Establishment of Curriculum System of Intelligent Transportation Specialty in Vocational Colleges

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Abstract: It is supported by the integration of the core courses of the vocational training colleges and the operation of their own courses. This paper puts forward the construction direction of Intelligent Transportation Specialty Group, and puts forward the guarantee measures for the construction of Intelligent Transportation Specialty from different aspects. It provides a reference for the curriculum of Intelligent Transportation Specialty in similar higher vocational colleges.

1. Introduction

With the development of intelligent and information technology of urban road traffic system, the specialty of traffic safety and intelligent control has also emerged and developed. This major integrates many disciplines such as transportation engineering, transportation, computer network and control technology, which requires higher vocational colleges to have a perfect, reasonable and efficient curriculum system to meet the training of high-quality and highly skilled talents of intelligent transportation specialty. By further discussing the necessity of building the intelligent transportation specialty, we can draw a curriculum education goal with more professional construction characteristics, and explore the cultivation of innovative intelligent transportation professionals from the aspects of the transformation of teaching ideas, the allocation of curriculum system, the reform of traditional classroom teaching methods and diversified teaching, Cultivate students' ability to independently analyze practical problems of intelligent transportation technology and analyze and solve problems related to key technologies of intelligent transportation, and combine theory with practice, so as to cultivate comprehensive talents of Intelligent Transportation Specialty who can apply what they have learned to meet the market demand.

Table 1 Proportion of big data in transportation system

Classification	Proportion
Banking	3%
Casinos	13%
City Surveillance	7%
Commercial	3%
Education	7%
Government	21%
Industrial	4%
Ret all	3%
Translation	37%
other	2%

Intelligent transportation is an important part of the cross integration of transportation and the new generation of information technology industry. Intelligent parking, intelligent vehicle recognition, intelligent traffic signal system and vehicle assisted driving technology are the applications of emerging intelligent technologies in the field of transportation in recent years, and also represent the direction of traffic development in the future. However, the problem of insufficient supply of relevant R & D, engineering technology and management talents is still prominent. For this reason, relevant transportation majors should actively serve the development needs of intelligent transportation

industry. On the basis of traditional advantages and characteristics, Fujian shipping and Transportation Vocational College integrates computer science and technology, big data technology, control engineering and other related disciplines, speeds up the construction of intelligent transportation majors, and trains a large number of students to master transportation engineering, traffic information High quality, high-level, application-oriented and technical talents and high-level innovation team who have basic knowledge of traffic control and have the ability to apply intelligent transportation technology, face road intelligent transportation enterprises and institutions, and can engage in the design, construction, application and maintenance of intelligent transportation system, To cultivate high-quality technical and skilled talents, we must adhere to the professional reform led by the "combination of work and study". In the preparation of professional talent training scheme and teaching plan, the school highlights the talent training and post professional standards of "product orientation and project progression", which has important guiding significance for the construction of intelligent transportation curriculum system, It highlights the cultivation of students' basic working ability and comprehensive ability in relevant posts. Combined with the characteristics of the application of professional technology of intelligent transportation technology, and supported by theoretical knowledge, it focuses on the cultivation of students' technical professional ability of computer technology, Internet of things technology, cloud computing and big data. These technologies are the basis of the construction of intelligent transportation specialty. The specialty of intelligent transportation should be combined with the local economic characteristics and the corresponding development stage of the transportation industry. It should also realize efficient and sustainable development in the process of dynamic adjustment of resources, structure and mode. It aims to cultivate a certain scientific and cultural level, good humanistic quality, professional ethics and creative awareness, craftsman spirit of excellence, strong employability and sustainable development ability; Master the professional knowledge and technical skills, and be able to engage in high-quality and sustainable technical skilled talents in expressway system integrated operation and maintenance, intelligent traffic control system, traffic signal control, road transport vehicle management, intelligent parking management engineering, etc. Following the principle of "multi-party cooperation, multi openness and multi-disciplinary integration", based on the construction of intelligent transportation specialty, guided by advanced technology and aiming at the planning task of innovation and entrepreneurship, promote the integration of industry and education, science and education and school enterprise integration, build a diversified community of intelligent transportation in line with local characteristics and technical characteristics, and continuously improve the research and development of basic courses of intelligent transportation Key technology training and technological innovation make it a training base for high-level talents with a certain technical level and application ability with great influence, and diversify the input of talents for local enterprises and institutions.

2. Problems faced by the curriculum system of Intelligent Transportation Specialty

Intelligent transportation specialty is a highly comprehensive specialty and an emerging specialty. Therefore, there are many problems in the whole development process, such as specialty construction, talent training and so on. Among these problems, the most important one is the setting of professional curriculum system. Combined with the actual teaching work, the author summarizes the following types of problems:

2.1 Unclear professional orientation leads to imperfect curriculum system

When some higher vocational colleges set up the intelligent transportation specialty, due to the unclear professional positioning and development, the courses set up show a "four unlike" state, neither like the communication specialty nor the computer specialty, let alone the transportation specialty, which does not have the characteristics of the specialty itself. For example, when communication teachers are mainly responsible for curriculum construction, the courses of Intelligent Transportation Specialty tend to the communication curriculum system, setting up courses such as network technology, database and switch technology at large, while ignoring the transportation of

intelligent transportation specialty, which looks more like communication specialty; When traffic teachers are mainly responsible, the courses of intelligent transportation specialty are more inclined to the traffic curriculum system, setting too many courses such as traffic engineering, traffic flow theory, road capacity theory, traffic facilities and equipment, while ignoring the intelligence of intelligent transportation specialty.

2.2 The connection between professional courses is too low

In the process of curriculum revision of talent training program, the randomness and subjectivity of curriculum setting are too large, and the sequence of curriculum setting is not fully considered, which directly leads to the low degree of connection between professional courses and even faults. For example, the two courses of traffic engineering and traffic design are arranged to be explained in the same semester. Students will learn relevant design before they have mastered the basic knowledge points and concepts of traffic engineering; Another example is to give priority to the explanation of the database and the explanation of relevant basic disciplines such as computer network in the next semester. This way of curriculum setting leads to the lack of close connection between professional courses, which makes it very difficult for students to accept and understand and master the knowledge points spoken by teachers. At the same time, this situation also brings some difficulties to teachers in class, Supplement while giving lectures, classroom efficiency is not high.

2.3 Too many theoretical teaching hours

As the intelligent transportation specialty is an emerging specialty, the corresponding training equipment is also developing, and the differences of their own training equipment in various higher vocational colleges make the teachers of Intelligent Transportation Specialty set too many theoretical classes and too few practical classes in the usual teaching process, which makes the combination of the two unreasonable. Students blindly study theoretical knowledge and cannot be exercised in practice, which leads to students' low mastery of knowledge and poor classroom teaching effect, forming a situation in which teachers are tired in class and students are tired in class.

2.4 The curriculum is not closely related to the actual work

The curriculum of higher vocational colleges should be closely related to the actual work of students after graduation, so as to make students apply what they have learned. By reading the relevant literature on the curriculum system, the author learned that the curriculum setting process of Intelligent Transportation Specialty in most higher vocational colleges failed to fully consider the nature of students' actual work, and most curriculum systems paid too much attention to theoretical teaching, showing a situation divorced from practical work, resulting in the students' learning can not be applied in practical work, Some students reflect that the knowledge learned in school is useless, which leads to frustration in their work.

Table 2 Scale of intelligent transportation market unit: 100 million yuan

particular year	amount of money
2019	1428
2020	2159
2021	3022

3. Countermeasures for establishing the curriculum system of Intelligent Transportation Specialty in Vocational Colleges

3.1 Set up curriculum system based on professional characteristics

Firstly, when formulating the curriculum system, the teachers of Intelligent Transportation Specialty in higher vocational colleges should comprehensively consider the characteristics of the specialty itself, not only its intelligence, but also its transportation, information and service. Only the professional courses set up in combination with the characteristics of the specialty can form an

efficient and professional curriculum system. Secondly, communication teachers and transportation teachers should strengthen communication and exchange, break their own professional barriers, and actively solve the problems faced in the process of curriculum setting from the perspective of intelligent transportation professional development. Thirdly, during the course setting of intelligent transportation specialty, we should fully consider the connection between courses and the setting of sequence. Some professional basic courses should be explained in the first or second semester of freshman year, while professional skills or core courses should be explained in the first semester of sophomore year or junior year, This can ensure the continuity of students' curriculum learning and the smoothness of teachers' teaching. Finally, the curriculum should comprehensively consider the characteristics of students in higher vocational colleges. While paying attention to professional teaching, we can not ignore the interest of the classroom, which can increase students' passion and interest in classroom teaching.

3.2 Pay attention to practical teaching and set up curriculum system

Intelligent transportation specialty is a comprehensive specialty and a specialty with strong practicality. It not only requires students to master the theoretical knowledge of transportation and information, but also requires students to have strong operating skills, such as skilled operation of traffic simulation software VISSIM, traffic flow survey, switch operation, etc. This requires that the professional teachers should seriously consider the teaching methods and modes in the actual teaching process, and strengthen the practical teaching while paying attention to the classroom theoretical teaching. They can use the methods of computer operation or on-site actual observation for practical teaching. This teaching model can not only increase students' interest in learning and stimulate students' curiosity, but also fundamentally eliminate the current lazy state of College Students' classroom learning and improve students' learning efficiency.

3.3 Set up curriculum system in combination with the nature of professional posts

Based on the broad professional background of transportation design and intelligent management, it can be concluded that the students are not only competent for the broad professional background of transportation design and intelligent management, but also have a strong professional background of transportation design and intelligent management, Can also be competent for other types of professional related work. Therefore, in the process of curriculum setting of intelligent transportation specialty, it should be emphasized that multi-disciplinary courses such as Jitong engineering, electronic map, professional cartography, project management and quality management should be integrated into the curriculum system, so as to enrich students' theoretical literacy and skill literacy, so that graduates of the specialty can cope with their work easily and freely.

4. Conclusion

"Intelligent transportation" is an interdisciplinary comprehensive professional course, which must first be guided by market demand and employment. Its main feature lies in the close combination of theoretical knowledge and practice, inheriting and carrying forward the traditional advantages and characteristics, and on this basis, carrying out the construction of industry university research and peaceful platform, so as to realize the complementary advantages of teaching and scientific research, Then build an intelligent and information-based curriculum system and an applied innovative talent training mode. In the daily teaching process, teachers need to constantly improve their ability. In combination with the background of the era of big data, they should not only have a clear and reasonable control over the content of the course, but also be able to combine the interests of students to teach attentively, a reasonable and flexible assessment mechanism, and always adhere to the characteristics of student-centered and diversified teaching resources, Make students feel the fun of learning in practice, so as to cultivate more innovative talents in the direction of intelligent transportation.

References

[1] Fan Zhongyong Research on the Countermeasures of Ideological and political construction of Intelligent Transportation Technology Application Specialty in Higher Vocational Colleges [J] Science, education and culture collection (last ten days), 2021 (07): 148-149.

[2] Huang Jinfeng Research on the curriculum system construction of Intelligent Transportation Specialty in Vocational Colleges [J] Fujian communications technology, 2020 (01): 162-164.

[3] Guo Wenlian Research on the construction of Intelligent Transportation Specialty in Vocational Colleges under the background of Beijing Tianjin Hebei integration [J] Joint Journal of Tianjin Vocational Colleges, 2018,20 (07): 16-19.