

Optimization and Construction of Academic Guidance Course for Transportation Majors Based on OBE Concepts

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Date of Submission: 01-07-2024

Date of Acceptance: 10-07-2024

Abstract: The concept of 'OBE' refers to the concept of Outcome-Based Education (OBE), the core of which is outcome-, demand- and competence-oriented and student-centered, and the core concept of academic guidance is more or less the same, which makes the concept of OBE widely applicable and has a strong theoretical orientation role in optimizing and constructing the academic guidance courses of transportation majors. The concept of OBE has broad applicability and a strong theoretical orientation for the optimization and construction of academic guidance courses in transportation majors. In this paper, the OBE concept is introduced into the academic guidance work of transportation majors in Chinese universities, and the optimization and construction of academic guidance are designed in the reverse direction with the guidance of the core concept.

Keywords: obe concept; academic guidance; transportation majors; optimization and construction

I. INTRODUCTION

The OBE concept, known as Outcome-Based Education (OBE), was proposed by Mitchell and Spady^[1] in 1978, and is an educational philosophy and teaching model that focuses on the specific learning outcomes that students ultimately achieve, and contains three core ideas^[2]: student-centeredness, outcome-orientation, and continual improvement, and requires educators to Determine the competencies that students need to have in their own professional fields, and use these specific competencies as a guide to design teaching goals, organize curricula, teach teachers, and establish a framework system for teaching evaluation^[3]. This concept can effectively ensure that students have the required competencies after graduation through a

clear system of learning outcomes and a rigorous assessment system. At the same time, the OBE concept also emphasizes student-centeredness, focuses on the individual needs and development path of each student, and promotes individualized learning and comprehensive development. Academic guidance is to provide systematic and professional support and assistance to students in the process of learning according to the talent cultivation programs of different majors, aiming to help students overcome learning difficulties, optimize learning strategies, improve learning effects, and ultimately achieve the expected learning goals, and at the same time to help them find the most suitable direction for their own development according to their different situations, so as to better realize their self-worth. Therefore, the concept of outcome-oriented education can provide clear ideas and effective methods for the optimization and construction of academic guidance system.

II. STATUS OF ACADEMIC GUIDANCE FOR TRANSPORTATION MAJORS

Academic guidance is an important way to ensure the quality of student training. At present, most of the transportation colleges and universities offer academic guidance courses for transportation students, in which teachers of professional courses provide guidance on students' curriculum, graduate school or employment, development direction and other academic issues, and guide students to develop in a holistic manner, which is complementary to the duties of counselors. Academic guidance courses are often held once every four weeks, and the duration of the courses is not long, but they have a greater impact on the development of students, because they are related to the direction of development of students, so that they can not only bury their heads in the books, but

also to look up and see the road.

Academic guidance courses in the process of teaching and educating people, there are some problems that are not fully adapted to the international perspective of the strategy of a strong transportation country and the construction of "One Belt, One Road", which are mainly manifested in the students' understanding of the profession is more one-sided, and the grasp of the attributes of the cross-disciplinary is insufficient; the teaching content of the academic guidance is easy to stay in the textbook, and fails to guide the students to understand the development of the profession, and only focuses on the examination. Students understand the professional development, only to graduate school, employment and other short-term requirements to replace the long-term development goals; teaching content, form, the form of instruction is relatively single and the lack of personalized guidance and so on. All these put forward new requirements for the nurturing mode of the courses, and there is an urgent need to update and explore the nurturing mode.

2.1 Lack of professional and curricular guidance

At present, transportation majors as a large group of training professionals and its training mode refers to colleges and universities will be several similar majors merged into a large group of majors for unified enrollment, the students into the school, first after a period of basic education, and then according to the specific circumstances of the professional streaming study, which usually includes transportation, traffic engineering and traffic equipment and control engineering majors, part of the other colleges and universities also include logistics. Some other colleges and universities also include logistics and vehicle engineering majors. There is a big difference between the fields of study of each major after the professional streaming, such as traffic engineering majors mainly focus on traditional transportation based on the basic knowledge of civil engineering, learning transportation planning, roads, bridges, subways and light rail, tunnel engineering related knowledge, while the traffic equipment and control engineering majors focus on the involvement of a number of new technology areas such as artificial intelligence, big data, automatic driving, intelligent network and other related knowledge. However, in the university freshmen need to face a lot of confusion unrelated to the profession, such as the new campus life environment, interpersonal relationships, classroom teaching mode, etc. In this case, many students in the first year of transportation in the major categories of the basic education, the choice of professional diversion, the diversion of professional learning and research content and development of the

environment have not yet understood, which ultimately led to the student When choosing the streaming majors, students tend to follow the trend, blindly follow the social opinion and pursue the popularity and choose the streaming majors. In the implementation of the large-scale training mode of institutions, nearly one-tenth of the students have re-selected their majors, and nearly half of the students who have not re-selected their majors said that they were confused when choosing their majors and did not know how to make a choice^[4]. This situation is very likely to lead to students and their love of the major lost, thus affecting the initiative and confidence in the subsequent college career learning.

2.2 The content of academic guidance is set up in a single way

According to the survey on transportation students, it is understood that the content of the current academic guidance work is relatively single and not comprehensive enough, most of which is to carry out simple lectures on professional knowledge for the major at the time of freshmen enrollment, and to carry out guidance work on employment for students near the graduation stage of their senior year. However, it is understood from the students that the academic guidance expected by the students is the guidance that covers all aspects. When the guidance content of the academic guidance is too single, students will reduce the degree of thirst for academic guidance, when encountering difficulties, they often choose to consult the information themselves, ask for advice from better relations with their classmates, and seek help from older siblings, etc., which will directly affect the enthusiasm of the students to participate in the guidance and guidance of the final effect, only when students find their own interest in the content of the guidance, the students will be more active in participating in and utilizing the Only when students find out what they are interested in, will they participate and utilize it more actively. Moreover, according to the survey, most of the students think that the school's academic guidance is for the whole school group and mainly focuses on academic performance and course selection, neglecting career planning, psychological counseling, social practice and other aspects. Instructors often rely on their own personal experience and lack systematic and personalized academic guidance based on students' different interests and development goals, resulting in students not receiving targeted help. Transportation majors as a comprehensive and cross-cutting and highly applied engineering specialty combining many new technologies and application fields, the single content of the academic guidance is crucial to the implementation of China's transportation power and

the "One Belt, One Road" plan, and the transformation of the transportation industry into intelligent, networked, environmentally friendly and safe.

2.3 Inadequate institutional structure of academic guidance

A sound system structure and a perfect system are the effective guarantee for the implementation of college students' academic guidance work, which mainly includes the curriculum structure system, organizational structure system and guidance team system. According to relevant surveys, the vast majority of colleges and universities have not set up special academic guidance institutions or departments, academic guidance work is scattered in various departments, lack of unified coordination and management, and there is no professional academic guidance personnel, usually by the relevant teachers, counselors and administrators are responsible for the work of academic guidance, which usually makes the responsibilities and division of labor of academic guidance personnel unclear, resulting in the effectiveness of academic guidance. This usually results in unclear responsibilities and division of labor among academic advisors, leading to poor academic advising results. At present, the academic guidance work of major universities covers a wide range of contents, and the courses of academic guidance have been opened, including professional introduction, career planning, employment guidance and so on, but they are still superficial, and have not established a comprehensive and systematic system, and have not brought out the final desired effect.

III. OPTIMIZATION AND CONSTRUCTION OF ACADEMIC GUIDANCE FOR TRANSPORTATION MAJORS

3.1 Constructing an academic guidance model for professional streaming

Generally speaking, new students do not know enough about the development direction of their chosen field of study when they enter the university, especially the major categories of majors such as transportation, which need to be followed by professional streaming. In order to enable students to fully understand their own field of study, professional advantages, professional development, and the employment situation, it is necessary to strengthen the professional education of new students during the first year of college, and provide students with multiple perspectives, multiple levels of Opportunities for students to know their majors, and carry out professional guidance for freshmen from multiple

aspects. The implementation of the program should try to avoid the traditional large-scale professional introduction lectures, and should try to adopt small-scale, multi-frequency teaching and guidance activities, and strive to let every student actively participate in and gain something.

In the academic guidance in the case of professional streaming, the first semester courses should focus on the adaptation to college life, mainly including the school history and culture, the cultivation program of the college as well as the development of the current situation, campus resources and other introductions. Through the introduction of the above aspects can help new students better understand the campus environment and the school situation, guide new students to be able to faster and better personal academic career planning, and make full use of the school's various resources and so on. In the second semester, the course should focus on professional streaming, and arrange the course content for the confusion that the new students will face when they choose the streaming majors, using lectures, group discussions, face-to-face exchanges between experts and professors of the college, and personal interviews, etc. to introduce the streaming majors, employment of graduates of the streaming majors, and the cultivation programs and courses of the majors, so that the students can have a more comprehensive understanding of the streaming majors that they will choose, and help them to have a more in-depth understanding of their academic career. The introduction of the streaming majors, the employment of graduates of each streaming major, the training program of each major and the courses, etc. enable students to have a more comprehensive understanding of the streaming majors they will choose, help students to understand more deeply the degree of fit between each major and themselves, and to choose the streaming intention more rationally by combining with their own characteristics.

3.2 Improving the content of academic guidance

The content of academic guidance for college students is not only limited to major and course guidance, elective course guidance, study guidance, development guidance, minor and double-degree education, study abroad, graduate school and other guidance, but should also include developmental, personalized and targeted guidance. In the academic guidance, we should strengthen the cultivation of students' thinking, creativity and self-awareness, and combine professional teachers to formulate different guidance contents for students in different grades, with different learning characteristics and needs of different schools, so as to greatly improve the problem of single guidance content and

shallow depth. For students with excellent grades and high demands on their own goals, in addition to basic academic guidance, they can be guided in relevant competitions, science and innovation-related projects, help them integrate high-quality resources and guide them to connect with external excellent enterprises to facilitate visits and internships, and to broaden students' horizons. For students with learning difficulties, in addition to regular academic guidance can also be combined with outstanding party members to play the role of the party members, one-on-one guidance for their learning. In addition to the traditional offline academic guidance work, you can also actively utilize online social platforms according to the development requirements of the times and society to provide students with more comprehensive guidance resources. Various Internet media can also be utilized to provide online guidance to students, which can greatly improve the flexibility and convenience of academic guidance, so that students can receive timely guidance even on weekends and outside of school.

3.3 Building a Comprehensive Academic Guidance Structure System

A sound and efficient structural system of academic guidance can maximize its effectiveness. The structural system of academic guidance mainly consists of curriculum system, organizational system and guidance team system. In terms of curriculum system, different characteristics of the academic guidance course system and content should be formed according to different majors, and according to the expected effect of different majors on the cultivation of students to follow up the research and discussion, from the vertical time dimension, the content of the guidance set in stages, from the new student enrollment, the transportation category of professional streaming, the professional direction or modular cultivation mode, to set up the mechanism of the study; from the horizontal dimension of the utilization of resources In the horizontal dimension of resource utilization, the research on multiple modes of education is carried out from the perspectives of utilizing school resources, network resources, and off-campus cooperative cultivation bases, so as to comply with the development of the times and continuously enrich and improve the course contents of academic guidance. In terms of organizational structure, the whole process of academic guidance should be constructed synchronously with counselors and faculties, and cannot only rely on a certain department, but should set up a special academic guidance agency to discover and give full play to the characteristics and strengths of students from various aspects such as academics, life, and physical exercise,

etc. It should establish a synchronous coordinating mechanism with the various departments under the responsibility of the students' cultivation to facilitate the promotion of the students' all-around development. In terms of guidance team, if we want to build a high-level, high-quality, high-capacity academic guidance team, first of all, we should check at the source, select and employ guidance teachers with good ideological and political qualities and relevant professional qualities, and connect professional teachers and counselors with each other to build a deep-level academic guidance system, which is difficult to improve the professionalism of the academic guidance and guidance effect by the guidance teachers' own strength. It is difficult to improve the professionalism and effect of academic guidance only through the instructors' own efforts, and linking professional teachers and instructors with each other can do a better job of academic guidance for different majors.

IV. CONCLUSION

High-quality, high-level, high-capacity applied talents in transportation are an important guarantee for each country to promote the transportation industry, and academic guidance plays a very important role in cultivating excellent transportation students. This paper combines the current situation of insufficiently systematic and comprehensive academic guidance courses in transportation majors, and based on the concept of OBE, we provide a direction to improve and optimize the mode, content and structure of the courses. We also hope to find and solve the problems in the guidance process, and continuously promote the improvement of the academic guidance system to help improve the quality of student training.

V. ACKNOWLEDGEMENT

This paper was supported by the China Institute of Communications Education (CICE), Exploration and Practice of the Nurturing Mode of Academic Guidance Courses for Transportation Majors Based on the Strategy of a Stronger Transportation Nation and the International Perspective.

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