Exploration and Construction of Fishery Resources Biology Course
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Keywords: Fishery Resources Biology, Course, Construction.

Abstract. The fishery resources biology course is one of the core parts for marine fishery science and technology major, and is comprised of the theoretical teaching and experimental operating. The course content includes the population characteristics and composition, reproduction and growing, consumption and growth, and so on. In the process of teaching, cultivating interest and inspiring innovation should be paid more attention. Additionally, discussing pedagogy and probing pedagogy are introduced into the class to improve the teaching results.

Introduction
Marine fishery science and technology major is composed of marine fishery and fishery resources and fisheries administration, and is one third of majors in aquaculture and fishery in China [1]. There are four special education sectors; they are fishing technology, fishery resources, fishing ground condition and fishery administration. It is the aim to train interdisciplinary undergraduate with the ability to engage in investigating and assessing for marine fishery, and fishing marine fishery resources, and monitoring and protecting for marine environment, and administrative fishery and so on [2].

Up to now, there are ten universities with marine fishery science and technology in Mainland China [3]; they are Ocean University of China, Shanghai Ocean University, Dalian Ocean University, Zhejiang Ocean University, Guangdong Ocean University, Jimei University, Tianjin Agricultural University, Agricultural University of Hebei Province, Yantai University and Hainan Tropical Ocean University. Although the running school and teaching staff vary from University to University, the teaching and scientific research for exploitation and protection of Fishery Resource, enhancement and stocking, fishery economic, the relation between fish behaviors and surrounding, and fishery management the fishery resources biology and others are always based on the fishery resources biology.

After the sixties of the twentieth century, fishing efforts were increased rapidly and the marine environment was polluted seriously in China Sea, and then many fishery resources have experienced fully exploited, even overfished in the China Sea. With the reduction of the economic fish, the more and more attentions from civilians, researchers and governors were paid to fishery resources in biology. In this paper, the course of fishery resources biology set in Tianjin Agriculture University is as the example to illustrate the aim and importance, course content, teaching skill, construction and reform, problems and deficiencies.

Course Content
The course content of fishery resources biology are not only comprised of the theoretical teaching for population identification, age and growth, feeding habits and stomach content, sexual maturation and fertility [4], migration and distribution, monitoring and investigation, but the experiment operation for measuring morphologic traits, analyzing the data of measurable characters
and countable properties, aging based on the structure of growth ring in scale or otolith, determined
the development phase of gonad, estimating the fecundity, and analysis of stomach content.

Teaching Skill

Teaching the theory and research about population identification, age and growth, sexual
maturation and fertility, feeding habits and stomach content, migration and distribution in the
classroom are complicated and abstracted, so it is very inappropriate to provide the students with
knowledge or information on the course in an oversimplified way, which isn’t good for students to
master the key elements and discourage the interest in learning. In the process of teaching, teaching
skills are improved zealously. Many teaching skills are introduced into the class. There is discussing
pedagogy, probing pedagogy and case pedagogy [5]. Bring out the preset thought-provoking
questions, which inspire the activities of the students, and then the thought of the students is guided.

Now, it has gained great achievements and experiences both in theory and practice. The long
standing phenomenon, paying more attention to the results not the process, has been vanished in the
classroom and the examination, especially in experimental operation. The emphasis on training is to
strengthen the operational abilities and develop the innovation inspirit by means of setting the
opening pathological experiments and innovation experiments.

In the classroom, the students are taken as the main body, teachers as the leadership, the
emphasis is placed on the student's innovative spirits and comprehensive capability [6], the balance
between the teaching and the learning is harmoniously achieved.

Construction and Reform

Course construction and improvement is the core of the teaching work, and are the basic content
of the major, as well as the subject [5]. First of all, in regard to the development of university and
target of talent-cultivating, improving and perfecting the teaching files, there are syllabus, teaching
plan, course book and examination brochure, is the preliminary construction tasks according to the
education disciplinarian. The style, characteristics, and position and role in the curricula is
described in those files, as well as the goal, demand, content, emphasis and difficulty of the course.
Secondly, the teaching content is kept updating on the basis of the textbook and the published
research achievements in the last decade. For example, the eyestalk of mantis shrimp rather than the
scale of fish is taken as the experiments subject to age the growth ring. Thirdly, knowledge is
exchanged to the students in the proper ways, which includes the discussing, probing and case and
so on. Thus the interest and activity of students are stimulated, and the spirit of innovation is trained.
Finally, examine system, which meets the objective of teaching, are scientifically established, and
the grade can reflect the real mastered skill and knowledge of students.

Problems and Deficiencies

Marine fishery science and technology set in Tianjin Agriculture University is only fourteen
years, and then the faculties and instrumentation are not completely qualified, so the mostly new
research results on the fishery resources biology are not introduced into the course. On the other
hands, the students are good at biology, but not math and statistics under the condition of the
current curricula, unfortunately, which is a large obstacle to grasp the content in the classroom for
students.

Summary

Fishery resources biology course is one of the cores of the course system in marine fishery
science and technology, and plays an important role in training the operational capacity, culturing
the innovation spirits and enhancing the major interests of students. Various measures are adopted
to exchange information in the process of teaching and learning on account of the complex and
diverse theoretical and experimental knowledge. And the more updated course content is competent for the thirst of the students for knowledge.

Acknowledgement

This research was financially supported by the Teaching reform project of experimental teaching center of Tianjin Agricultural University (2015SY030).

References


