Through the function of the display module of scientific research achievements, scientific research achievements at home and abroad, new technology theory, scientific research papers and so on are introduced. To provide teachers and students with the latest technical theory, research results, scientific and technological literature and other academic materials, to ensure the innovation of research topics, the advancement of research technology, and the excellence of research results. Through the function of the gold scientific research elegance module, this paper introduces the typical figures, advanced deeds and award-winning situation in the field of scientific research. The purpose is to encourage

teachers and students to establish a good image and encourage everyone to work hard in the academic spirit.

## VI. INNOVATION

### A. *Integration and Innovation of the Idea of Academic Exchange*

Combining with the characteristics of the current management mode of higher education in China, it advocates that academic exchanges should be carried out under the information environment, and promotes the formation of a new mode of academic exchanges on the Internet, so that the interaction between teachers and students in China and Russia is no longer limited by time, place and language, so as to realize the sharing of resources and a convenient way of interaction.

### B. *Establishment of fusion framework*

The daily academic exchanges between Chinese and Russian universities are simulated, and the academic exchange platform for the establishment of multi-layer role management mode is established by using the idea of "Internet +", and a set of standard resource sharing, information interaction and evaluation system is formulated, which makes the academic discussion the best.

### C. *Diversified Interaction and Diversified Evaluation*

Diversified academic exchanges can better guarantee the effectiveness and quality of academic exchanges. Diversified evaluation system is more conducive to promoting the reform of academic exchanges, enlightening ideas, enhancing creative thinking, and promoting the combination of industry, University and research.

### D. *Technological innovation*

Using ASP. NET technology and three-tier architecture mode, we innovatively designed an expandable and open resource base.

### E. *Mobile Academic Exchange Environment*

To build an academic exchange platform based on mobile network to meet the diverse needs of users.

## VII. CONCLUSION

In the process of developing the platform for academic exchange between teachers and students in Sino-Russian universities, the problems to be solved are firstly analyzed, and the requirements of the platform are determined according to the requirements of software development. In the stage of demand analysis, the main modules of the platform are defined, including user registration, personal space management, announcement management, academic exchange dynamic management, academic exchange information management; existing scientific research achievements display management, scientific research style display management, expert lecture video management, authority management, intelligent recommendation and so

on. After completing the platform requirement analysis, the platform is designed in detail. As a comprehensive platform for learning, communication and interaction between teachers and students in Chinese and Russian universities, the platform for academic exchange between teachers and students in Chinese and Russian universities must focus on simulating the daily academic exchange environment and providing all-round and multi-faceted services for teachers and students in universities.

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