

Research on the Current Situation and Countermeasure of the Personalized Curriculum for Undergraduates

Taking Southwest Petroleum University as an Example*

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Abstract—Personalized development has been brought into the undergraduate talent training program by more and more universities. Taking Southwest Petroleum University as an example, this paper deeply analyses the current situation and effect of personalized curriculum learning of college students, explores the influencing factors of personalized curriculum, and puts forward improvement measures from two aspects of personalized curriculum selection and learning effect of personalized curriculum, with a view to improving university management. The management of personalized courses can better achieve the goal of personalized training of undergraduate student.

Keywords—undergraduates; personalized curriculum; talent cultivation

I. INTRODUCTION

With the continuous development of social and economic needs for talents, China's college teaching management system is reformed from a school year with a rigid teaching plan and the same training standard to a credit system that reflects students' freedom of study (Feng Xiangdong, 2003). [1] The credit system is a teaching management system that uses credits as a unit for calculating the amount of learning and a student's academic score as the basis for measuring the academic completion (Yao Limin, 2003). The implementation of the credit system makes students' choice of learning content have a certain freedom, which helps to enhance students' enthusiasm for learning. The Ministry of Education promulgated the "Brief of National Medium- and Long-Term Education Reform and Development Plan (2010-2020)", which clarifies the need for higher education services to establish a diverse talent concept, respect individual choices, encourage individual development, and cultivate talents without any restrictions." Therefore, cultivating individualized talents has become an important criterion for the quality of undergraduate teaching. Under the background of the teaching management system of the credit system, students can freely choose the

learning content and learning progress in the individualized curriculum. The implementation of the credit system has a positive effect on the promotion of the individualized talent training model. Based on this, more and more colleges and universities have already incorporated individualized training programs into undergraduate talent training programs, and actively encourage and promote individualized courses selection for undergraduate students in interdisciplinary [2]. For example, Nanjing University of Posts and Telecommunications requires undergraduates from 2006 to receive at least 10 points for independent and individualized learning. For example, Jiangnan University requires students to take at least 6 credits of interdisciplinary (disciplinary) courses during their studies. Based on the individualized curriculum talent training program introduced by Southwest Petroleum University, this paper investigates and analyzes the two aspects of individualized curriculum selection and individualized curriculum learning effects.

II. ANALYSIS OF THE STATUS QUO OF PERSONALIZED CURRICULUM SELECTION

Beginning in 2016, Southwest Petroleum University incorporated personality chemistry into the talent training program in the revised undergraduate talent development program. According to the requirements of the talent training program and the undergraduate professional training program, students are encouraged to develop their own personality. Students choose 2 or 3 credits of other majors and professional compulsory modules and elective modules according to their personal interests. According to the school's 2018 individualized credit requirements, the individualized credits of five majors, including marine oil and gas engineering, petroleum engineering (innovation class), petroleum engineering (international class), process equipment and control engineering, and software engineering, are 3 points, and the remaining credits of other majors are 2 points.

A. Analysis of the Status Quo of Personalized Curriculum

The number of female students in this interview and questionnaire survey sample was 42.31%, and the proportion of male students was 57.69%. The proportion of liberal arts

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students was 76.92%, and the proportion of science and engineering was 23.08%. In the interview sample, the proportion of students who chose a personalized course was 57.69%, the proportion of students who chose two personalized courses was 19.23%, and the proportion of those who chose three or more was 23.08%. Most students choose to take a personalized course in the sophomore or junior year (accounting for 88.46%).

1) *Analysis of the status quo and causes of personalized curriculum selection behavior:* There is a “preference to the liberal arts professional phenomenon” for college students to choose individualized courses. That is to say, about 85% of liberal arts students prefer to choose liberal arts courses for individualized courses. About 80% of science students in science choose liberal arts courses to pursue individualized curriculum. There is passivity in the study of personalized curriculum. According to statistics, about 70% of students take personalized courses is "to meet the rigid requirements of school personality chemistry", only about 30% of students take personalized courses in order to "understand the professional knowledge outside the profession". In addition, according to the interview, if the school does not have the corresponding personality chemistry requirements, about 20% of the students clearly indicated that they will not take the personalized course. At the same time, if the school does not have the corresponding personality chemistry requirements, it is determined that the proportion of students who will take the personalized course is about 35%.

The "preference to the liberal arts professional "and "passive" phenomenon of college students' individualized course selection behaviors indicate that the rigid requirements of the school's personalized credits have greatly affected the students' choice of individualized subjects. Compared with the more difficult science and engineering courses, the liberal arts courses with relatively simple learning difficulty are more popular among students. According to the interview, even if some liberal arts students want to take science and engineering courses, due to the lack of basic knowledge of their own science and engineering majors, even if they study a science and engineering course alone, there is no way to effectively learn the course or professional knowledge, so they will feel that choosing a science and engineering course is better than not choosing. The above two reasons have largely restricted the liberal arts college students to take courses in science and engineering. Through interviews with science and engineering students, it is learned that science and engineering students think that the science and engineering professional knowledge is difficult to learn. If students choose a science and engineering course, they may not be able to guarantee the time of study, unless they can choose a course with very close disciplines. Otherwise, most science and engineering students will choose liberal arts courses, because liberal arts courses are more "easy to learn and pass the exam." In addition, science and engineering students believe that liberal arts courses, such as economics or management knowledge, contribute to their subsequent career planning. In summary, the rigid rules of school personality chemistry and the characteristics of liberal

arts courses make the phenomenon of preference to the liberal arts professional obvious.

2) *Analysis of the factors influencing the selection of individualized curriculum:* “Table I” shows the factors that influence students' choice of personalized curriculum. It can be seen from the table that the proportion of students who are interested in hobbies and individual knowledge system planning is higher than 60%. There is still a certain herd mentality in the individualized course selection of college students, and the choice of 57.69% of the students' individualized course subjects will be influenced by the students around them. The above shows that most college students choose to take personalized courses in order to meet the rigid requirements of the school's personality chemistry. Therefore, whether it is easy to pass the exam is also an important factor in selecting individualized courses (46.15%).

TABLE I. FACTORS INFLUENCING THE CHOICE OF INDIVIDUALIZED CURRICULUM FOR COLLEGE STUDENTS

Influencing Factor	Proportion
Hobby	84.62%
Personal knowledge system planning	61.54%
With the classmates	57.69%
Related course foundation	57.69%
Is it easy to pass the exam	46.15%
The foundation of the instructor	7.69%
Form of examination	7.69%
Other	19.23%

III. ANALYSIS OF THE IMPLEMENTATION EFFECT AND REASONS OF PERSONALIZED CURRICULUM

The following is a description of the current status of personalized courses in the field of personalized courses. A 5-level scale (1 point means almost no help, 5 points means a lot of help) was used to investigate the interviewee's learning effect on the personalized course. The average degree of knowledge of individualized courses in the field of individualized courses of college students is 3.08, which indicates that personalized courses have a certain promotion effect on college students' understanding of the field of personalized courses. About 8% of the students think that the personalized curriculum has little help in understanding the field of the individualized curriculum of college students. 12% of the students think that the personalized curriculum means greatly improving the understanding of the domain of the individualized curriculum. Next, it describes the current status of the promotion of interdisciplinary subjects. The average value of the personalized course for college students is 2.92, which indicates that the interdisciplinary integration of individualized courses is not obvious. About 30% of the students think that the personalized course has little or no help for the undergraduate course. Only about 7% of the students think that the personalized course is very helpful for the study of their own professional courses. It continues to explore the

analysis of the impact of personalized courses on employment. The above analysis is based on the learning effect of the course to explore the learning effect of the personalized curriculum. This article further analyzes the impact of personalized courses on employment through interviews with graduates who have already participated in the work. The results of the questionnaire show that college students who have been employed or internship think that the average level of help for the personalized course is 3 points. However, about 25% of students believe that personalized courses have little to do with their current work (or internship).

Next, it analyzes the factors that make the personalized course learning poor. "Table II" gives the influencing factors that college students think is not good for individualized courses. It can be seen from the table that about 65% of the respondents regard the "blind choice of personalized curriculum" as the influencing factor of the poor learning effect of their personalized curriculum. About 62% of the respondents will "not be interested in the content of the course and only in order to meet the credit requirements" as an influential factor in the poor learning of their individualized courses. About 46% of the respondents "have no way to effectively integrate with their own professional knowledge system" as the influencing factors of their individualized learning effects; about 38% of the respondents regard "interdisciplinary learning is difficult" as their target Influencing factors of poor learning in individualized courses; about 23% of respondents considered "the time conflict between the professional curriculum and the personalized curriculum" as the influencing factor of the poor learning effect of their individualized curriculum.

TABLE II. FACTORS INFLUENCING THE POOR EFFECT OF INDIVIDUALIZED COURSES IN COLLEGE STUDENTS

Influencing Factor	Proportion
Blind choice of personalized curriculum	65.38%
Not be interested in the content of the course and only in order to meet the credit requirements	61.54%
Have no way to effectively integrate with their own professional knowledge system	46.15%
Interdisciplinary learning is difficult	38.46%
The time conflict between the professional curriculum and the personalized curriculum	23.08%

IV. COUNTERMEASURES AND SUGGESTIONS FOR IMPROVING THE EFFECT OF PERSONALIZED CURRICULUM

A. *Strategies for Optimizing the Behavioral Choice of Individualized Curriculum*

It is necessary to effectively diverting the preference to the liberal arts professional phenomenon. Guide students to establish their own career plans, with a focus on interest and career planning to choose a personalized curriculum. The administrators of different colleges and universities can invite the teachers of the corresponding courses to introduce the knowledge system of the corresponding professional courses, so that students can have a certain degree of understanding of

the corresponding majors before the course selection, and alleviate their fears.

It requires a mentoring system for individualized courses. A cross-college mentoring system can be implemented for individualized students wherever possible. After the student has confirmed the selection of a professional individualized course, he or she can be assigned a corresponding professional teacher to guide the course selection, thus effectively avoiding the blind choice of the personalized course. If there are many restrictive factors in the implementation of the multi-tutor system, you can use the "peer system", that is, the seniors who have already taken the personalized course as the mentor, through their experience to teach the direction of the individualized course selection of the students who will select.

It needs to pay attention to the impact of the peer effect. In a socialized environment, the social relationships embedded in individuals influence their behavioral decisions [2]. The student's personalized course selection behavior will be restricted by the social relationship (friend relationship, bedroom roommate relationship) [3]. Influencing factors in the selection of personalized courses in the past have pointed out that nearly 60% of students are influenced by their social relationships ("with classmates") when choosing a personalized course. The influence mechanism of social connection relationship on individualized curriculum choice decision-making among individual students (the effect model is shown in "Fig. 1"): that is to say, through socialization, group pressure and information resources, the individualized choice of student A will be similar to the individualized course selection behavior of other students who have social connection relationship (such as bedroom roommate relationship). Therefore, in overcoming the problem of students choosing the blindness of personalized curriculum, it is necessary to pay attention to the influence effect of peer effect on their curriculum choice, which will help to timely intervene in the blindness and unconscious behavior of students.

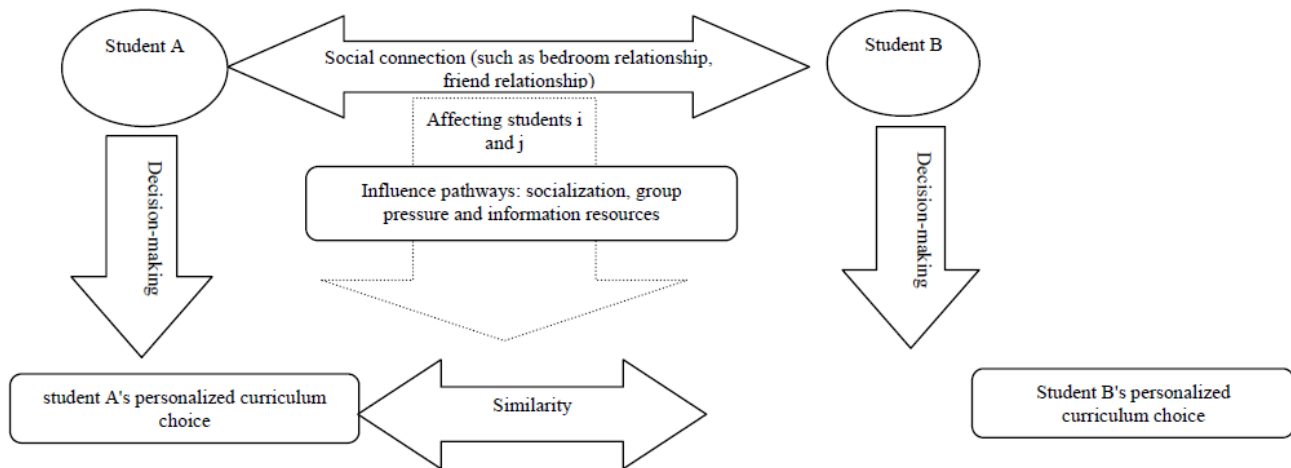


Fig. 1. Social linkage relationship and personalized curriculum selection linkage function model (taking two students as an example).

B. Countermeasures to Improve the Effectiveness of Personalized Courses

In order to improve the learning effect of individualized courses, students can improve the learning effect of individualized courses from the following aspects:

The organic integration of the personalized curriculum and the second classroom needs to be strengthened. Interest is the best tutor to learn, and the desire for knowledge in practice will guide students' enthusiasm for learning. Therefore, the improvement of the learning effect of the personalized curriculum requires the application of the knowledge of the personalized curriculum. Therefore, the personalized curriculum can be organically combined with the second class with practical credits to guide students to combine learning and practice, so as to promote the learning effect of personalized curriculum.

In the personalized curriculum, the interaction between the student and the individualized student needs to be strengthened. Personalized course credits provide opportunities for students from different colleges or different majors to learn a particular subject in the same classroom. Therefore, instructors can make full use of classroom opportunities to enhance interaction between students of different majors. Students can adopt the "help system" method, that is, assign one or several students of the major to a student who is pursuing a personalized course as the guidance and communication of the usual non-classroom time, this will help to improve mutual learning among students of different majors.

In addition, instructors in the classroom need to pay more attention to the individualized knowledge system. On the basis of in-depth understanding of students who are pursuing individualized courses, according to their existing knowledge system, they can recommend suitable professional knowledge books for students.

V. CONCLUSION

This paper deeply analyses the current situation and effect of personalized curriculum learning of college students, explores the influencing factors of personalized curriculum. The result show that the preference to the liberal arts professional and passive phenomenon of college students' individualized course selection behaviors, It can be seen that blind choice of personalized curriculum of their personalized curriculum. School administrators should strengthen the role of tutorial system and peer effect in the selection of personalized curriculum for college students, and improve the learning effect of personalized courses by strengthening the combination with the second classroom and "help-lead system", so as to better achieve the goal of personalized training of undergraduate talents.

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