



## Exploration of ideological and political elements in Animal Biochemistry course of aquaculture

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### Abstract

Animal biochemistry is a compulsory basic course for animal science, animal medicine, animal pharmacy, animal husbandry and veterinary medicine, aquaculture and other majors, laying the foundation for the cultivation of high-quality food professionals. Curriculum ideological and political education is an important way to achieve moral education and cultivate people in higher education. To excavate the ideological and political elements in animal biochemistry and integrate them into daily teaching is a powerful measure to implement the Party's educational policy. In this context, the author analyzed the necessity of the integration of the curriculum and ideological and political education, explored the knowledge points of the integration of animal biochemistry and curriculum ideological and political education, and finally explored the teaching methods of curriculum ideological and political education in order to provide reference for the reform and improvement of the curriculum.

**Keywords:** Animal Biochemistry, Curriculum ideological and political, Teaching exploration

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### 1. Introduction

In 2020, the ministry of education issued the guiding outline of ideological and political construction of the higher education curriculum, which said that ideological and political education is the fundamental way to comprehensively implement moral education and cultivate people. It is the process of integrating ideological and political education into various teaching courses with all kinds of courses as the carrier, realizing ideological and political education as the intrinsic value, making all kinds of courses and ideological and political theory courses go together, and forming a synergistic effect, promote the "ideological and political education of curriculum" oriented classroom teaching reform <sup>[1]</sup>, so that professional education and ideological and political education are organically integrated, and cultivate new people with both ability and integrity for the party and the country.

Animal biochemistry course is a compulsory basic course for animal science, animal medicine, animal pharmacy, animal husbandry and veterinary medicine, aquaculture and other majors, and is a favorable way to achieve professional talents who lead the development of agricultural economy, realize agricultural modernization, and promote rural revitalization <sup>[2]</sup>. How to realize the ideological and political integration of courses and improve the comprehensive quality of students majoring in agricultural sciences is an urgent problem to be solved in teaching. This paper mainly discusses the necessity, integration strategies and teaching methods of the ideological and political teaching of biochemistry course, in order to provide reference for the teaching reform of related disciplines.

### 2. The necessity of integrating ideological and political education with the animal biochemistry curriculum

Based on chemical principles and biological methods, animal biochemistry is a science that studies the chemical composition, molecular structure and function, material metabolism and regulation, and genetic information transmission and regulation of organisms at the molecular level. It is a bridge connecting molecular biology, cytology, microbiology, genetics, physiology and other disciplines.

Through the in-depth exploration of the ideological and political education elements in the animal biochemistry curriculum and the natural integration of the ideological and political elements in the biochemistry curriculum, we can promote contemporary students to establish a correct view of the country, the nation, the world, the outlook on life and values, so as to cultivate more talents with all-round development of morality, intelligence, physique, beauty and labor for society, and cultivate qualified builders and reliable successors for China's aquaculture industry.

In addition, teachers are the main body of teaching and the implementer and executor of curriculum ideological and political education. The key to guarantee the teaching effect of biochemistry "curriculum ideological and political education" is to improve the education awareness and ability of teachers. Building morality and cultivating people is the fundamental task and era mission of higher education, and comprehensively promoting the ideological and political construction of curriculum is a strategic measure to implement the fundamental task of building morality and cultivating people [3]. Only by letting teachers understand the importance of ideological and political education in the curriculum, establishing the awareness of ideological and political education in the curriculum, and clarifying the responsibility of education, can we do a good job in talent training. Under the premise of ideological and political education in the curriculum, through in-depth and extensive exchanges with teachers of ideological and political theory courses and psychology courses, study the spirit of the relevant documents for the guidance of ideological and political construction in the curriculum, excavate and refine the ideological and political elements of the biochemistry curriculum in combination with the professional practice, and constantly improve the theoretical knowledge of the

"curriculum ideological and political education" of animal biochemistry. Actively apply the theoretical research results and contents to the teaching practice of animal biochemistry, so as to achieve the purpose of improving the ability of ideological and political education in the course [4].

Most people solidify their thinking and one-sided understand that agricultural majors are learning farming, learning fish farming, learning to be an animal doctor, learning to use agricultural machinery and other agricultural professional knowledge, and think that agricultural majors are poor in employment and treatment. Therefore, most students will not choose agricultural majors as their first choice when filling in their applications [5]. The teaching content of animal biochemistry course is closely related to "agriculture, rural areas and farmers". Serving "agriculture, rural areas and farmers" needs to focus on talent cultivation, and needs to cultivate the emotion of agricultural students who "know agriculture, love agriculture, and love agriculture".

### 3. Exploration and integration of knowledge points in the integration of ideological and political education in animal biochemistry curriculum

Curriculum ideological and political education is a kind of education and teaching concept, which emphasizes excavate the ideological and political education elements of various courses, infiltrate value guidance into knowledge teaching and ability training, so as to give full play to the educational role of various courses, and implement the fundamental task of moral education. According to the characteristics of the animal biochemistry curriculum and the needs of agricultural majors, the implementation of curriculum ideological and political education can be carried out from multiple dimensions (Tab. 1).

**Table 1:** Exploration of knowledge points in the ideological and political part of animal biochemistry course

Content of Courses	Knowledge points of ideological and political elements	Ideological and political elements and value guidance
Nucleic acid chemistry	Research and development of COVID-19 nucleic acid detection kit	Feelings of family, democracy and self-confidence
Protein chemistry	Artificial synthesis of bovine insulin	Democratic pride
Enzyme chemistry	Induced fit theory	Unity and cooperation
Connection and regulation of material metabolism	The metabolic processes of carbohydrates, lipids, proteins, etc. are interrelated and influence each other	Scientific concept of health

#### 3.1 Patriotism

In the 1920s, Wu Xian, an older generation of biochemists in China, put forward the theory of protein denaturation, which is of great value for studying the advanced structure of protein macromolecules; In the 1960s, Chinese scientists Wang Yinglai and Zou Chenglu synthesized crystalline bovine insulin with biological activity for the first time, marking an important step in the journey of understanding life and exploring the mystery of life; Tu Youyou, the winner of the Nobel Medical Prize, confirmed that artemisinin has the effect of treating and anti-malaria; Chinese scientists' research, development and production of novel coronavirus vaccine and other cases can, to a large extent, cultivate students' cultural self-confidence and patriotism.

#### 3.2 Professional emotion

Set up the consciousness and belief of writing the thesis on the land of the motherland, put the education of strengthening students' ideals and beliefs in the first place, and educate students to establish "great virtue and great ambition". Do a

good job in the professional ideological education of agricultural college students, so that they can deeply understand the "three rural" policies and form the "three rural" feelings. The teaching of animal biochemistry course contains a lot of agriculture-related knowledge: biological breeding, genetic engineering, pest prevention and control and other knowledge points to stimulate students' feelings for this major, their love and interest in agriculture.

#### 3.3 Scientific literacy

The inherent requirement of scientific development is the scientific spirit, which includes the spirit of seeking truth and pragmatism, critical thinking, independence and cooperation. For example, in the chapter on nucleic acid, we feel that the discovery of the DNA double helix structure by scientists Watson and Crick has been accompanied by the scientific spirit. Pruser discovered prions, put forward the theory of non-nucleic acid infection source, and Xu Xiaodong's team discovered prions in viruses. These historical discoveries reflect the scientific attitude and the spirit of scientists

seeking truth from facts and critical thinking. It plays an important role in improving students' scientific literacy, cultivating students' ability to find, analyze and solve problems, and cultivating students' scientific thinking spirit.

### 3.4 Healthy lifestyle

With the development of social economy and the continuous improvement of living standards, the dietary structure and lifestyle of the population have also changed, which has brought new health and public problems such as nutritional diseases. The knowledge points of biochemistry course content are closely related to human life. In teaching, we should advocate a healthy lifestyle, take life phenomenon as the topic, and lead out the teaching content and knowledge points. For example, in the chapter of fat metabolism, the life phenomenon of "fatty liver" leads to the synthesis and decomposition of fat. If the balance between the two is broken in the body, it will lead to the disorder of fat metabolism, and then produce "belly fat", such as a large amount of subcutaneous fat accumulation, which will induce "fatty liver" in serious cases. In addition, in the chapter of sugar metabolism, take diabetes as an example to explain the classification of sugar and the way of sugar metabolism, so as to improve students' understanding of healthy life.

### 4 Exploration of the teaching method of biochemistry "curriculum ideological and political"

In order to ensure the orderly development and implementation of the curriculum, ideological and political education, and implement the role of animal biochemistry curriculum in cultivating talents. A variety of teaching methods (case teaching, discussion teaching and special reports, etc.) can be adopted to carry out ideological and political teaching of the course.

#### 4.1 Case teaching

When teaching the chapter on connection and regulation of material metabolism, we should use the phenomenon that eating too much carbohydrate for a long time in life will lead to obesity, stimulate students' interest in learning, and then ask the question, why eating too much carbohydrate will lead to obesity? Guide students to study purposefully with this question. After learning this chapter, answer the questions with the knowledge they have learned, and further consolidate and master the knowledge points they have learned.

#### 4.2 Discussion teaching

In the chapter on enzyme chemistry, the reasons for "broad bean disease" were discussed, and the factors that might affect the enzyme activity were discussed; The chapter on the relationship between the structure and function of hemoglobin takes the "sickle cell anemia" as an opportunity to introduce the relationship between the structure and function of protein, discuss the factors and conditions that may affect the function of protein, and make students pay attention to the storage of theoretical knowledge and the scientific literacy of explaining practical problems with theoretical knowledge.

#### 4.3 Special report on teaching

When teaching the chapter of lipid metabolism, the special report content should be prepared before class, such as discussing the discovery, classification, function, metabolic

site and metabolic pathway of lipid substances from the perspective of nutrition, report in group form, let students independently check and sort out materials, carry out small special lectures in class, enhance students' understanding of professional knowledge, and cultivate students' awareness of exploration and innovation.

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