

A practice-oriented exploration on the teaching reform of Literature Information Retrieval in local application-oriented universities

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Abstract: Local application-oriented universities shoulder the important task of training application-oriented talents for social and economic development. Therefore, we should take the social demand as the goal and pay attention to the cultivation of college students' practical ability. The literature information retrieval course plays a more and more important role in the training of application-oriented talents. However, there are still some problems in the teaching of document information retrieval course in many local applied colleges and universities. Taking the safety engineering major of the University of South China as an example, this paper explores the reform of teaching mode, classroom content and assessment mechanism to improve students' literature information retrieval ability.

Key words: application-oriented university; Literature information retrieval; Personnel training; Exploration of teaching reform

Introduction

The Implementation Plan of the National Vocational Education Reform issued by The State Council in 2019 proposed to guide a large number of ordinary undergraduate universities to transform into application-oriented universities by 2022. In addition, the Guiding Opinions on Guiding Some local ordinary undergraduate Universities to transform into application-oriented universities issued by the Ministry of Education also regards training application-oriented technical and technical talents as the main task of the transformation and development of colleges and universities. Therefore, it has become an urgent task to promote the diversified development of higher education to adapt to the new normal of economic development and to promote the matching degree of talent training types with market demands.

Literature Information Retrieval is one of the most important courses offered by domestic undergraduate colleges and universities. Its main teaching goal is to enable students to have the ability of literature information resource retrieval through the study of this course. It can flexibly use the theoretical knowledge to improve the efficiency and accuracy of searching literature in the process of daily scientific research and graduation thesis; Strengthen students' ability to find innovation points through literature search, and improve their ability to analyze and solve problems. Under the background of the transformation and development of local application-oriented undergraduate colleges and universities, the traditional emphasis on teaching theoretical knowledge in Literature Information Retrieval has gradually failed to meet the training needs of application-oriented undergraduate talents. Therefore, under this background, it is a very urgent and urgent task to strengthen the teaching effect of teachers so as to improve the learning efficiency of students, and to carry out new reform exploration and innovation of Literature Information Retrieval.

The University of South China is a university jointly established by the Ministry of Industry and Information Technology, the Ministry of Ecology and Environment, the National Health Commission, the State Administration of Science, Technology and Industry for National Defense, China National Nuclear Corporation and Hunan Provincial People's Government. In 2018, it was selected as one of the first applied university reform pilots, aiming to train and transport a large number of high-quality applied talents for the state and local governments. Based on this, the university has set up the course "Literature Information Retrieval" during the undergraduate period to strengthen students' ability of information retrieval, scientific paper writing, PPT making and self-expression, and improve students' creativity, application ability, and ability to find and solve problems.

1. Current situation of literature retrieval courses in universities

As a highly applied professional extension course, practice plays an important role in the course learning process. Professor Wang Xiaolong of South China Agricultural University uses problem-oriented classroom to promote students' enthusiasm and initiative. It is characterized by learning first and teaching later, allowing students to find problems first, and then teachers to solve these problems. In the teaching process, students are the center, and students are encouraged to make full use of online information and library resources to complete independent learning after class, find problems and raise them in class. Specifically speaking, in the course teaching process, let students determine the theme according to their professional interests, release the corresponding literature information retrieval task, according to the problems encountered by students, and then carry out targeted explanation and demonstration, so as to solve the problem. Different from the conventional classroom lectures, presentations and homework exercises, this teaching method can effectively prevent students from only using a database they are familiar with and ignoring the whole basic knowledge system of the course. At the same time, some typical cases and problems that may be encountered in the search process are set up, so that students can divergent their thinking, express their views and display their own. Through the teaching method combining foundation and inspiration, students can master some basic retrieval skills, and on this basis, they can enhance their learning enthusiasm according to their own needs and interests, so as to improve their skill application level.

In addition, it focuses on two teaching objectives: imparting students' knowledge and cultivating students' ability. Similar to Wang Xiaolong's problem-oriented classroom, Liang Junior in Zhejiang University of Technology adopts task-driven methods to enhance students' independent learning initiative in the teaching process, enabling students to change from the traditional passive receiving learning to active exploration learning, and teachers to change from the role of "self-directing" to "directing". The implementation of task-driven teaching method can fully mobilize the enthusiasm of students in classroom learning, and students' subjective initiative has been significantly improved, and students' practical ability, self-expression ability, innovation consciousness, teamwork consciousness and basic academic moral quality have been well trained and improved.

For most courses, due to the fixed teaching place and time, the time for students to think and interact is limited, which is not conducive to the cultivation of students' subjective initiative, practicality and innovative consciousness. Therefore, Geng Xiaosha et al. adopted the combination of online and offline teaching to integrate high-quality online and network resources with offline classroom teaching, making full use of the advantages of both. This method can not only fully mobilize the subjective initiative of students in the course learning process, but also give full play to the guiding role of teachers in the whole course teaching process. The conventional teacher-oriented teaching mode is transformed into student-oriented and teacher-oriented teaching mode, which can not only improve students' learning ability and innovation consciousness, but also continuously improve teachers' teaching level.

In order to combine the characteristics of local application-oriented undergraduate colleges and universities, improve students' literature information retrieval ability, enrich students' access to information resources, cultivate students' ability to use the knowledge learned in this course to solve the problems encountered in the process of learning and scientific research, and make literature information retrieval an effective tool for cultivating students' professional development and improving their scientific research literacy. In view of the current problems in the teaching process of this course, Zhang Shaoqing et al. explored the teaching reform of this course from three aspects: actively integrating external resources, enriching the content of the literature retrieval course to optimize the teaching content, transforming the teacher-centered to student-centered to improve the teaching method, and using the literature management software End Note to improve the efficiency of students' utilization of literature.

2. Research and reform

Under the background of teaching transformation in local application-oriented colleges and universities, the teaching of literature information retrieval course should be closely combined with social needs, update the teaching content, improve the flexibility of teaching methods, optimize the assessment mechanism, and improve students' information retrieval ability and scientific literacy. The teaching objectives of this course are as follows: first, to train students to be able to proficiently apply various retrieval tools according to their needs, and to consult the literature and materials in related professional fields; The second is to improve students' ability to search, collect and analyze literature resources and to track the latest research advances in the field.

2.1 Research and reform contents

2.1.1 Change the teaching mode to be student-centered

The conventional passive acceptance mode should be transformed into an active exploratory teaching mode to cultivate students' subjective initiative in independent learning. Each class should be set up with 1 to 2 examples, which should be demonstrated by teachers in class first to stimulate students' interest, and then guide students to actively consult relevant literature and materials after class to form a search report. For example, to teach the CNKI database, first ask a question to find the academic papers published on CNKI by a teacher in our school over the years, set different search methods, compare the search results, and propose the reasons for different search results in class, leaving them for students to explore, stimulating students' interest and thirst for knowledge, and improving their learning initiative. In addition, the "flipped classroom" teaching mode is adopted, allowing students to walk on the platform as the protagonist, talk and discuss, and cultivate their PPT making ability and self-presentation ability.

2.1.2 Flexibly adjust the classroom according to the actual needs of students

Under the background of local application-oriented and efficient transformation, the course is adjusted from the original second semester to the third semester without changing the number of class hours. This change has two advantages. One is that students majoring in safety engineering will carry out major diversion in the second semester, and basically determine their major direction in the third semester, so that students can apply this course in the learning process of professional courses, which complement each other. Students will not only rely on the knowledge of professional textbooks, but also carry out the search and learning of related issues and obtain network resources. Second, it can exercise students' writing and expression skills, which also helps students learn to write project application when they apply for related projects in the third semester. Understand the cutting-edge progress in the project related fields, domestic and foreign research status and professional authoritative journals. Through this series of exercises, students can well solve the problem of incoordination between theoretical study and practice.

2.1.3 Comprehensive assessment, innovative assessment mechanism

Combined with the certification requirements of safety engineering majors and the nature of this course, the assessment method of the course is reformed. The traditional assessment method of "30% of the usual score + 70% of the final exam score" is changed to practical operation assessment, supplemented by theoretical knowledge assessment, so as to improve students' practical application ability of retrieval and expression, and strengthen the examination of team cooperation and independent learning initiative. The final assessment is composed of area: 10% of the class work, four class work assignments per semester; 60% of the usual grade, including 10% of the class questions

and 50% of the lectern presentation (flipped classroom); 30 percent for the final essay exam. The teaching mode based on self-practice has greatly improved students' ability to search literature resources, which can be truly used for students' professional course study and subsequent scientific research or graduation thesis writing. Class report and explanation is based on group, students are divided into several groups, students are allowed to choose their own interest topics, use the knowledge learned in class, search and analyze the topics, and show them in class, students and teachers score together, the report person gets the highest score. Students can not only improve their initiative and sense of responsibility through division of labor, but also master the literature retrieval knowledge more comprehensively and solably through discussion in the process of completing the course report.

2.2 Research and reform plan

2.2.1 Research ideas and methods

On the whole, the teaching effect of this course is good, but under the background of local application-oriented efficient transformation and engineering application professional certification, the application of the course is slightly lacking. Therefore, new ideas and methods are proposed for the existing teaching system and program.

Reform methods: (1) literature research method; (2) practice method; (3) reflection and summary method after class.

(1) Literature research method: It is a scientific research method to consult relevant literature and data in a targeted and planned way according to the needs of research projects and topics. It is a basic method often used in scientific research. In the process of exploring the teaching reform of this course, by analyzing and summarizing the current situation of the reform of "Document Information Retrieval" course at home and abroad, timely tracking the latest research results on the reform of this course for science and technology majors, and combining the characteristics of this school-based major, new teaching methods are summarized, which is conducive to the improvement of the teaching content and teaching methods of this course.

(2) Practical method: Different from other courses, "Document Information Retrieval" pays special attention to both theoretical knowledge and practice. The single teaching of theoretical knowledge in class will cause students to lose attention and then produce boredom; And allowing students to explore their own outside class without class demonstration will also make students unable to start. Since this major is not information science major, the teaching process of theoretical knowledge of this course should be as concise as possible and go straight to the topic, so that students can understand the value of this course in time. In the teaching process, 4 class hours were selected for students to operate on the computer, the teacher assigned the drill topic in class, and the students were allowed to complete the operation after class, and 2 class hours were selected for students to walk on the platform and report independently. In the actual operation process, students can personally experience the application value of this course, which can not only improve students' learning enthusiasm, but also increase the interaction between students and teachers, so that teachers can more easily understand students' learning situation.

(3) Reflection and summary after class: By summarizing the feedback of undergraduate students on the previous literature retrieval courses, we can understand their understanding of the literature retrieval courses. After the course, the opinions and suggestions of students after the reform of the teaching content and teaching method of this course were collected, and the teaching content and plan of the course of Document Information Retrieval were further optimized and improved. In such a teaching environment, students' learning efficiency for the course is more efficient.

2.2.2 Implementation plan

First of all, in terms of the selection of textbooks, the contents of Literature Information Retrieval textbooks used by almost all colleges and universities in the country are almost the same, and there is no distinction between disciplines and majors, which makes it difficult to organize the contents according to the characteristics of majors in the course learning process. In particular, the case analysis in class may not be a professional field that students are familiar with, and it is difficult to arouse students' interest in learning. Students of different majors have different emphasis on materials and information needs, so the same set of textbooks is difficult to meet the needs of students of different disciplines. Therefore, in the selection of textbooks, first according to the previous classroom feedback, solicit students' opinions, from the textbook library to select the appropriate textbooks for the major.

In terms of teaching content organization, according to students' professional characteristics and needs, condense course theoretical knowledge and go straight to the theme, that is, literature information retrieval, so that students can realize the importance of this course at the initial stage of the course. In addition, the traditional teaching method of literature information retrieval course theory is changed, and guided teaching is carried out through question setting. This method aims to improve students' subjective initiative in learning and integrate theoretical teaching into practice.

Secondly, in terms of teaching methods. Change the conventional theory teaching method of multimedia demonstration, change the teaching place to computer room or let students bring computers into the class. Relevant surveys show that the new teaching environment can make students pay more attention, and this teaching method can shorten the distance between "teaching" and "learning". The classroom teaching content is presented in the form of PPT, Flash, short video, etc., and with the teacher's explanation and practical demonstration, students' independent practice after class to deepen the understanding of the classroom content to achieve the interaction between teaching and learning. The specific implementation process of the teaching reform of this course is shown in Figure 1.

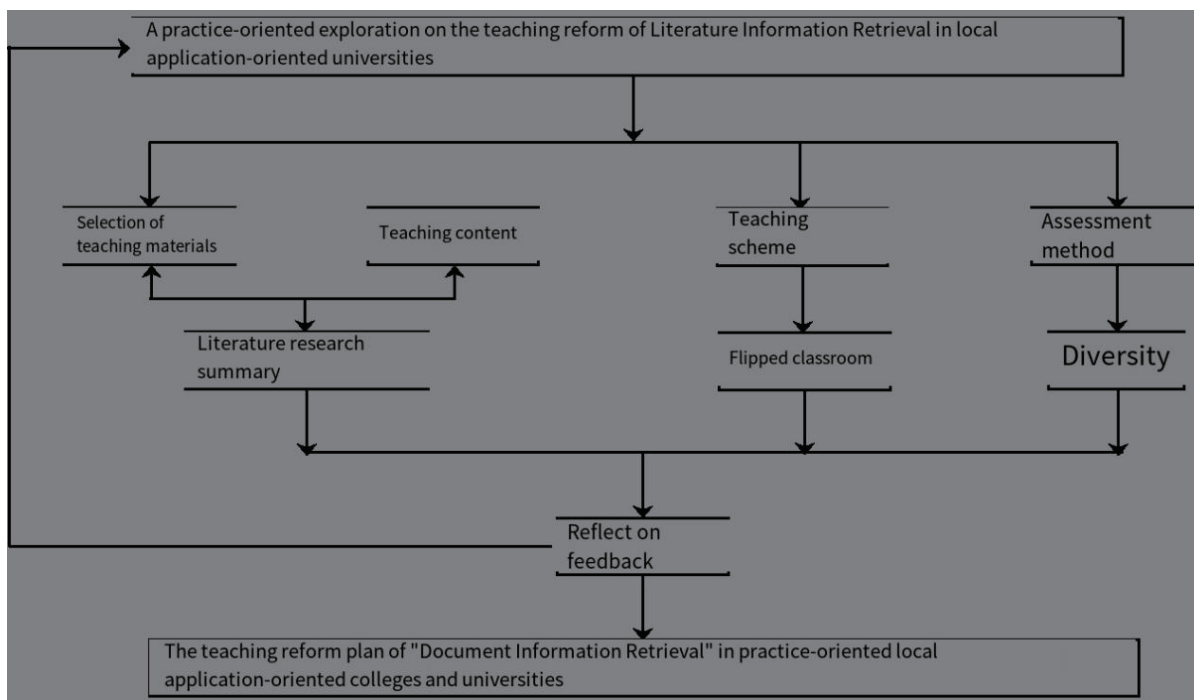


Figure 1. The specific implementation flow chart of the teaching reform of the literature information retrieval course.

3 Conclusion

In order to meet the needs of society, it is necessary to improve the information retrieval ability of students in local application-oriented colleges and universities, enrich the access to information resources of students, and enhance the comprehensive ability of students to use information retrieval technology to track the latest progress of relevant professional science in time and analyze and solve problems. The reform and exploration of information retrieval curriculum should be carried out from the three aspects of teaching mode, classroom content and assessment mechanism, so that it can play a greater role in the process of training high-quality applied talents.

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