Research on Vocational Tendency and Learning Quality

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Abstract

This paper analyzes how to improve the quality of students' classroom learning from the perspective of vocational tendency. The important motivations that affect the quality of classroom learning are analyzed. The paper puts forward the organizational form and the evaluation method for the vocational tendency classroom mode. The teaching effect of the course shows that the teaching model for vocational tendency is helpful to improve the students' programming ability and the teaching quality of the course.

Keywords: Vocational Tendency, Learning Quality, Mooc Learning.

1. VOCATIONAL TENDENCY

Vocational tendency refers to individual career aspirations and personal self-concept of Career. The concept of vocational tendency can be traced back to the beginning of the 19th century. With regard to its definition, there were several points of view. The first view was proposed by Sopp (Sopp, 1957). It considered that vocational tendency is a value orientation in professional life (Lent et al. 2003; Wetzel and Hell, 2014). The second view was proposed by Holland. He believed that career and personality traits have the same meaning. They are the consistency of personality traits and working environment. The third point of view was proposed by Schein (Schein, 1987). It considered that vocational tendency is actually a continuous exploration of the process (Rodríguez et al., 2016; Sepulveda et al., 2008). According to talent, ability, motivation, needs, attitudes and values of each person, career-related self-concept can be gradually formed in above process. In addition, some people think that vocational tendency is the behavioral view of career view. It is a stable behavioral tendency based on the personal evaluation. In short, the vocational tendency is the behavior of the main body with their own subjective characteristics and the longing proposed from objective conditions of the specific career. Personality Type Theory was originated in the 1960s. It was proposed by Holland. He divides vocational tendency and occupational environment into six categories: Realistic (Type R), Investigative (Type I), Artistic (Type A), Social (Type S), Enterprising (Type E) and Conventional (Type C). Everyone is a combination of above six career tendencies. Individuals engaged in career and their own career tendencies to match the job satisfaction, career stability and career achievement.

There are many empirical studies on vocational tendency, among which there are more representative studies. (1) Research on the relationship between job preference, race and Gender. Daly (Daly, 2005) researched the professional choice of college students. They indicated that in the professional selection and even the influencing factors of future career choice, colored people and females are different from Caucasians and males. It may be related to the social background of the United States. (2) Research on the differences of vocational tendency in different countries. Jennifer (Jennifer, 2003) studied the relationship between career preference and professional ambition of young women in Germany and the United States was studied. The differences between the two countries in the context of social and cultural were explored. The results show that the gender roles of young women in the United States and Germany have an impact on the formation of their career tendencies. (3) Research on vocational tendency and job satisfaction. Jiang et al. (Jiang et al., 2001, Jiang and Klein, 1999) studied the career advancement of staff in US software companies. The study found that the clarity of vocational tendency is positively related to job satisfaction. And the working environment is positively related to job satisfaction.

2. VOCATIONAL TENDENCY ANALYSIS OF COMPUTER PROFESSIONAL
Interest is the psychological tendency of people to explore something or engage in something. It is promote people to understand things, explore the truth of the important motivation. Career interest is people's interest in the profession. Career interests can motivate people to learn professional knowledge and take the initiative to participate in career-related practice. When gain the professional knowledge and professional skills, people will have a positive and emotional experience of comfort and satisfaction. Students can achieve their career aspirations and professional goals by stimulating their immediate interest in the profession and cultivating their indirect interest in the profession. Direct interest is the interest in the externalities of things or activities. It is the new things or new activities have a stimulating feeling. Students can develop hands-on and problem-solving skills by participating in a wealth of professional practice to stimulate their own direct interest in the profession. Indirect interest is the interest of individuals, who have a clear understanding of the purpose and meaning of things or activities. It has persistent and directional features. Indirect interest will not change easily due to frustration. Students can think and clarify the purpose and meaning of the profession. It can be consciously cultivated their indirect interest in the professional practice.

Ideal career is ideal for individual who wants to be able to engage in career. It is the individual according to social requirements and their own conditions to imagine the goal of the struggle. Ideal career and realistic conditions are often conflicting. It will have a significant impact on personal career development when you cannot achieve the ideal career. Is regardless of the reality of the pursuit of ideals, or timely adjustment of the ideal career to establish a new goal? It should adjust their ideal career when career bias deviates from professional career goals. Rationally choose an ideal career that is consistent or similar to a professional career goal. It is better to take the initiative to develop their professional interests, actively participate in professional practice, and enhance professional quality and professional ability to lay a good foundation for the career development and happiness of life.

Personal career tendencies are related to the ideal career, career interests, interested activities, and good ability. It will helpful to develop the personal interests if you are engaged in a career that matches your career. It is easier to achieve their career goals.

As a major motivation, career orientation is an important factor influencing the quality of college students' core professional courses. Core professional courses as the basis for the professional differences are the main access to professional knowledge and skills. According to incomplete statistics, in the employment of students, more than 80% of the jobs and students are related to the professional. For college entrance examination students, choose the original professional also accounted for more than 70%. It can be seen that the core specialized course is an important factor to determine the professional trend of college students. It is very important to improve the quality of college students' core professional course.

However, the reality is not ideal. Most professional students, from sophomore began to enter the full range of professional courses. But from classroom attendance, which is the reflection of the professional class classroom learning quality of the important indicators, the results are not satisfactory. For example, in the case of software engineering, the attendance rate of most specialized courses is low. The core professional course is slightly better, but it is not satisfactory. From the classroom performance of students to see the point of view, the situation is not ideal. There are chat, play mobile phones and the spirit of not concentrated and so on. The main reasons for the above problems are as follows:

(1) Computer science as an engineering major, the content of the course is biased towards technical. Unlike the literature and history courses can be in the classroom through the ups and downs of the story, the content with most of the engineering courses, as may be biased boring. It is difficult for most teachers to speak interesting about the course.

(2) Curriculum resources update requires focus on investment. The experimental resources of the course are rich, so as to provide students with objective and accurate practical problem diagnosis, analysis and improvement measures. The proposed improvement measures have a better relevance, rationality and expected reachability.

Computer professional courses have a strong theoretical and practical. The course content is abstract and difficult to understand. Students are prone to fear and learning burnout when learning. In order to cultivate the learning interesting of students, the teachers should first understand the personality characteristics, career interests and career tendencies of students. Guide students to pay attention to variety of occupations and engaged in a career required professional ability according to the student's personality type and career orientation. So as to guide the students to find the career tendencies and the professional combination points.
Then identify the career goals. It is the main subject of computer science teaching to explore the ways to improve professional competence of students, which is focus on the student personality type and career orientation.

We have distributed 500 Hollander job tenders questionnaire, which is revised by Kaiguang Liang et al. 467 valid questionnaires were collected finally. The effective recovery rate was 93.4%. For these recovered data, we conducted descriptive statistical analysis and variance analysis. The career-oriented test scores were sorted from high to low. The result of computer science and technology students is SCEAIR. The result of software engineering students is SCEAIR. The result of internet of things students is SIECRA. As can be seen, Social type is the highest score with the different professional direction. While the actual type of work and art work scores lower. It is indicated that students prefer to engage in social work.

Through the objectives analysis of professional personnel training program, we can get the professional type of career goals. The major professional tendencies of different professional students are social type. It is indicated that the students like to engage in service and education career. It involves the ability of interpersonal relationships. This is consistent with the professional environment in which students are mainly engaged in modern service industries. Students do not like to engage in regular affairs, data processing, literary and artistic. There are differences in the career goals and career orientation of computer special field of study.

3. CLASSROOM ACTIVITIES AND ORGANIZATION

According to the different status of professional career goals, the corresponding professional ability training is achieved through the compulsory courses, limited courses and optional courses group. Students can choose different course group according to their professional interests. Through the diversification of professional career goals, to meet the diversified career needs of students. It is effectively to reduce the degree of difference between students’ career orientation and professional career goals.

3.1 Class discussion

We organize discussions in class groups. Students are free to form a group of four persons. The composition of the group members does not change for one semester. The group members sit together every time. Classroom atmosphere is formation with the group cooperation and the competition between groups. The question in the classroom generally requires a panel discussion. Collective sense of honor will drive students to actively discuss and express their views. When the group asked to submit the answer to the question, the teacher randomly selected members of the group to analyze and explain. This 'vulnerable groups' really participate in the discussion. The relationship between the cooperation within the group will be established really. The classroom is problem-oriented teaching. Students are placed in a question-based teaching environment. The key factor influencing the discussion is the quality of the problem. High-quality problems closely linked to teaching objectives, but also trigger thinking. The questions we use for class discussion come from two aspects. The first is to collect, screening the problems that are proposed online learning and experimental of students. Secondly, the problems are designed by teachers based on the teaching content of the key and difficult points.

3.2 Class work

Classroom work generally includes several programming questions. It is scattered interspersed in the classroom discussion. The purpose of the design topic is to expect students to find the problem in the process of completion, and can comprehend the teaching objectives after the completion. Students can discuss in the grouped during the course, or seek for teacher's help. The teacher visits the classroom during the classroom work. The problem can be immediately pointed out and explained one by one. And the creative assignments can be presented. Typical questions can be explained centrally. As one of the evaluation basis for classroom performance, the teacher will revise the class assignments works, which are submitted by the students after class.

3.3 Extracurricular practice

Career targeting guidance program is targeted to guide students to understand their career tendencies. Develop students' professional interests through participation in professional practice. Improve the consistency of career orientation and professional goals. Look for the suitable career finally. Career targeting guidance program
includes career orientation assessment, corporate job descriptions, professional career goals, career planning and career planning. The cooperation between university and enterprises is the guarantee to achieve the success of career targeting guidance program. Enterprises participate in professional personnel training program design, full participation in the implementation of career orientation guidance program, such as setting up professional lectures, providing career opportunities and so on. The program is implementation from the first year of the university. It will help students to fully understand the relationship between career orientation and professional career goals. Students participate in enterprise project practice, summer practice, internship, graduation practice and other activities. In the professional practice process, they can continue to think about personal career development plan. And finally find the job that can give full play to their interests and abilities.

3.4 Mooc learning

With the analysis of professional teaching, we found there are several problems with the ordinary teaching model. (1) The teaching method of the theory class is single. The classroom teaching is not fun enough. Some course content cannot attract students' attention. The innovative exploration of teaching methods is not rich enough. (2) The resource in practice teaching is lack. Experimental equipment cannot keep up the pace of teaching development. At present, the experimental material used in some professional courses is still years ago. Some experimental equipment is old. And some lessons of practical teaching are not rich enough. Students can learn the class content through the video online before class. Discuss the problems encountered in the classroom. Then through video learning and network resources to further consolidate the knowledge after school. This is consistent with the internalization of students' cognition and knowledge construction from the perspective of cognition and behaviorism.

4. TEACHING EFFECT AND ANALYSIS

According to the different status of professional career goals, the corresponding professional ability training is achieved through the compulsory courses, limited courses and optional courses group. Students can choose different course group according to their professional interests. Through the diversification of professional career goals, to meet the diversified career needs of students. It is effectively to reduce the degree of difference between students' career orientation and professional career goals.

4.1 Assessment method

The course adopts stage evaluation, process evaluation and goal evaluation. The examination method is the acceptance of the course and the course system. Take the form of a group score. 3-4 students make up a project team. Each group completes the analysis, design and implementation of a simulation project. Each group set up a leader, who is responsible for the organization of this group of members of the division of labor and cooperation. The team leader can take turns to replace or specify one person.

The assessment takes place through the procedure acceptance. Achievement evaluation results using 5-level system: excellent, good, medium, pass and fail. The total score consists of three parts: design system, team performance and project reply. The assessment includes requirements analysis, detailed design, prototype system, logic design and physical design. Team performance: out of 20 points; project reply: out of 20 points. The final result from the total score to give results: 90-100, excellent; 80-90, good; 70-80, medium; 60-70, pass; less than 60, fail.

Each group submits a project document to the group at the end of the course for the selected practice project system. The document includes required document and optional documents. The required document includes the software requirements specification; database concept structure, logical structure, physical structure; module design and interface design. The optional documents includes source code, test plan and system user manual.

4.2 Teaching effect and comparison

We randomly selected three classes from the same professional in the practice of professional teaching practice contrast. Then we selected other three classes randomly according to the traditional teaching way. There were no significant differences in the learning habits and abilities of the above 6 teaching classes. The four teachers who have assumed the teaching task have many years of teaching experience. They have a strong teaching ability and sense of responsibility. The basic information of the test object is shown in Table 1.
Table 1: The basic information of the test object

<table>
<thead>
<tr>
<th>Variable</th>
<th>Classification</th>
<th>Students Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>411</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>12%</td>
</tr>
<tr>
<td>Grade</td>
<td>Sophomore</td>
<td>243</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>Junior</td>
<td>224</td>
<td>48%</td>
</tr>
<tr>
<td>Province</td>
<td>Zhejiang</td>
<td>237</td>
<td>51%</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>230</td>
<td>49%</td>
</tr>
<tr>
<td>Place of origin</td>
<td>City</td>
<td>215</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>252</td>
<td>54%</td>
</tr>
<tr>
<td>Whether student cadre</td>
<td>Yes</td>
<td>125</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>342</td>
<td>73%</td>
</tr>
</tbody>
</table>

Table 2 shows the midterm results and final exam results of each class. The midterm examination takes the form of computer based test. The final exam focuses on the programming skills of students. Average points, excellent rates and passing rates of the use of flip teaching class are generally better than ordinary classes. As seen from the class data of teacher A and B, the advantages of flip teaching are obvious.

Table 2: Test Results and Comparison

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Class</th>
<th>Average score</th>
<th>Excellent rate</th>
<th>Passing rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Pilot class</td>
<td>90.7</td>
<td>73%</td>
<td>91%</td>
</tr>
<tr>
<td>A</td>
<td>Traditional class</td>
<td>73.8</td>
<td>32%</td>
<td>80%</td>
</tr>
<tr>
<td>B</td>
<td>Pilot class</td>
<td>92.7</td>
<td>76%</td>
<td>96%</td>
</tr>
<tr>
<td>B</td>
<td>Traditional class</td>
<td>67.5</td>
<td>40%</td>
<td>82%</td>
</tr>
<tr>
<td>C</td>
<td>Pilot class</td>
<td>91.7</td>
<td>74%</td>
<td>93%</td>
</tr>
<tr>
<td>D</td>
<td>Traditional class</td>
<td>71.3</td>
<td>32%</td>
<td>74%</td>
</tr>
</tbody>
</table>

5. CONCLUSION

This paper answers the following questions. What is the main career orientation of computer professional students? What is the influence of occupational tendency on the quality of professional learning? How to improve the quality of classroom learning from the perspective of career orientation? Through the study of the above problems, this paper has made progress in the following aspects:

Firstly, guide students to career orientation, improve the quality of classroom learning, and promote the achievement of career planning. Understand the influencing factors of students' professional tendency of the quality of classroom learning in core specialty courses is actively guide students to a reasonable career orientation. Give full play to the positive factors in the factors, so as to improve the quality of classroom learning. It is capable to further promote the realization of student career planning.

Secondly, strengthen teaching targeted, promote teaching reform, and improve the teaching skills. It is one of the main research contents to study the preference and learning quality of the students with different professional tendencies. The professional teachers can better grasp the characteristics of different types of student to enhance the relevance of teaching. It laid the foundation for exploring a more scientific teaching model. So as to improve teaching skills, improve teacher-student relationship, and teaching benefits teachers as well as students.

Thirdly, deepen the disciplines understanding of the professional and promote the optimization of professional courses. It can be a broader perspective of the professional positioning through the study of students' career orientation and quality of core professional course learning. It is more consistent with the professional characteristics to develop the teaching plan. And it also facilitates the optimization of professional courses.

Fourth, improve the management of students, the employment rate and the quality of employment. It is more comprehensive to find out the status of students and to strengthen the effective management. To improve the quality of students in the core professional learning through a more complete and reasonable guidance system is capable to improve the employment rate and the quality of students.
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