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## Research on literature retrieval education to develop students' innovative ability in agricultural schools

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### ABSTRACT

Literature retrieval education can improve agricultural college students' ability of science and technology innovation and is an important means to cultivate students' innovation ability. This paper surveyed and analyzed the present situation of literature retrieval education to find out the defects of cultivating the innovation ability of the students. Compared with some foreign schools' advanced practice, put forward five measures to improve the innovation ability of the agricultural students.

### KEYWORDS

Innovative ability; Literature retrieval education; Education training.



## INTRODUCTION

Innovative ability generally refers to the ability to put forward new ideas and to solve the new problem. Specifically according to certain purpose and need, use all known information to produce some novel, unique products of social or personal value, including tangible inventions and intangible thought theory or technology. The cultivation of innovation ability cannot be accomplished quickly, which means we must start from the various stages of education. College education should cultivate the students' innovation spirit and innovation ability more. Training and bringing up a large number of talented persons of high-quality, innovative consciousness and innovative ability is the key.<sup>[1]</sup>

For the meaning of innovation of science and technology, we should first figure out what is the innovation of science and technology? How can we know it "new"? Where is the "new" and "new" to what extent? Only after research can we "create" targeted after research. Generally there are three kinds of this so-called "new"? First is the new view to put forward new ideas and thoughts and new theoretical assumptions; second is the new point to walk a path never taken and find a new disciplinary growing point in the edge discipline and interdisciplinary subject; the third is the new method to be able to skillfully use updated scientific research methods and means. How can we know it new? Where is the new and new to what extent? To solve these problems, we must have a certain ability to collect information and select information. Someone ever said, "Human activity of science and technology is essentially a process of intelligence information", although this proposition needs further argument, but it is certainly the special role in the activities in science and technology intelligence information. As we know, researchers in the whole process of science and technology (topic selection, experiment, summarizes the argumentation and evaluating results) all need to know the work and research achievements which have been obtained earlier and must be in frontier science and technology for collection, analysis and summary.

China is a big agricultural country and needs more training of innovation ability for agricultural science and technology personnel. Agricultural students take responsibility for the future development of agricultural science and technology. The cultivation of innovation ability needs more attention. So literature retrieval education can improve information literacy and become an important means to cultivate students' innovation ability of agricultural college.

## INVESTIGATION AND THE RESULTS FOR LITERATURE RETRIEVAL ADUCATION

Agricultural university literature retrieval education research group have made investigation, by presenting 300 questionnaires to the Jilin Agriculture Science and Technology College, Jilin Agricultural University, Nanjing Agricultural University, three different levels of agricultural colleges and universities, only to find literature retrieval course result is worrying.

### **Students' information consciousness is not strong**

Survey turned out: Students that "know but never use" library resources is 8.93%, know but rarely use the resources in the library is 42.28%, familiar and use frequently is 43.43% students. Not valuing and rarely participating in the related activities reflects the weak consciousness of university students' information.

### **Literature retrieval course classes is not the same**

Some are 32 hours, some are 24 hours. The theory and practice lesson in some schools is 1:1 proportion, when some is 1:3, some schools put the literature retrieval course as an elective while some schools as a required course.

### **Lack the knowledge of information retrieval**

During the period of undergraduate students that didn't go to the literature retrieval course is 59.86%, because of the document retrieval course teaching differences among the schools, 43.88% of the students don't know anything about information retrieval. Baidu become their main source of obtaining the literature information.

### **Weak information capability**

It reflects the aspects of students information ability:

1) The use of library services was mainly focused on the "catalogue", "books" and other conventional service. It's limited for "database retrieval", "document delivery", "interlibrary loan", "science and technology novelty search" and "user training such services"; 2) search engine is the main way that students get information (35.4%), while "database" is only 12.04%; 3) the current literature graduate students types of use are limited in the "book", "journal" and "dissertation" on, and the use sum of the "conference papers" "patent document", "standard literature" "report of science and technology" only accounted for 16.58%. For graduate students in science and engineering, the latter four types of literature apparently haven't drawn great attention from the students; 4) to find learning materials, email and browsing news is the main purpose of the graduate students to use the Internet; 5) 25% of the students know the novelty search, only 5.54% of the students did study sci-tech novelty search. Weak information capability leads that they can't accurately grasp the pulse of the development of science and technology, hard to avoid detours in scientific research work, even more difficult in the scientific research innovation.

## **DITUATION ABOUT DEVELOPING THE INNOVATIVE ABILITY OF STUDENTS IN CHINA AND ABROAD**

### **Current situation of literature retrieval education in China**

China Agricultural University literature retrieval education started very late, popularity is not very good as well. Objectively, on the one hand due to the present funding shortage of agricultural university, on the other hand due to the limitation of its professional characteristics, its survival got tested. The third aspect is that due to increased enrollment and number of school students, it led to lack of teachers. Especially some schools in order to survive was promoted to Undergraduate Colleges after the merger. The original school is not required to open the document retrieval course, So far some schools therefore have not carried out literature retrieval education, not even the full-time teachers in this area. The current situation of literature retrieval education is worrying. As a result, cultivating students' information literacy is faced with challenges.<sup>[2]</sup>

### **Foreign situation about training innovation ability**

#### **Innovate ideas of teaching**

Value the cultivation of interdisciplinary talents. In addition to elective courses and specialized courses, core course is a unique course at Harvard. All undergraduate students must take eight of the ten major categories in the past four years in core curriculum. It includes six disciplines: historical research, the foreign culture, ethical speculation, literature and art, science, social analysis.<sup>[3]</sup>

Value "combine theory with practice". There have produced more than 60 Nobel Prize winners in Cambridge University which has more unique educational philosophy. Around Cambridge builds immense, various science parks on the basis of high-tech. This development to a large degree comes from Cambridge laboratory technology's advantage and scientific research in industry, which provides the most favorable conditions for students' hobbies, interests, practice and study.

Value “learn in order to practice” and cultivate personality. Another feature of Waseda University shows in social services is paying attention to practical knowledge. Advocate academic independence, synchronized with the society and the times, let education and academic research serve for the country and social prosperity and progress.

### **The innovation of teaching methods**

Earnestly teach, practice more to develop minds. Increase mobile time. According to the interests and hobbies, change “want me to learn” to “I want to learn”. Contact society, develop in all ways. Students generally study in class only in the spring and autumn and most work, travel and visit friends and relatives in the summer.<sup>[4]</sup>

Physical quality is a part of the quality-oriented education. At the Oxford University, the library is almost empty usually at four or five in the afternoon. Health of soul forces them on a firm and habitual exercise, which has become a beautiful view of Oxford.

### **Continuously strengthen the teacher's innovation ability**

Essentially, teachers' teaching activity is a kind of creative activity. Student's quality is influenced by many factors, but the quality of teachers is the main aspect. German educator Diesterweg once said: “a bad teacher just tells the truth, a good teacher teaches students how to discover the truth”. Encourage well-known professors and scholars to throw more class, especially for junior student. Introduce discipline frontier situation and development direction to the students.

## **CURRENT PROBLEMS ABOUT CULTIVATING INNOVATION ABILITY FOR AGRICULTURAL STUDENTS**

### **Currently there is not a unified evaluation system in China**

#### **The effect of literature retrieval education hasn't caused serious attention**

The importance of literature retrieval course in each school is not the same, which may not have much effect on the growth of students or the improvement of the scientific research level. One-sided view is that it just means checking the data and this understanding differences lead to different emphasis of the course in schools. They thought that it's okay to open this course or not and opening elective courses will be enough. They disconnect with the school educational administration department. And teaching management is loose. Due to exception of professional teaching arrangements, the library open elective courses, school curriculum matters where leadership and administration office is not involved in the study of decision are decided by the library director and a museum.

#### **Teachers have low quality, less quantity, lack of stability**

Literature retrieval course are mostly performed by librarians part-time teachers. Many schools only have 2 or 3 teachers. Some lack professional theory training. Some foreign language levels are low, together with the status, poor working conditions, low salary, professional title evaluation difficult. There is also a big difference compared with other teachers. Teachers' sense of responsibility and enterprising heart is not strong and underpowered to acquire new skills, new knowledge, which leads to lecture unattractive and rarely carry out teaching activities. Several people are possibly to face teaching tasks of tens of thousands of students. It is conceivable that teachers are hard to stable and the teaching effect is not certain.

#### **Less research for agricultural students on cultivating innovation ability**

Research on the agricultural colleges for students to cultivate the students' innovation ability is relatively little. Our country is a big agricultural country, but it has not caused enough attention.

**Regions less contact one another**

Teachers engaged in research on innovation capability are alone in schools. Teaching view across schools and regions in a planned, regular way needs carrying out.

**IN VIEW OF THE PROBLEMS ABOVE, SOME MEASURES TO CULTIVATE INNOVATION ABILITY OF AGICULTURAL STUDENTS SHOULD BE TAKEN****Establish evaluation system for agricultural school students' entrepreneurship**

Under the relative organization and coordination, construct a platform for sharing the teaching and scientific research; Encourage teachers to carry out targeted research of cultivating the innovation ability; Refine the innovation ability index system for agricultural students to enable schools to implement adjust measures on local conditions.

**Strengthen the construction of teaching staff**

Hire associate research librarian who is engaged in consulting work or qualified in science and technology novelty search or strong in scientific research to teach. Require students to take simulation subject into classroom and accept on-site guidance, build QQ group. Make interactive communication with the students, which above all is to improve the teaching quality.

**Set up "cloud service" platform**

Schools set up "cloud services" virtual server. Establish cloud service platform to communicate with the reader service. Share timely online teaching relative information. And constantly update data. Fundamentally solve the problem of data access for students.

**Promote the teaching with innovation subject**

Make scientific research to promote teaching reform. Encourage students to apply for science and technology innovation projects. Schools should increase funding support. Each teacher must guide a college student science and technology innovation subject each year and apply the research achievements to literature retrieval teaching of agricultural science and technology personnel to make students benefit. At present, Jilin Agricultural Science and Technology College annually approve 60 provincial topics with support of scientific research funds 4000 RMB and 60 college projects with the support of scientific research funds 1200 RMB. Enhance the innovation ability of students through the topic research.

**Organize seminar in regions**

Organize seminar about agricultural innovation ability training for science and technology talents. Discuss the plans about innovation capability of agricultural science and technology talent.

**Deepen teaching reform in agricultural schools**

Deepen teaching reform. Change elective courses for compulsory course. Change reference books retrieval for the database and network information retrieval. Change the traditional teaching for multimedia teaching. Change single teaching for multiple forms of teaching. Change examination course for survey course. Focus on cultivating students' comprehensive analysis ability and the innovation ability. Change part-time teaching for professional teaching. These are to improve teachers' own quality and teaching level.<sup>[5]</sup>

## CONCLUSION

This paper surveyed and analyzed the present situation of literature retrieval education to find out the defects of cultivating the innovation ability of the students. Compared with some foreign schools' advanced practice, it puts forward five measures to improve the innovation ability of the agricultural students. Literature retrieval education can improve agricultural college students' innovation ability of science and technology but it's just an important means to improve agricultural college students' innovation ability. However, opening a course is difficult to achieve the ultimate goal of information quality education and the cultivation of innovative talents. In the course of teaching, we should cultivate the information quality education throughout and enhance students' information consciousness and strengthen students' desire to acquire new information and new knowledge, which above all is to make their information ability and information morality and information quality improved.

Our country is an agricultural country. The cultivation of innovative talents in agricultural colleges and universities plays an important role. In the era of "big data" "cloud services", "screen class" has changed people's traditional ideas. How to strengthen the education reform of literature retrieval, how to improve the agricultural colleges students' innovative ability, how to adapt to the development of the future information society, all become questions we keep thinking.

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