

Discussion on innovation and practice of shipbuilding specialty Construction in higher vocational colleges

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Abstract: In recent years, with the progress of shipbuilding technology and the development of shipbuilding industry, the scale of shipbuilding industry is constantly expanding, and the demand for talents is becoming higher and higher. Especially during the period of our current economic structure transition, the demand for talents in ship manufacturing will be further expanded. In recent years, our higher vocational colleges have made great progress in the construction of ship major, but there is still a certain gap compared with the international advanced level. How to do a good job in the construction of ship major in higher vocational colleges, give full play to the professional advantages, build the brand of talent training and enhance the competitiveness of students in employment has become an important issue that higher vocational colleges need to pay attention to and solve. Therefore, this paper mainly focuses on the characteristics, problems to be solved and innovation path of the construction of higher vocational shipbuilding major, in order to provide some references for other professional construction.

Key words: higher vocational colleges; Ship professional construction; Innovation; practice

Introduction

As our traditional superiority industries, ship manufacturing has great development potential and market prospect, and is also a key development industry of our country. As an important output base of shipbuilding industry talents, shipbuilding major in higher vocational colleges undertakes the important task of training “shipbuilding craftsmen”. Therefore, in terms of professional construction, it should keep close to the development needs of the industry and butt up to the standards of the shipbuilding industry. In particular, it should optimize and upgrade the professional construction as far as possible from the aspects of specialty setting, personnel training, teaching system and teacher team construction, so as to truly lay a solid foundation for professional shipbuilding personnel training.

1. The characteristics of the ship profession

First, the training objectives of shipbuilding professionals should be combined with the actual production of shipbuilding enterprises, so as to serve the production of enterprises and cultivate highly skilled talents with certain practical ability for enterprises. Therefore, even in school, students should always put the shaping of professional ethics in a key position and strive to improve their professional skills, so as to better adapt to the specific needs of first-line production, management and service of shipbuilding enterprises.

Secondly, the teaching content of ship major should be updated according to the actual production of ship, and the existing teaching material content should be reformed and integrated. At present, many higher vocational colleges have their own textbooks, but the textbooks are still old and cannot fully reflect the current development of ship production technology.

2. Urgent problems to be solved in the professional construction of higher vocational colleges

In the current situation of rapid development of shipbuilding industry, shipbuilding professional construction is still faced with some problems, which need to be solved by corresponding measures. First of all, the form of school-enterprise cooperation is rigid. School-enterprise cooperation increasingly focuses on results, but ignores processes. In terms of the characteristics of shipbuilding, many related industries are high-risk industries. Schools and enterprises have too many concerns in the process of cooperation. Therefore, the forms and contents of school-enterprise cooperation are mostly superficial, and sometimes they are just to perfunctory inspection of superiors, without forming a stable and long-term cooperative relationship at all. They are still independent of each other and have no close connection. Secondly, the vocational ship major is still following the traditional personnel training mode, knowledge imparting is the main purpose, the students' hands-on ability is still not strong, let alone professional quality.

2. The effective path of innovation and practice in the construction of higher vocational shipbuilding major

(1) Cultivate outstanding field engineers of shipbuilding on the basis of professional advantages of shipbuilding

In recent years, with the development of the shipbuilding industry and changes in market demand, shipbuilding technology has been constantly improved and innovated, and the requirements for shipbuilding professionals are becoming higher and higher. At present, China's shipbuilding industry is in an adjustment stage of transformation and upgrading, technological progress, structural adjustment, personnel training and other aspects. Ship manufacturing enterprises are also in an increasing demand for highly skilled technical talents. The requirements for talents in the shipbuilding industry are no longer those who can build ships with machines and equipment in the traditional sense, but those who can adapt to changes in the production environment and can use advanced technologies for ship manufacturing and management. In other words, shipbuilding enterprises not only need high-quality professional and technical personnel, but also need high-quality talents with practical ability and innovative spirit. Therefore, the construction of shipbuilding major in higher vocational colleges

should give full play to the advantages of shipbuilding major, take shipbuilding enterprises' demand for talents as guidance, train students to have good professional ethics, professional quality and innovation ability, so that they can meet the modern shipbuilding enterprises' demand for high-quality talents.

First of all, the ideological and political activities of the curriculum should be implemented to integrate the craftsman spirit, ideological and political education, moral education and other aspects into all aspects of talent training. Advanced industrial concepts should be rooted in the hearts of every student, so that teachers can fully realize that talent training should not only be limited to knowledge imparts and skills cultivation, but should guide students to recognize the ship industry from the ideological and spiritual level. Be willing to strive for the industry all one's life, which is the foundation and key to cultivate outstanding field engineers of shipbuilding. Secondly, reconstructing specialized module courses. For example, through the analysis of the current development trend and talent demand characteristics of the shipbuilding industry, in order to train high-quality and excellent shipbuilding field engineers as the goal, determined the "walking on two legs" specialty curriculum setting ideas: on the one hand, on the basis of continuing to run the original specialty, add the Marine engineering and technology specialty; On the other hand, add computer aided design (CAD), computer aided manufacturing (CAM) and other professional directions on the basis of the existing ship specialty. At the same time, strengthen the research and development of modern shipbuilding mode, shipbuilding new technology, Marine materials, welding materials, welding equipment, painting process and other aspects, strive to bring fresh and fresh rich knowledge and advanced technology to students from different angles, truly ensure the solid landing of the new training mode of excellent shipbuilding field engineers, and play a certain role in promoting the training of shipbuilding professionals.

(2) Focus on the reform of teaching mode, and establish a new teaching system

The traditional teaching system is mainly based on classroom theory teaching and pays attention to the imparts of theoretical knowledge. However, under the background of the new era, the traditional teaching model has been unable to meet the requirements of talent training. Therefore, higher vocational colleges need to reform the traditional teaching model and build a new teaching system.

First of all, theory and practice are combined. For shipbuilding major, an advanced manufacturing technology simulation laboratory is set up in vocational colleges to simulate real shipyards, and a digital, integrated and interactive professional training platform is built. Relying on advanced VR and AR technologies, students can virtually show the whole process from design, construction to management and even every link of ships. To fundamentally solve a series of problems that have always existed in shipbuilding major, such as "weak comprehensive function of engineering practical training system and difficulties in students' hands-on operation". By guiding students to do, think and explore at the same time, we can cultivate their ability to flexibly solve complex engineering problems on site, which is more conducive to promoting the effective integration of theory and practice teaching.

Secondly, teaching and competition should be combined. With the continuous improvement of students' awareness of exploration and innovation, their interest and desire to participate in the competition are also increasing. Vocational colleges should encourage students majoring in shipping to actively participate in various scientific and technological innovation competitions. If students perform well in the competition, they can successfully obtain the TRIBON Certificate of Naval Architecture Engineer. After obtaining the Tribon certificate, the overall strength of employment of students will be significantly improved, and such talents will be more likely to get the "olive branch" from excellent companies.

(3) Take the construction of teaching staff as the core, and strengthen the construction of the two professional teams

In general, higher vocational shipbuilding major should pay attention to improving teachers' own quality, comprehensive teaching level and practical ability. Only in this way, can they better adapt to the requirements of modern shipbuilding enterprises for personnel training and the development trend of higher vocational shipbuilding major.

First of all, the overall structure of the teaching team should be adjusted reasonably, especially the introduction of "double-qualified" teachers with rich practical experience should be strengthened, at the same time, actively invite senior engineering and technical personnel of enterprises as part-time teachers to enrich the existing teaching team of the shipbuilding major, and fundamentally abandon the traditional "emphasis on introduction, light training", "emphasis on quantity, light quality" and other problems. To effectively improve the comprehensive ability level of teachers of shipbuilding major in higher vocational colleges.

Secondly, strengthen the training of double-qualified teachers to improve the overall quality of teachers. Higher vocational colleges should pay special attention to the training of double-qualified teachers and really take the training of double-qualified teachers as an important work. On the one hand, teachers should be encouraged to take turns to practice and learn in the shipyard every year, so as to accumulate real and specific cases for future teaching. At the same time, teachers should also take the initiative to consult the front-line staff on issues related to ship manufacturing, construction, management and service, so as to constantly enrich their theoretical knowledge. On the other hand, schools should regularly organize teachers to conduct academic exchanges, case analysis and technical discussion, and invite excellent engineers in the shipbuilding industry to provide teachers with face-to-face teaching suggestions, correct the shortage of teachers, and provide equal learning opportunities for each teacher.

Finally, the assessment and incentive mechanism should be improved. For full-time teachers and double-skilled teachers, schools should adopt hierarchical and personalized assessment methods. On the one hand, this is to ensure that full-time teachers and double-skilled teachers do not relax the strict management of students and put higher requirements on them while completing the teaching tasks. On the other hand, it is conducive to creating a fair and just teaching atmosphere. In this process, as long as the performance is good, put forward reasonable suggestions or made outstanding contributions to the professional construction of ships, then the school should reward and give

tilt in the aspects of job promotion, salary, etc., through the role of example, I believe that other teachers' desire for progress is becoming more and more strong.

(4) Take the construction of practice base as the starting point, and promote the model of combining work with study

In the process of promoting the reform of personnel training mode combining work with study, we should take the construction of practice base as the starting point and pay attention to the deep integration with industries and enterprises. In the talent training program, the "three training" should be fully implemented, namely, vocational quality education, vocational ability training and employment and entrepreneurship guidance. On this basis, the operation mechanism of school-enterprise cooperation should be perfected to achieve the standardization and institutionalization of school-enterprise cooperation. Based on the principle of "joint research, joint development and joint construction", the two sides should establish a stable school-enterprise cooperation mechanism, explore new ways and methods of school-enterprise cooperation, and improve the depth and breadth of school-enterprise cooperation.

Through the joint application of the university and enterprise for the national demonstration vocational college key construction specialty, the national backbone vocational college key construction specialty, the Ministry of Education higher vocational ship teaching Steering Committee and other national key construction projects, school-enterprise co-construction projects and provincial key construction projects, such as vocational education field engineer special training program project, to accelerate the promotion of cooperation with industrial enterprises; According to the requirements of talent training program, establish a course system closely combined with the industry and enterprises, optimize the course content; By hiring industry experts and skilled craftsmen to participate in the teaching, so that the teaching content and production process adapt; Establish ship manufacturing skills training center, ship production simulation training center and ship product research and development center and other on-campus training bases, and establish stable cooperative relations with enterprises; Off-campus training bases such as ship production practice base, Marine equipment manufacturing training base, Marine material production training base, shipyard order training teaching base and off-campus vocational skills appraisal center are established. In order to cultivate more excellent shipbuilding field engineers and promote the combination of work and learning, the school and enterprise can sign a cooperation agreement. The school regularly sends students to the excellent shipbuilding field engineers training base for training and learning every year, so that students can systematically understand and learn cutting-edge engineering technologies related to ships, and further improve their management ability and teamwork ability. To enhance their craftsman spirit and professional quality. Through the establishment of a number of productive teaching and training bases, a teaching and working environment that integrates "teaching, learning and doing" is created, so that students can learn professional knowledge and skills in a real working environment.

Epilogue

To sum up, in order to further improve the employment competitiveness and employment quality of students majoring in shipping in higher vocational colleges, the overall optimization and reform of the major must be carried out according to the teaching characteristics of the major and the actual situation of students. Only in this way, can the students better adapt to the future enterprise working environment and requirements, but also can make the ship major further meet the needs of regional economic development.

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