

Study on the teaching status and countermeasures of ship electronic and electrical major in higher vocational colleges

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Abstract: Today, with the active implementation of the national strategy of “Marine power”, higher vocational education has the responsibility and obligation to improve the quality and level of training of navigation and ship talents. This article to the higher vocational ship electronic and electrical courses teaching status as a starting point, from the increase of professional publicity, improve social recognition; Innovation training mode, accelerate the pace of reform; Do a good job in pre-exam training, improve professional quality; Relying on school-enterprise cooperation, strengthen practical operation ability; Perfect teaching staff and improve teaching quality; To do a good job in quality assessment, to help students employment and other six aspects of higher vocational ship electronic and electrical curriculum reform ideas are explored.

Key words: Higher vocational education; Ship electronic and electrical; Current situation and countermeasures

The course of ship electronic and electrical major in higher vocational colleges is the basis for students to learn the basic knowledge of ship and master the basic theory of ship operation. However, from the perspective of the teaching practice, the teaching effect of the course is not ideal, and there are many problems. If these problems can not be solved in time, it will inevitably affect the implementation of China’s “Marine power” strategy.

I. Analysis of the teaching status of ship electronic and electrical major in higher vocational education

1. Students’ enthusiasm for textual research is not high

With the development of society and the increase of employment channels, the attractiveness of seafaring-related careers is declining year by year, and students’ willingness to work on ships is also decreasing, and their enthusiasm for obtaining certificates is getting smaller and smaller. There are three main reasons for this problem: First, the income gap between seafarers and other jobs on land is getting smaller and smaller; Second, the impact of family, ship jobs often require students to be away from home for a long time, unable to take time off to care for the elderly and children; Third, there are more accidents at sea, such as pirates and robberies and shipwrecks. Students’ personal safety has become one of the most worrying for families and students. Therefore, students’ enthusiasm to participate in the certificate has become lower and lower.

2. There are many exam contents and the passing rate is low

The examination of ship electronic and electrical major certificate requires students to remember the content of ten courses such as theory and practical operation, and the knowledge system of these ten courses is very complicated. For example, the examination of the “ship electrical” theory course requires students to be familiar with and master the basic knowledge of power electronics, frequency conversion speed regulation and frequency converter, steering motor electric drive and control, ship power system, ship power station automation, governor and ship high voltage power station and other courses, which leads to the emergence of low examination forensics rate of students.

In addition, with the society, the family of the nautical professional “not promising”, the quality of vocational navigation professional students is getting worse and worse, students not only can not understand the ship theory knowledge point, but also lack of basic electrical knowledge, coupled with the difficulty of the ship electronic and electrical certificate itself, therefore, some students began to give up the certificate exam.

3. Students ship basic knowledge is not solid enough

The lack of learning of professional courses or the lack of solid basic knowledge of ships will directly affect students’ future employment situation. There are two main reasons for this problem. First, there are two influencing factors: one is the awakening of some students’ personal will, they re-plan their future employment and work field, and no longer need to obtain relevant certificates; the other is the lack of professional degree in the courses provided by the school, which are often dominated by theoretical training courses for seafarers and lack of sufficient practical ability. Therefore, the enthusiasm and initiative of these students are not high, which affects the overall learning atmosphere; The second aspect, the course structure and class arrangement of the ship electronic and electrical major are not scientific enough, such as the course “Electrical and electronic technology” in the ship electronic and electrical technology major. This course mainly involves two aspects of electrical and electronic content, which is not only the core technical course of the ship electronic and electrical major, but also one of the main contents of the certificate examination of relevant seafarers. However, the content of “Electrical and Electronic Technology” is very complex, students have to learn not only the circuit principle, AC circuit and other knowledge, but also learn the basic courses of motor and electronic technology, which is difficult for students to coordinate themselves. Moreover, “Electrical and electronic technology” only 96 class hours, of which 20 class hours should be allocated to practical training courses, and then appear more content and less class contradictions, so that the higher vocational ship electronic and electrical professional “teaching” and “learning” effect is greatly reduced.

II. Higher vocational ship electronic and electrical professional course teaching countermeasures

1. Increase professional publicity and improve social recognition

The true implementation of the national strategy of “maritime power” requires the support of a large number of high-quality and professional shipping talents. However, in terms of the overall social environment at present, the society and families do not have a high degree of recognition for ships and navigation. Therefore, higher vocational colleges need to actively cooperate with the local government, seek government policies and financial support, and increase the publicity of ships and navigation majors, enhance the status of ships and navigation majors in social groups, improve the recognition of ships and navigation careers by society and families, and guide students to establish correct professional ideals and attitudes. Strive for the realization of students’ “nautical dream” and the motherland’s “maritime power”. At the same time, the leadership level of higher vocational schools also need to do a good job of publicity work. For example, for first-year students, regularly invite outstanding graduates and experts of shipping and navigation to the school to give lectures on shipping and shipping careers, so as to deepen students’ cognition of shipping majors and future careers, improve students’ and parents’ recognition of navigation careers, and point out the way for students to realize their correct “navigation dream”.

2. Innovate the training model and accelerate the pace of reform

The establishment and implementation of the new curriculum standard indicates that China’s education undertaking has reached a new level. Higher vocational colleges, as vocational colleges, should actively study the ideas and contents of the new curriculum reform, timely reflect on and reform the existing personnel training mode, and keep up with the pace of education reform. For example, the talent training model with the combination of work and study as the core, that is, based on the real ability and standards of modern ship post talents, the model of school-enterprise cooperation in talent training. First of all, the relevant staff of colleges and universities should go deep into the enterprise, carry out industry research, and understand the current development direction of the shipbuilding industry at home and abroad, and the employment standards of enterprises. Secondly, a new professional development direction should be established by the college ship experts and senior staff of the enterprise together, and the daily standard for the training of ship and navigation professionals should be improved, so as to form the training plan, training model and quality evaluation standard for ship and navigation professionals that meet the needs of enterprises. Finally, students are allowed to practice and study in different vocational positions between enterprises and schools in the course of professional courses, according to the new task goals and requirements. In this way, students can have a close contact with the ship production process, and achieve the purpose of improving students’ professional quality and professional ability.

3. Do a good job in pre-exam training and improve professional quality

Marine electronic and electrical major needs to obtain a number of certificates, and each certificate is difficult to obtain, including a lot of knowledge points. Therefore, it is necessary for professional teachers to assist students to do a good job in knowledge training before the examination, so as to improve the passing rate of students related to the ship electronic and electrical major and improve their professional quality. First of all, the teaching team needs to optimize the course structure or arrangement, try to keep the professional course training work synchronized, and gradually complete the relevant certificate examination. Secondly, the training process needs to be systematic, which can be mainly based on the summary of knowledge points in textbooks, and carried out in the form of special training, example explanation and mock examination as side support. It can not only ensure that students can truly understand the knowledge points, but also improve the overall management of teachers of various professional courses, and arrange the rotating work of teachers of various subjects for self-study at night. Accompany the students to realize the “nautical dream”, and do a good job for the students of the ship electronic and electrical major before the exam.

4. Relying on school-enterprise cooperation, strengthen practical operation ability

At present, higher vocational education has begun to take “employment orientation” as the philosophy of running schools, and embarked on the development road of “production, university and research”. Ship industry, in some areas and the local economic construction is closely related, therefore, higher vocational ship electronic and electrical professional teachers can combine the actual situation, connect the ship industry association, navigation enterprise technical personnel team, and set up the navigation professional steering committee of the school, to establish a “industry-oriented, resource sharing, complementary advantages, mutual benefit and win-win” new talent training mechanism. At the same time, it can also establish the ship electrical technology center, enterprise project studio, ship electrical technology, PLC control training room, ship electronics professional teaching workstation, ship signal system training room, etc. under the joint intervention of the school and enterprise, to form a school-enterprise interaction, interoperability and joint training mechanism. In addition, higher vocational colleges need to purchase and improve the base equipment in time to lay a solid foundation for the reform of the ship electronic and electrical major in higher vocational colleges; In terms of school-enterprise cooperation rules and regulations, the two sides can adopt the way of negotiation to improve the teaching team and talent co-education mode, ensure the quality of college talent delivery, and comprehensively improve the talent strength of enterprises.

5. Perfect the teaching staff and improve teaching quality

In school-enterprise cooperation, a high-quality professional and combined teaching team can greatly improve the depth and effect of school-enterprise cooperation. As the mainstream form of vocational education, the double-qualified teacher team can not only grasp the development direction of the ship major, do a good job in the medium and long term personnel training plan, but also improve the course system of the ship electronics major. First of all, the leaders of colleges and universities can hire well-known people in the industry as the leader of the teaching team; Secondly, they can hire experienced technicians from cooperative enterprises as part-time teachers or practical

teachers to participate in the construction of curriculum standards, systems and school-enterprise cooperation projects for Marine electronics and electrical majors, undertake professional teaching tasks and set up digital teaching resources, strengthen the construction of part-time teachers and professional teachers, and closely cooperate with enterprises. At the same time, colleges and universities regularly select elite teachers to further study in colleges and universities at home and abroad, master advanced vocational education concepts, and promote the teaching reform of ship electronic and electrical majors; In addition, teachers can also be arranged to professional enterprises for exercise, on the one hand to accumulate practical experience, understand the needs of front-line talents, on the other hand can improve the comprehensive practical ability of teachers, improve the level of “double teacher” team.

6. Do a good job in quality assessment to help students find employment

As the last part of the teaching process, the teaching quality monitoring system and teaching evaluation system can effectively guarantee the quality of Marine electronic and electrical courses and help students quickly acquire professional knowledge and practical ability. Therefore, the monitoring and evaluation mode of “college + department + student” can be adopted to realize the effective training and management of higher vocational talents and strengthen the comprehensive professional quality of students.

First, teaching quality evaluation. Students, colleagues, supervisors, experts can be used to four levels of teaching evaluation system. The evaluation contents focus on the preliminary treatment of teaching content, teaching plan design, teaching means innovation, teaching effect feedback and other aspects, so as to achieve the whole process of teaching supervision and evaluation and ensure the teaching effect of Marine electronic and electrical courses.

Second, the evaluation of learning quality. According to the content and requirements of the course of Marine electronic and electrical major, students are regularly assessed before class, during class, after class, by stage, by project and by semester, so as to timely understand the students' learning situation and comprehensively assess their achievements. At the same time, combined with the characteristics of the course of Marine electronic and electrical major, students are evaluated in a variety of assessment methods by written examination, practical operation, online operation and other ways, urging students to constantly improve themselves and develop good learning habits and attitudes.

Third, the overall talent quality evaluation. Relying on the “1+x” certificate system, the overall teaching quality and talent cultivation quality are comprehensively evaluated according to the students' certificate acquisition rate, employment rate, quantity and talent retention rate, and combined with the satisfaction of employers, students and parents, so as to accelerate the reform process of vocational education and help students find employment and start businesses.

III. Concluding Remarks

In short, the ship electronic and electrical profession still plays a very important role in the training of seafarers and crew professionals. Therefore, the staff related to the ship profession need to find and solve the practical problems faced by the ship electronic and electrical profession in time, so as to speed up the reform and development of the navigation profession, train batches of qualified ship talents, and send more high-quality talents for the vigorous development of the national shipping industry.

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