

Research and Exploration of Talents Training Model Based on Intelligent Manufacturing Specialty Group

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Abstract: Under the new era environment, the intelligent manufacturing professional group requires the relevant talents to have the ability of development and compound innovation. According to the current training scheme of intelligent manufacturing professionals in Colleges and universities, it is generally ineffective. The existing teaching mode over the years can not train the intelligent manufacturing professionals needed by the society and enterprises. Therefore, colleges and universities should be fully aware of the shortcomings of the current teaching mode, and give corresponding innovative reforms, and devote themselves to the training of double-qualified teachers.

1. Challenges of Intelligent Manufacturing Specialty Groups in Personnel Training Based on Industrial Development Environment

Under the Internet environment, it is the background of industry 4.0 to carry out industrial engineering projects in an intelligent way. The intelligent production mode of industry 4.0 has changed from the traditional production line. The traditional production line is mainly based on manual force and lacks the idea of individualized intelligent production. Intelligent manufacturing is the production mode emerged as the times require under the Internet environment. It is the reform and innovation of the traditional manual production line. The transformation requires the relevant staff to be familiar with the use of intelligent machinery and to transform the traditional mechanical operation into intelligent mechanical operation. Based on this, intelligent manufacturing professionals can meet the needs of the society. Made in China 2025 requires intelligent manufacturing professionals to possess exquisite professional skills, and relevant staff in technical posts to have innovative capabilities and solid basic knowledge.

2. Analysis of the Training Scheme for the Reform of Intelligent Manufacturing Professional Group

In order to meet the needs of talents development in the field of intelligent manufacturing, various applied vocational colleges need to take full account of the characteristics of intelligent manufacturing specialty to put forward reform measures for talents training, and devote themselves to innovating talents training programs of intelligent manufacturing specialty.

(1) Define the training objectives of intelligent manufacturing professionals

Firstly, it is necessary to conduct market research of relevant specialties, fully understand the scheme setting of curriculum development, and train relevant talents according to the needs of students and enterprises. This is an effective way to help the development of industrial intelligence in the new era of Internet environment. Based on this, in order to promote the effective measures of talent cultivation in Higher Vocational colleges, the author makes a detailed study of the annual work report of the government and related construction plans, and adopts a series of market research measures, such as talent market research, enterprise demand research, employer research, post talent demand research and graduate follow-up. Follow-up investigation, etc. A series of market research is helpful to summarize and analyze the current problems of talent training mode in Colleges and universities, and give timely suggestions.

Through this market research, we can see that the existing intelligent manufacturing industry in society requires students to possess two major qualities and two kinds of abilities, and relevant professionals to possess knowledge in three major fields: Mechatronics technology, automation control technology and numerical control technology; the two abilities include practical ability and theoretical knowledge ability. Intelligent manufacturing professionals are able to fully grasp the knowledge in three fields and two skills in order to give full play to their professional advantages, flexibly use professional knowledge, and solve practical problems. The practical abilities include students' self-analysis ability, self-control ability, self-learning ability, communication ability and execution ability, as well as whether they have the willingness to bear hardships and work hard; the two qualities include professional quality and moral quality, which are very important for the cultivation of students' two qualities in the training of intelligent manufacturing professionals. Importantly, it is related to the long-term development of students in the intelligent manufacturing industry. Of course, psychological quality is also a reflection of professional quality, which is one of the comprehensive qualities of the talents of intelligent manufacturing specialty.

(2) Strengthen the mechanism of school-enterprise cooperation and realize the innovation of “three-type” talents

1) Realize the mechanism of combining production with education. The combination of production and teaching helps to train students to become “three-type” talents, which is one of the manifestations of establishing “three truths” teaching mode in Colleges and universities. It is necessary to formulate a talent training plan by combining innovative technology platform with practical training platform both inside and outside the school so as to realize the integration of teaching and factory and help students to provide a technological research environment. The effective way to realize the combination of production and teaching is to realize the teaching factory. In this process, the teaching demand of intelligent manufacturing industry is the guidance of students' learning, which helps to train students to become internal technicians of enterprises and undertake the production tasks of enterprises. In addition, enterprises also need to send professional senior technicians appropriately to colleges and universities to teach professional courses, synchronize with school teachers and technical teachers, and form a strong team of teachers, which is conducive to carrying out the teaching strategy of “pass-on and help-lead” for the specialty of intelligent manufacturing.

2) Improve the evaluation mechanism of students' learning efficiency. To improve the evaluation mechanism of students' learning efficiency, it is necessary to incorporate the quality of intelligent manufacturing products into the assessment items. In this process, professional teachers and part-time teachers in Colleges and universities need to reach an agreed teaching goal, form a team of double-qualified teachers, through the production of intelligent manufacturing tasks led by junior or senior students, to achieve the progress of practical teaching. When students make relevant intelligent products, to give full play to the school-enterprise cooperation mechanism, the enterprise dispatches relevant senior technical personnel, carries out the quality inspection of students' intelligent products, and identifies whether the students' intelligent products are qualified, if they are qualified, they will be brought back by the enterprise. And the quality of the product will be included in the student's assessment project to become the witness of the students' ultimate learning efficiency.

3) Realize the “Six One” Project. The realization of “Six-one Project” is helpful to improve students' innovative ability and self-discovery consciousness. The project project project means that every student needs to participate in the skills competition at least once in school, such as volunteer service, enterprise project or enterprise practice activities, and after a period of study, get the corresponding certificate. And colleges and universities can appropriately employ senior technicians from enterprises to carry out on-site practical teaching and students' intelligent manufacturing knowledge evaluation. By sharing their own growth path and experience of failure and lessons, they can show their achievements to students and become an example for students, so that students may feel the same experience and be in phase. Intelligent manufacturing specialty practice is carried out in customs experience, and the first-line technology of enterprises is integrated into the production

process of enterprises with the help of mathematical projects. In practice, students can solve routine technical problems and improve their ability and social value.

(3) Constructing the Teaching Model of “Platform + Module”

Under the Internet environment, network platform teaching mode has become an effective assistant tool in the teaching of related specialties in Colleges and universities. Platform teaching mode is the product of the expansion of the scope of Internet application and has strong network characteristics. It is a powerful way to train intelligent manufacturing professionals to become comprehensive application talents by deeply studying the characteristics of students and the needs of talents in the society and building a platform-based and modular teaching method. Based on this, higher vocational colleges need to combine innovative entrepreneurship education and quality education to train talents of intelligent manufacturing specialty, and establish effective classroom teaching system for talents of intelligent manufacturing technology by combining professional modular network platform teaching mode. We are committed to achieving long-term quality education and broad-caliber and thick basic education for students.

Modular teaching, which mainly carries the education of improving students'professional ability, is an international and skilled way of education. Modular teaching method divides professional competence into different modules. You build the whole teaching project in a separate module mode, and carry out the educational task of the course of Intelligent Manufacturing. Building platform plus module teaching mode is an online and offline teaching mode based on O2. It can make good use of fragmented time to help students learn relevant knowledge. It can not only expand the scope of students'learning, but also increase the training space of students, and build a good life pattern for students, but also a kind of virtual plus reality. Integrated teaching method.

(4) Sharing educational resources through School-enterprise Cooperation

The training of talents in intelligent manufacturing specialty needs to strengthen the construction of students'practical training system, which is the core teaching content of applied vocational colleges. Therefore, higher vocational colleges should implement the teaching mechanism of “cooperation between teachers and engineering, integration of production and education” to realize the integration of domestic and international intelligent manufacturing. Higher vocational colleges should not only strengthen the construction of training bases for individual laboratories, but also strengthen the construction of professional training sites, and regard professional training rooms as advanced technology and engineering centers of intelligent manufacturing to provide comprehensive training services for students. This is the training ground that needs to be built inside the school. The off-campus training bases are mainly provided by enterprises, which is also the important role of the school-enterprise cooperation mechanism. Let students enter the enterprise training posts in the form of short-term training to learn the relevant post process, and take enterprise technology as the core element. This requires school-enterprise cooperation to build an information-based education platform. The theoretical knowledge learnt by students in class can be applied to the practical operation of enterprises. At the same time, the technological resources of enterprises can also be introduced into classroom teaching, and “master studio” can be established within higher vocational colleges to guide enterprises into higher vocational colleges, so as to realize a deep cooperation mechanism between schools and enterprises. This is of great help to students'employment rate and social adaptation.

In addition, in order to expand teachers'resources, teaching factories in higher vocational colleges can be used as carriers of expanding information resources. NC machine tool processing center, industrial control bus, industrial robots and other equipment in the intelligent manufacturing industry need to be put into the teaching factory in Higher Vocational Colleges to build training bases for students, which is also one of the ways to bring the intelligent industry into classroom teaching. In addition, it is also very important to make full use of Internet information technology to realize simulation operation. Higher institutions can help students to carry out simulation training by constructing virtual simulation automation production line training center. This not only helps to reduce the cost of introducing equipment into higher vocational colleges, but also greatly improves students'practical ability. For example, EASY-ROB industrial robot simulation training center in

Germany and Keller numerical control simulation training center in Germany were introduced.

(5) Carry forward the spirit of craftsmen and create a teaching team of “double qualifications”

As the transmitter of knowledge, teachers should fully possess the spirit of craftsmen and constantly strengthen the construction of double-qualified teachers. By employing high-tech professional technicians or high-level technicians of enterprises to join the school's education team of intelligent manufacturing specialty, we can participate in the training of talents of Intelligent Manufacturing Specialty in the whole process; we can help students increase the practice and exercise activities of enterprises by building relevant safeguard mechanisms. At the same time, teachers also actively participate in the practical activities of professional students, and become industry teams and organizations with students, to help students improve professional skills, promote the use of intelligent manufacturing equipment, which is also a powerful way to help teachers improve the industry influence and the ability of resource co-ordination. It is a long-term strategy for higher vocational colleges to adhere to the basic principles of training and introducing, improve the teaching staff and improve the teaching level of teachers.

In addition, the incentive mechanism for teachers should also be realized for a long time. Reforming the traditional assessment system of teachers, including professional construction as student tutors, curriculum arrangement and practical teaching, should be included in the assessment work of teachers. As far as possible, we should construct scientific research and innovation teams, teachers with integrated professional curriculum theory, teaching engineering, research and development laboratories, etc. Teachers of product development should actively participate in relevant enterprise projects. Furthermore, we should strengthen the innovation of teaching organization and management of collaborative innovation technology application platform, carry out effective teaching and research activities extensively, give full play to the positive role of the platform in teaching reform and teacher development, jointly build a “double-teacher” professional teaching team that is good at teaching, practical and high-quality, and comprehensively upgrade the college. The strength of teaching team of industry group leads the teaching reform.

3. Conclusion

In a word, for the students of Intelligent Manufacturing Major, in order to formulate an effective talent training program, higher vocational colleges need to start with education platform, teachers and enterprises, build a Double-teacher team, realize the school-enterprise cooperation mechanism, and provide a high-quality environment for the study of Intelligent Manufacturing Professionals.

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