

Exploration and Research on Talent Training of Industrial Robot Technology under the Pilot Background of "1 +X" Certificate System

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Abstract

The "1 +X" certificate system is an important innovation of the "20 articles of vocational education". The state attach great importance to the pilot work of the "1 +X" certificate system. Promote the organic connection between "1" and "X" and explore the talent mode, mainly including reconstructing the modular curriculum system of "documentary evidence integration" under the 1 +X system, exploring the new school enterprise dual education and teaching mode of "1 +1 +N", and constructing the education and training collaborative teaching mode of "combination of education and training" benchmarking the 1 +X certificate system, Strengthen the construction of training base and double teacher teaching team under the deep integration of schools and enterprises. The research findings prove that the implementation of this project will help to improve the talent training scheme of industrial robot technology and promote the pilot work of the second batch of "1 +X" certificate system of industrial robot application programming in our university.

Keywords

1+X Certificate System, Industrial Robot, Personnel Training, Exploration and Research.

1. Introduction

The national vocational education reform implementation plan proposes to start the pilot work of "academic certificate + several vocational skill level certificates" (1 +X certificate for short). As the main force of the 1 +X certificate system pilot, higher vocational colleges should strengthen the research and practice of the background, connotation and path of the implementation of the certificate system. We should take the specialty (Group) as the basic unit, connect the professional skill level certificates and standards, optimize the talent training scheme and explore the training mode. Create a full-time and part-time teaching staff, innovate the school enterprise cooperation path, and promote the organic connection between academic certificates and vocational skill level certificates. The "1 +X" certificate system is an important innovation of the "20 articles of vocational education". The state attaches great importance to the pilot work of the "1 +X" certificate system. On March 5, 2019, Premier Li Keqiang stressed in his government work report that accelerating the development of modern vocational education is not only conducive to alleviating the current employment pressure, but also a strategic move to solve the shortage of highly skilled talents. It is required to speed up the interconnection of academic certificates and vocational skill level certificates. [1-4]

The mutual connection and accommodation of documentary evidence is the essence of "1 +X certificate system". "1" refers to the academic certificate, which refers to the diploma obtained by learners after completing the learning tasks of a certain education stage in the educational system in the schools or other educational institutions that implement academic education in the educational system; "X" refers to several vocational skill level certificates. "1 X certificate

system" means that students obtain various vocational skill level certificates while obtaining academic certificates. The "X" is actually the most concerned thing inside and outside the vocational education community. When implementing the "1 +X certificate system", it is undoubtedly necessary to deal with the relationship between the academic certificate "1" and the vocational skill level certificate "X". "1" is the foundation, and "X" is the supplement, strengthening and expansion of "1". Academic certificate and vocational skill level certificate are not two parallel certificate systems, but the mutual connection and integration of the two certificates. [5-8]

Through the exploration and Research on the training mode of industrial robot technology talents under the 1 +X certificate system, the integration of academic certificate courses of industrial robot technology professional group and skill level certificates is realized, which is helpful to cultivate high skilled talents of industrial robot technology, build a national teacher teaching team and the "1 +X" certificate system of industrial robot application programming, At the same time, the ideal path of cultivating compound technical talents is of great significance.

2. Construction of industrial robot technology talent training mode under the pilot of "1 + X" certificate

2.1. Reconstruct the modular curriculum system of "documentary evidence integration" under the 1 + X system

Taking the curriculum system of industrial robot technology as the carrier and according to the "1 +X" vocational skill level standard of industrial robot application programming, the preliminary, intermediate and advanced certification units of application programming certificate are designed in reverse; At the same time, the modular curriculum of academic certificate is divided into "basic quality curriculum module", "professional basic curriculum module" and "professional ability curriculum module", and then the application programming certificate certification unit is integrated with the modular curriculum of academic certificate to form a modular curriculum system of "documentary evidence integration".

According to the cultivation of professional ability and professional core ability of industrial robot, the industrial robot application programming certification unit and the modular course of industrial robot technology academic certificate form a matrix of documentary evidence integration certification unit, and follow the principles of strengthening, supplement and expansion to integrate the academic certificate course and vocational skill certificate certification unit. The integration of hierarchical talent training and certificate level can realize the exchange of 1 and X credits, and optimize and reconstruct the talent training scheme of industrial robot technology.

The teaching content of the modular curriculum system of "documentary evidence integration" under the 1 +X system is based on the development idea of project leading and task driving, guided by vocational skills and based on ability. At the same time, new technologies, new processes and new norms are applied to update the curriculum standards and Curriculum content, so as to build a teaching resource database. On the one hand, improve students' ability to solve industrial robot project practice, on the other hand, stimulate students' creativity.

2.2. School enterprise cooperation to explore the "1 + 1 + N" school enterprise dual education teaching mode

Deepen school enterprise cooperation, adhere to the combination of work and learning, and rely on the three-level local R & D platform of provincial and municipal institutes and the integrated platform of intelligent manufacturing training, research and innovation. At the same time, cooperate with ABB Robot and Huibo robot to establish an industry education integration platform. Make full use of the places and resources of colleges and enterprises, cooperate with

1 +X evaluation organizations to implement teaching and training, and establish a new school enterprise dual education mode of "1 +1 +n". That is, the new school enterprise dual education teaching mode of "one enterprise mentor + one school teacher + several students", explore the talent training scheme suitable for the school positioning and students' needs, and cultivate technical and skilled talents in the form of tutorial system.

2.3. Constructing the cooperative teaching mode of education and training in the pilot of "combination of education and training" benchmarking 1 + X certificate system

The 1 + X certificate system reflects the important characteristics of vocational education as a type of education and is the fundamental task of Building Morality and cultivating people. In order to effectively carry out the training of industrial robot technology talents, the teaching mode of "project oriented and task driven" is adopted. "Combination of education and training" refers to the use of the "documentary evidence integration" course actually under construction in the school as the training content, with students majoring in robotics such as industrial robotics, electrical automation technology and mechatronics technology as the main objects, so as to cultivate students' practical ability to participate in real practice and real process projects, It can obtain the intermediate certificate of professional skill level of industrial robot application programming; Then, using the real engineering projects of school enterprise cooperation units, such as dual robot coordination, system integration and high-tech skill projects, select excellent students, specialty students and enterprise high-tech talents to participate in them, improve the students' practical work ability, and obtain the Advanced Certificate of vocational skill level of industrial robot application programming through work training.

2.4. Strengthen the construction of training base and double teacher teaching team under the deep integration of schools and enterprises

Taking the pilot work of 1 +X certificate system as an opportunity, according to the requirements of the pilot work, carry out the construction of vocational education training base and training teaching reform under the deep integration of schools and enterprises, integrate existing resources and increase investment, meet the needs of the pilot work of 1 + X certificate system, and complete the training, examination and certification work. Under the background of deep integration of schools and enterprises, we will do a good job in top-level design, build an integrated training base for industrial robot application programming teaching, assessment and competition, coordinate resources, and jointly build an off campus training base with abb, Huibo robot and Yalong intelligent schools and enterprises.

Relying on the advantages of its own training base, carry out the construction of "1 + X" double division team, bring professional teachers to cooperative enterprises, carry out "1 + X" training and enterprise cooperation projects, and then organize teachers to implement teaching and training tasks and actively carry out social services in practice. Relying on the advantages of Wenzhou and southern Zhejiang and Wenzhou Public Service Center of our institute, we will build a provincial training and Assessment Center for industrial robots, and hold the level assessment and training of industrial robot application programming skills in southern Zhejiang, Social service exploration practice is carried out in the formulation of professional skill level standards for industrial robot application programming and the formulation of talent training plan for millions of students.

3. Method and effect of project implementation

3.1. Project implementation method

Different methods are adopted in combination with different links of project implementation, mainly including research method, literature method, interview method, discussion and discussion method, team teaching method, etc.

3.1.1. Research method

Participate in the "1 + X" explanation meeting of industrial robot application programming, investigate, train and evaluate, organize the pilot talent training of industrial robot application programming in brother colleges, carry out the reform of teaching materials, teaching methods and teachers, and reconstruct the teaching contents and teaching materials.

3.1.2. Literature research method

In the course of the research, we will widely consult the relevant research at home and abroad closely related to this research through the literature query system at home and abroad, summarize the literature, and put forward the methods, basis and precautions conducive to this research.

3.1.3. Interview method

Visit school enterprise cooperative enterprises, interview heads of relevant departments of enterprises, and discuss the integration of industry and education and the development of dual education.

3.1.4. Discussion and discussion method

As a member of the industrial robot application programming expert group, I went to evaluate the development of industrial robot standards, teaching materials, teacher training and other related contents organized by the organization, and discussed the design of "documentary evidence integration", "combination of education and training" and "dual education". In the middle and later stage, it mainly discusses the problems existing in the implementation of the scheme and how to improve it.

3.1.5. Team teaching method

During the implementation of the project, enterprises and professional teachers in the school need to form a teaching team, enable the "1 + X" pilot work, and implement the teaching activities of students' x skill training.

3.2. Effectiveness of project implementation

In the early stage of the project, the "1 + X" vocational skill level assessment of industrial robot application programming was carried out in the major of industrial robot technology, electromechanical integration technology, electrical automation technology and electrical engineering and automation (higher vocational undergraduate). In the later stage, it can be popularized and implemented in the college. For example, students majoring in mechanical automation, numerical control technology and other related majors can participate in the training and assessment. It covers a wide range at the college level. Through the training and assessment at different levels of junior high school, more than 1000 students can benefit every year.

In terms of social services, we can carry out vocational skills training, assessment and appraisal for industrial workers, laid-off employees, veterans and other social personnel through documentary evidence accommodation and X modular courses, so as to promote reemployment through the improvement of industrial robot skills.

One belt, one road one belt, one road international service and cooperation, is being carried out for overseas service. For overseas branches of Kampuchea Silk Road college, electrical

automation specialty, and other countries with one belt, the training of industrial robot programming skills under the "1+X" certificate is carried out, so that occupation education can go abroad.

4. Conclusion

The 1 +X certificate system is an important reform measure determined in the national vocational education reform implementation plan. It is an important work content of the double high school plan and the first batch of National Teachers' teaching innovation team. Practice has proved that the implementation of this project will help to improve the talent training scheme of industrial robot technology, promote the pilot work of the second batch of "1 +X" certificate system for industrial robot application programming in our university, the pilot task of "1 +X" certificate for the double major of motor and electrical technology in our university, and the construction of the first batch of National Teachers' teaching innovation team of automation technology.

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