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Challenges and Countermeasures for the International Talent Cultivation of Big Data Major

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Abstract

Big data is not only the core resource of the contemporary information age, but its cross-disciplinary applications and demand for international talents are also increasingly significant. Colleges need to pay attention to this trend and cultivate international talents with interdisciplinary knowledge, global vision and lifelong learning ability. The implementation of the Belt and Road Initiative has made the international talent training and exchange of colleges and universities more closely. At the same time, the fierce competition has also put forward higher requirements for the international talent training of China's higher vocational education. In the context of the Belt and Road Initiative, in view of the characteristics and current situation of big data talent training in Jiangsu Maritime University, this paper puts forward the qualities that big data professionals should possess, and puts forward countermeasures and suggestions for the training of big data professionals, with a view to playing a reference and leading role in the training of international IT talents.

Keywords

Big Data Majors, International Talents, the Belt and Road, Higher Vocational Education.

1. Introduction

Since the proposal of the Belt and Road Initiative by China, it has become an important engine driving global economic cooperation and regional development. This initiative has not only strengthened the connectivity in infrastructure, trade, and finance between China and the countries along the route, but it has also provided a significant platform for promoting the economic prosperity of participating countries [1-2]. In this process, the demand for high-level and high-quality international big data professionals is growing, which poses higher requirements for China in the field of talent cultivation.

As the steady advancement of infrastructure construction within the framework of the Belt and Road Initiative progresses, international professional teaching standards have become a prerequisite for big data professionals to extend their reach globally. Therefore, it is necessary to accelerate the exploration of aligning technical standards with professional standards, and professional standards with vocational education standards, to facilitate the internationalization of Chinese standards.

2. Internationalization Challenges for Big Data Major

2.1. Challenges of Cultivating Internationalized Big Data Talents

The continuous advancement and implementation of the national Belt and Road Initiative have brought positive effects to the digital industry, with the advancement of digital infrastructure in participating countries leading to an increased demand for IT talents [3]. Big data is a key component in the construction of digital infrastructure [4]. The development of digital

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infrastructure projects has created an urgent need for talents, especially high-quality, versatile engineering and technical personnel with international capabilities. The execution of cross-border engineering projects has also raised the bar for the quality and level of international talents.

In China, the cultivation of international IT talents, particularly in the field of big data, still faces significant challenges [5]. These include a weak foundation, a disconnect between technology and practical implementation, inconsistency with international industry standards, and a lack of cross-national and cross-cultural communication and exchange skills. China's big data sector started relatively late, and there is a lack of preparation in terms of faculty, teaching resources, and methodologies, resulting in students not having a solid grasp of foundational knowledge. Currently, some big data educational programs are overly theoretical, lacking practical and applied training, which makes it difficult for students to apply their knowledge in real-world settings. China's standard-setting in the field of big data lags behind, and there are certain disparities with international standards. International talents need to possess cross-cultural communication skills, but currently, China's big data education falls short in this aspect of training.

2.2. Current Status of the Big Data Talent Cultivation at Jiangsu Maritime Institute

The cultivation of international big data talents at Jiangsu Maritime Institute also bears an important new mission. How to train high-quality international big data talents who meet the needs of the Belt and Road Initiative, with a global perspective and proficiency in international rules, poses new demands for our institute's international talent training. It also brings new opportunities and challenges for the international development of the big data major. In response to the homogenization problem in vocational college education for big data technology and facing the future development of smart shipping, Jiangsu Maritime Institute leverages its 70 years of industry-specific educational advantages. Relying on the provincial-level Shipping Big Data Engineering Research Center, the goal is to cultivate composite technical talents with distinctive shipping features. Innovating the mechanism of school-enterprise collaborative education is key to building a high-quality composite talent cultivation system of big data + shipping technology skills. This aims to train more high-quality professional talents with knowledge in big data and the shipping industry, providing clear direction for the talent cultivation in IT-related specialties of our institute.

However, in terms of the international cultivation of big data talents, Jiangsu Maritime Institute still faces several issues:

The target positioning for international talent cultivation is not accurate enough. The course structure for international talent training is unreasonable and lacks effective teaching practice components.

The rapid update of information technology versus the outdated content of textbooks currently used in the big data specialty. Teaching methods are still somewhat distant from industry needs.

The international level of the teaching staff is not high, and there is a lack of international exchange among teachers.

The consideration of the needs for international talent cultivation is inadequate, and training of international knowledge and skills is lacked.

These issues will hinder the internationalization of big data talent cultivation, making it difficult for the trained talents to meet the high demands of the international talent market.

2.3. Quality Requirements of Internationalized Big Data Talents

The international qualities of big data talents refer to the capabilities and qualities that big data professionals should possess in a globalized context, including cross-cultural communication,

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international perspectives, understanding of international standards, and ability to engage in international cooperation. These qualities are important for big data talents to play a role on the international stage, and to participate in international competition and cooperation.

3. Countermeasures for Internationalized Talents Cultivation of Big Data Major

3.1. Enhance the International Level of the Teaching Staff

The construction of an international faculty team for big data majors is a key link in cultivating international big data talents. Big data majors need to improve the internationalization level of their teachers through internal training and external recruitment. The major needs to promote diversity and inclusiveness in the faculty team through diversified career development paths and training opportunities.

In terms of teacher introduction, majors should prioritize recruiting teachers with overseas study or work experience, proficiency in foreign languages, and knowledge of the latest developments in the international big data field. The major should be encouraged to recruit teachers with multicultural backgrounds and increasing the diversity of the teaching staff.

In terms of teacher training, the major should provide international training programs for teachers, including language training, cross-cultural communication training, international big data standards and compliance training, etc. The major should provide international teaching resources and support, such as international case libraries, international academic exchange platforms, etc., to help teachers better conduct international teaching. The major should establish an international incentive mechanism, such as setting up international teaching awards, providing international exchange opportunities, etc., to stimulate teachers' enthusiasm for participating in international teaching.

3.2. Reconstruct the Big Data Talent Cultivation Program by Integrating Internationalization

The big data talent training program needs to be restructured by integrating international and maritime-specific projects. In the process of restructuring, it is necessary to combine global trends and industry needs, and achieve restructuring in educational concepts, curriculum systems, practical teaching, and other aspects.

In terms of teaching philosophy, the major needs to establish the goal of cultivating big data talents with global vision, cross-cultural communication skills, and international competitiveness. The major needs to closely integrate the development trends and needs of the international big data industry to develop talent training programs.

In terms of curriculum design, it is necessary to strengthen the internationalization of core courses, introduce the latest technologies, standards, and cases in the field of international big data, such as data mining, machine learning, and data security. Majors need to add courses in foreign languages, international culture, etc., to improve students' cross-cultural communication skills. Bilingual teaching can be adopted in some professional courses to improve students' language skills.

In the practical teaching process, the major needs to establish a big data laboratory that is in line with international standards, providing advanced experimental environments and equipment. The major can collaborate with internationally renowned companies to jointly design practical courses and projects, providing students with internship and employment opportunities. The major should encourage students to participate in international-level big data competitions and projects to accumulate practical experience.

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3.3. Improve Resource Utilization by Relying on Maritime Characteristics

The big data major relies on the maritime characteristics of the school, making full use of the advantages of maritime big data resources to improve the internationalization level of big data talent cultivation. The big data major starts from the maritime characteristics of the school, relying on international scientific and technological cooperation, effectively integrating scientific research and international talent cultivation, transforming high-quality resources of science and technology into resources for talent cultivation, and further expanding the space for international cultivation and talent development of students through the establishment of an international exchange and cooperation platform, promoting the comprehensive development of internationalization of big data professionals.

The big data major combines maritime professional knowledge with big data technology, such as offering courses covering maritime data analysis, shipping logistics data management, etc. The major teaches big data analysis techniques using real cases from the maritime field, such as channel optimization, maritime safety data analysis, etc. Relying on the school's new-generation wheel, navigation simulation simulator, automated engine room and other facilities, the Jiangsu Shipping Big Data Engineering Research Center, which combines big data and maritime affairs, has been established, and students are encouraged to participate in practical projects. The major has established cooperation with universities and research institutions in the maritime or big data fields at home and abroad to jointly carry out research projects.

4. Conclusion

Big data professionals are an important foundation and guarantee for China's digital power strategy. With the further promotion and implementation of the Belt and Road Initiative, it is an urgent problem to comprehensively promote the reform and innovation of international talent training, and cultivate high-quality big data international talents with an international mind and vision and proficient in professional knowledge and theory. This paper analyzes the problems and current situation of big data talent cultivation of Jiangsu Maritime Institute, proposes the quality requirements for international big data talent cultivation, and puts forward countermeasures and suggestions, in order to play a positive role in the internationalization of IT talent cultivation and help achieve the goal of building a digital power.

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