

## **TYOLOGICAL FEATURES OF COMBINING BIOLOGY AND GENETICS BASED ON AN INTEGRATIVE APPROACH**

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Several directions are being formed in the development of modern biological science. The study of the phenomenon of life from the molecule to the cosmic and mega levels. The sphere of objects of biological study includes the formations of organisms (population-species, biogeocenotic, biosphere, anthropobiogeocenotic) and their interactions.

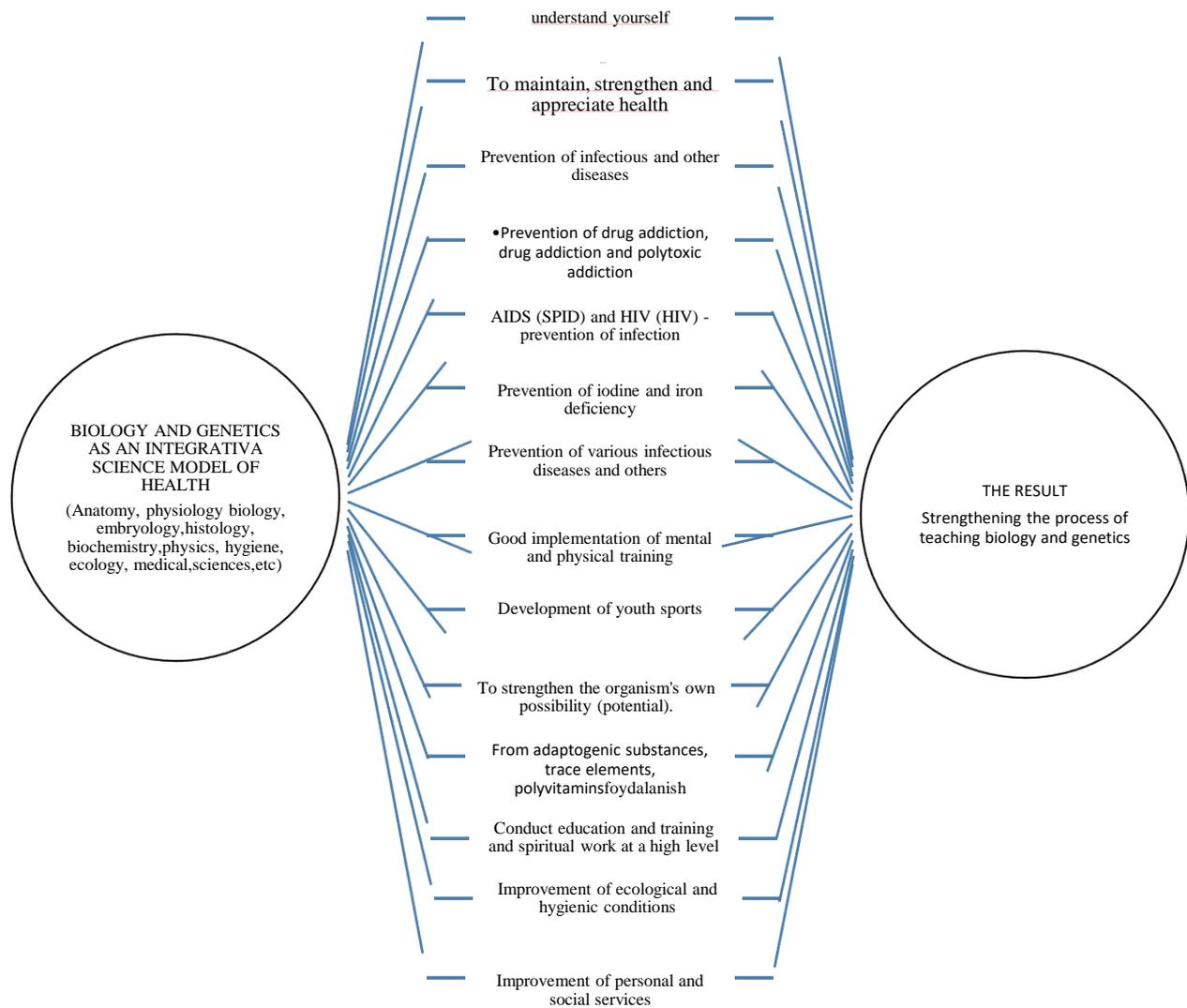
There is an increase in the integration of biological sciences with each other and with other sciences. Due to biology and genetic research, there is an expansion of ideas about the ontogenetic formation and development of species at the population level. Due to the activation of genetic engineering (gene, chromosome, cell engineering) research, in the second half of the 20th century, biology moved to the second stage of its development - bioengineering. Due to the increasing connection between biological science and social practice, biology is not only a science that studies the environment, but it is becoming a science that can strongly influence the environment. Trends in the design, construction and creation of new bioobjects (recombinant DNA molecules, genetically modified viruses, synthetic food products) are developing.

Cenosis engineering. Today, works are being carried out on the construction and creation of artificial bio- and agrocenoses.

Greening of production practices. The complex of biological sciences does not become a strong productive force of society only through the development of biotechnology, but problems such as changing the existing conditions of production and rational use of nature, restoration of natural resources are relevant today, because biology and ecology are forming an integral part of society and spiritual culture.

In the 60s of the last century, the discovery of the process of digestion in the small intestine membrane by Academician A. Ugolev was also reflected in our Republic. The school of digestive physiology (Fig. 1) was founded in our republic by the honored scientist of Uzbekistan, Professor Rakhimov Karim Rakhimovich. The scientist found that the characteristics of the digestive process in the small intestine membrane change depending on age in the conditions of Uzbekistan. During ontogenesis, the importance of external environmental factors (temperature, hypokinesis, hyponutrition) in the hydrolysis and absorption of nutrients was studied, and their functional mechanisms were elucidated.





**Figure 1. Model of the formation of biology and genetics as an integrative science**

We present other well-known definitions of the ecology branch of biology, which reveal different approaches to the study of possible subjects of this science (Table 1).

Table 1

Other known definitions of ecology

No	Researchers	Feedback from researchers
1		Ecology is a science that studies the living conditions of living organisms and the interactions between organisms and the environment in which they live
2		Ecology is a science that studies populations and takes a quantitative approach to the study of natural phenomena.
3		ecology is a science about the structure of nature, characterized by an energetic approach to the study of natural phenomena
4		Ecology is the science of how individuals and populations respond to environmental changes
5		Ecology deals with the aspect that determines the development, reproduction and survival of organisms, the structure and change of the populations they form, and finally the structure and change of various types of associations.



6	modern ecology is the science of the ways in which populations of species adapt to the changing conditions of the external environment, the formation, transformation and development of populations of species, [135, 136] higher-level biological organisms specially adapted to the most efficient use of energy in their specific environmental conditions the science of the laws of integration with systems
7	(interpretation of the definition of Y. Odum [115]) ecology is a field of knowledge that studies the interaction of organisms and their associations with the environment (including with other organisms and associations)
8	(interpretation of the definition of Y. Odum [115]) ecology is a field of knowledge that studies the interaction of organisms and their associations with the environment (including with other organisms and associations)

The main difference between human ecology and social ecology is that the first sees man more as a biological system, and the second perceives it as a social-biological or only social system.

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