



Research on Teaching Reform and Practice of Marine Fishery Science and Technology Specialty

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Abstract: The Marine Fishery Science and Technology major aims to cultivate compound talents with knowledge in fishery resources and science, fishing gear theory and design, fishery laws and management, engineering fluid mechanics and navigation technology, etc., who are able to work in the marine fishery industry, education, scientific research and management departments that engaged in the sustainable development, conservation and management of fishery resources. Based on the characteristics of the major, combined with the current teaching situation, this article analyzes and discusses the problems in the teaching, and puts forward the teaching reform strategy, hoping to provide some reference opinions for the teaching development of the marine fishery science and technology major.

Keywords: Marine Fishery Science And Technology; Teaching Reform; Practical Research

1. Current status of the marine industry and the Marine Fishery Science and Technology major

The marine fishery is a key industry in my country's marine industry, accounting for more than 50% of the entire marine industry, which has effectively promoted the development of the social economy. For a long time, with the over-exploitation and extraction of marine resources in countries all over the world, the problem of evolving marine pollution disrupts the balance of the ecological environment, which has become increasingly serious. In order to ensure the sustainable development of marine resources, the state pays more and more attention to the cultivation of talents in Marine Fishery Science and Technology. Since the establishment of the Marine Fishery Science and Technology Major (hereinafter referred to as the Marine Fishery Major) by the Ministry of Education of China in 1998, there have been 10 colleges and universities nationwide that have opened this major, including Tianjin Agricultural College^[1,2], Dalian Ocean University^[3,4], Shanghai Ocean University^[5-8], Zhejiang Ocean University^[9], Guangdong Ocean University^[10,11], Ocean University of China^[12], among which 9 colleges and universities set the marine fishery major as the key teaching major. Professional and advanced talents provide a talent basis for the development of marine fishing professions.

Faced with the current severe trend of marine fisheries, there are huge challenges in the development and protection of marine fishery resources, structural adjustment of the fishery industry, and the conversion of fishermen to industries. Institutions of higher learning cannot halt on the theoretical basis of traditional marine fishery teaching. They must fully realize the future prospects and development status of the marine fishery major, aiming to cultivate scientifically innovative talents and realize the sustainable development of the marine industry. In view of this, it is imperative for all colleges and universities to reform the scientific and reasonable teaching system of the marine fishery major.

2. Analysis of the direction of teaching reform of marine fishery majors

Based on the above-mentioned current situation, the training objective of the professional teaching of marine fishery

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should focus on the professional ability and the foresight training of the industry, improve the comprehensive quality of the students, and enable the students to develop in an all-round and coordinated manner in the future. This is also important for China to carry out quality education. In the past, colleges and universities paid too much attention to the cultivation of professional theoretical knowledge in the marine fishery majors, neglecting the cultivation of students' practical ability, which did not meet the industry's future innovation and sustainable development plans. The students' ideological awareness of the major is not enough, which restricts the further development of the marine fish discipline. According to statistics, the employment status of graduates of marine fishery majors in China has been relatively optimistic in recent years. Taking Dalian Ocean University as an example, its marine fishery major has always been the key specialty of the school. According to the "Quality of Employment of Dalian Ocean University 2019 Graduates" The data in the "Annual Report" shows that there are more than 400 undergraduates in this major, and the employment trend has always maintained steady development. The total employment rate of graduates has reached more than 93%, and its graduates are mainly employed in institutions such as the Fishery Bureau and Fishery Station or engaged in fishery administration, ocean fishery work. Some students studying for postgraduate studies or cross-field studies to prepare for other jobs. It can be seen that the employment of graduates of marine fishery majors are very extensive, and the social market economy has an increasingly high demand for talents of marine fishery majors. Therefore, the marine fishery majors should also scientifically broaden their professional calibers. The coverage of the courses and content should be wider, and new teaching and research programs should be explored on the basis of the original teaching. The teaching content should be reasonably enriched for the development of marine fishery professional education to meet market needs, and the teaching direction should be actively adjusted.

3. Analysis of measures for teaching reform of marine fishery majors

3.1 Strengthen the guidance of freshman professional knowledge and stabilize the professional ideology of freshmen

For freshmen majoring in marine fishery, they are facing with relatively new and unfamiliar knowledge. The first year is a crucial period for the construction of professional ideological education for students. During this period, leading students to guide the teaching of majors according to the characteristics of the subject, improving students' understanding of the majors, formulating ideas for the future prospects, and conducting interactive teaching among students in a targeted manner are very important aspects for stabilizing students' professional ideology effectively. Colleges and universities can also join in on-site observation and study, lead students to visit the Fisheries Bureau, Fisheries Station and other places to strengthen the effect of teaching and deepen the students' understanding of the major.

3.2 Improve the professional curriculum system and practical teaching plan, and promote school-enterprise cooperation

Colleges and universities should set the right direction for the training objectives of marine fishery professionals according to the teaching progress, aim at the targeted teaching of the discipline, strengthen the improvement of the curriculum system, encourage students to establish professional research directions based on the learning progress and survey results, and actively participate in relevant scientific research and competitions, such as applying for college innovation and entrepreneurship projects to increase students' opportunities to apply professional expertise and improve their scientific research practice ability. In addition, colleges and universities should actively seek professional counterparts, build a channel for industry-university integration, establish a platform for school-enterprise cooperation, and leverage the port of enterprises in various fields of the marine fishery industry to provide students with multi-level practical opportunities of marine fishery resources testing and evaluation, fishery administration Management, fishery fishing technology, fishery equipment use, fishery product marketing, etc. These practices allow students to gain more knowledge and experience in the marine fishing profession through participation in production practice. The transformation from theoretical teaching to practical teaching will promote the cultivation of marine fishing professionals with more innovative thinking and practical ability, so that students can better adapt to the needs of the

modern marine fishing industry.

3.3 Improve the construction of professional training bases and improve the teaching platform

Colleges and universities should strengthen the scientific research construction of marine fishery majors, invest substantial teaching funds for professional practical teaching, promote the construction of fishery resources exploration and fishing technology training bases, purchase fishery fishing equipment and fishing gear materials, and use on-site physical teaching to allow students to understand the principle and structure of fishery-related equipment, guide students to calibrate the equipment and get started with their career, so that students can complete small-scale practical teaching without going out of school. Under the conditions of school funding, colleges and universities should spare no effort to broaden teaching channels, lease or purchase medium-sized ships and equipment for offshore operations, and lead students to carry out field fishing activities, so that students can experience the sublimation of the subject from the combination of theoretical knowledge to social practice. To increase students' participation and practical skills in the process of teaching practice, students should exercise the adaptability on board, and cultivate their hard-working spirit. Through continuous practice teaching, teachers can find problems in teaching and improve them in time, and students can increase their interest and sense of achievement in the profession, enhance their confidence in the profession, and accumulate more learning experience.

3.4 Strengthen the input of teachers and improve the compilation of teaching materials

At present, China's marine fisheries colleges are gradually increasing. Colleges and universities should strengthen school-school cooperation, organize teacher teams for directional further study, and help teachers improve the teaching of marine fishery courses. In addition, professional training is carried out from time to time, professional talents, enterprise managers, and technical personnel of enterprises and institutions with practical experience are invited to give lectures in the school. Many students are organized to conduct on-site visits and training, which will help students to adapt to the post and speed up their adaptation ability. In addition, colleges and universities should focus on the lack of professional courses for certain textbooks, strive to promote the research and development and compilation of textbooks, set up professional teacher teams, and participate in the compilation of textbooks suitable for their own colleges and universities in accordance with the characteristics of discipline construction to provide support for the perfection of the major.

3.5 According to professional needs, formulate the training plan of counterpart talents

According to the regional characteristics of the development of my country's fishery industry, comprehensively considering the outstanding problems of the industry today, colleges and universities should reasonably formulate a talent training plan to form a three-way win-win situation in which the education is effective students learn well, and enterprises can introduce specialized personnel. No matter in terms of teaching resources or teachers, schools should provide students with high-quality teaching platforms as much as possible, while focusing on cultivating their professional skills and professional ideological awareness and helping them to plan their personal career goals as early as possible. The school should fully understand students' employment intentions, introduce suitable companies into the campus recruitment, create interview opportunities for students, encourage students to compete for excellent companies and positions, sign employment contracts with cooperative units, and therefore, achieve the goal of talents-training. In this way, not only the employment problem of students is minimized, but also the employment needs of the marine fishing industry are met, and the employment rate of the school is also increased.

4. Conclusion

In other words, practice is the only standard for testing truth, especially in the field of professional teaching. Practical teaching will be the most advantageous means of consolidating theoretical knowledge. Colleges and universities should actively respond to the country's demand for educational development, combine the characteristics of the fishery industry, reform the maritime fishery professional teaching program, improve the students' cognitive scope and practical ability, and provide maritime fishery majors for enterprises today when the maritime fishery industry is short of talents Comprehensive talents to promote the sustainable development of the marine fishing industry.

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