

DOI [https://doi.org/10.58442/2218-7650-2023-25\(54\)-198-209](https://doi.org/10.58442/2218-7650-2023-25(54)-198-209)
UDC 372.857

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FORMATION OF STUDENTS' SKILLS RELATED TO ENVIRONMENTAL PROTECTION

Abstract. All subjects taught in secondary schools, as well as the content of the biology subject, are directly aimed at the formation of life skills and habits. From this point of view Biology has more advantages. The skills acquired in Biology allow students to provide first aid, take care of their own health and those around them, lead a healthy lifestyle, behave with the surrounding creatures, feed pets, plant and cultivate plants, act in the direction of protecting the ecological balance by knowing the effect of environmental factors on living things and, in general, it has a vital importance in solving a number of problems encountered in life. The role of the teacher's factor along with the school's material and technical base and infrastructure is undeniable in the formation of these skills. Taking into account one of the contents of biology which is related to environmental protection, we consider it important to examine the level of formation of skills related to environmental protection in our students. Our students should understand that the fate of humanity depends on solving environmental problems. Imbalance in nature is dangerous not only for the surrounding creatures, but also for the humans as well. From this point of view, it is one of the main tasks of biology and biology teachers to teach student to have the right approach to the environmental situations, not to be indifferent to the nature of Azerbaijan and the protection of its biological diversity, as well as to participate in the prevention of environmental imbalance and the plundering of our natural resources. The article has studied the following issues: the possibilities of the biology curriculum with a systematic approach to the problem; the skills formed in students; the possibilities of schools in terms of the formation of these skills; the educators' approach to the problem. And the importance of coordinating theory and practice for the

systematic development of life skills has been emphasized.

Key words: life skills; protection of ecological balance; civic responsibility; textbook; ecological situation; biology curriculum; practical lesson; material and technical base.

INTRODUCTION / ВСТУП

Formulation of the problem. History shows that both the economic and cultural progress of the states led by heads of state who give importance to science and education is ensured. From this point of view, it is undeniable that Great Leader Heydar Aliyev paid great attention and care to the development of our national education during the period when he was leading the Azerbaijan SSR as well as independent Azerbaijan. The historical stage that began in 1969, when he came to power, is perceived as the development period of today's Azerbaijani science. Reforms were carried out in the education system, as in all fields, during the separate years of his authority, including after the Republic of Azerbaijan gained independence. The reform program signed by the Great Leader in 1999 was implemented in 7 directions.

Many steps have been taken and are being taken in the direction of raising the level of education. The national leader said; "The purpose of our education is to educate the young generation, children and prepare them for the future. Every person should be a citizen as well. Must be a citizen. A citizen who is loyal to his state, his nation, his traditions, and his people". His views put forward the improvement of the education system as an important task.

The main goal and the main strategic line in the education system of the young generation is the maximum development of the natural capabilities of the personality in modern age. General education plays an important role in the realization of this goal. In the document called "State Standards of the General Education Level" it is mentioned that "the content of general education takes into account the age, physiological and psychological characteristics of the students, the formation of their outlook and personality, the acquisition of necessary knowledge and skills in accordance with the requirements of market relations, mental, physical, spiritual, aesthetic development, and ensures their preparation for independent work and educational life, turning into a useful and productive member of society".

Among the subjects taught at the general education level in this field, the content of the biology subject is of special importance. In modern times, human health and healthy lifestyle are considered one of the most important issues in the whole world. Thus, in modern times, inactivity, improper nutrition,

addiction to harmful habits, increasing diseases in the world and in our country, environmental problems, risk factors, etc. has become the most important problems of the era. Therefore, the World Health Organization celebrates April 7 as World Health Day. It was founded in 1948, and the problems that cause concern today and their elimination are in the center of attention. In this regard, the formation of life skills in children and adolescents is of great importance. The presence of the "Human and its health" content line in the curriculum of biology is the first step towards students' acquisition of these competencies.

The formation of competencies for the protection of human health can be successfully implemented by competent teachers. Increasing the reputation of the teaching profession, forming a competent educator who applies innovative training methods and ensures effective mastering of the content of education is one of the strategic directions of the "State Strategy for the Development of Education in the Republic of Azerbaijan" approved by the decree of the President of the Republic of Azerbaijan I. Aliyev dated October 24, 2013 .

Analysis of major research and publications. The Biology textbook for 6th grade students which was written by Y. Seyidli, K. Ahmadbeyli and N. Aliyeva [5], teaches students how to protect the living things, to follow the rules of caring for living things, gives information about the plant and animal species unique to the nature of Azerbaijan. The topics such as "Azerbaijan reserves", "The nature of our country", "Role of cultivated plants in human life", "Animal domestication and its role in human life" are included in the textbook as well.

In the textbook compiled by the same team of authors for the 7th grade, the knowledge and skills listed above have been further improved, taking into account the age characteristics corresponding to the requirements of the biology curriculum. The content of this textbook include the topics such as "Medicinal plants of the land you live in", "Fish diversity", "Protection of fish resources", "Diversity of amphibians and their role in nature", "Diversity and importance of reptiles", "Protection of biodiversity, rare and endangered local fauna" which aims at the formation of students' knowledge and skills related to physical and chemical changes in nature, the effects of these changes on living things, the protection of living things in local conditions and the ways of protecting the flora and fauna of the Republic.

The 8th grade biology textbook co-authored by N. Mammadova, B. Hasanova, K. Mahmudova, and L. Fataliyeva [7] includes topics such as "Let's protect the environment", "Environment and organism" which aim at forming

knowledge and skillst about water, soil, air pollution, ways to prevent pollution, measures taken by state structures in this direction.

In the textbook "Biology 9" co-authored by Y. Seyidli, X. Ahmadbeyli, and N. Aliyeva [6], more space is given to the issues of environmental protection. So, in order to realize the requirements of the content standards, 2 chapters have been included in the content of this manual. One of these chapters is "Animals and the Environment" and the other is "Effects of the Environment on Human Health". In these sections, environmental factors, the intensity of its impact on the body, the arrangement of plants in layers, biological rhythms, water pollution by petroleum products, phenols, synthetic surfactants, heavy metals, protection of species diversity, creation of waste-free technologies, ecological standards, the measures taken for the rare and endangered species in the Republic of Azerbaijan are included.

AIM AND TASKS / МЕТА ТА ЗАВДАННЯ

The **purpose** of the research is to determine and substantiate the theoretical and practical foundations of the formation of life skills in biology classes of VI–XI classes.

Ensuring a systematic approach to the formation of vital skills in the content of the subject of biology, in the training process, and strengthening methodical work in that direction will create a wide opportunity for the formation of these competencies in students.

Tasks of the study:

- to analyze the relevant scientific-theoretical, pedagogical and teaching-methodical literature related to the problem, to examine the available opportunities;
- to study the school experience in terms of the problem under study;
- to determine the methods and tools used by teachers for the purpose of forming life skills;
- to identify typical difficulties in the implementation of this work and their causes.
- to work on the theoretical and practical bases of the formation of vital skills in teaching biology
- to determine the content and strategy that will allow to form life skills through teaching biology in grades VI-IX, to achieve a more intensive improvement in their overall development;
- prepare a system of work related to the problem, show optimal solutions;

- to confirm the impact of the developed system on the development of students' life skills through experiments;
- to determine the impact of research on the problem on increasing the professionalism of biology teachers as a whole, and at the same time on improving student achievement.

THE THEORETICAL BACKGROUNDS / ТЕОРЕТИЧНІ ОСНОВИ ДОСЛІДЖЕННЯ

Education is a strategic field that determines the development of society. There are different sayings about education. In the 12th century, the prominent poet of Azerbaijan Nizami Ganjavi said: "Power is in science", and in the 21st century, a great Leader Heydar Aliyev said: "Education is the future of the nation". And the goal of both words is Education.

Both during the leadership of the Azerbaijan SSR and during the leadership of the independent Azerbaijan, Heydar Aliyev gave high value to science and education along with all other fields in the country. During his authority the great leader Heydar Aliyev approved the "Educational Reform Program of the Republic of Azerbaijan" with the Order dated June 15, 1999, and the reform was carried out in various directions of education. The purpose of the reform is to maintain and develop the potential gathered at the educational levels, to create the appropriate normative and legal framework regulating the education system, to implement the requirements established in the Constitution of the Republic of Azerbaijan, the Education Law, and to implement the state policy based on the democratization of political, economic and social life. Reforms in the education system were carried out in seven directions (the structure of the education system, content of training and upbringing, personnel training and provision, information, teaching and scientific-methodical support of the education system, management of the education system, material and technical base of the education system, economy of education). In particular, I would like to approach the issues related to the content of education and training, staff training and provision from the perspective of the content and teaching of the subject of biology.

Currently, biology which is being taught in general education institutions is implemented on the basis of the "Biology subject program (curriculum)" prepared by the working group on the subject of biology approved by the order of the Minister of Education at the Institute of Education (formerly the Institute of Educational Problems). The prepared document was submitted to a wide public discussion in January 2010, and was approved by the Cabinet of

Ministers after appropriate changes.

One of the features that distinguishes the updated content of the subject of biology from the previous one is that the new content is not related to the areas of biology, but to the separate classes according to the necessary parts. That is, in the previous years the students studied botany which is about plants, and zoology which is about animals in the 6th grade. According to the new content, the students learn about these and other living things, biological processes, the role of living things in human life, environmental problems, etc. from the 6th to 11th grade according to their age.

Another different aspect is that the content of the biology subject is student-oriented, personality-oriented, and result-oriented. If we look through the content, we will see that all the activities here are aimed at the student. The student follows the rules of plant and animal care, differentiates and groups medicinal plants, interprets his judgments about the diversity of living things, prepares presentations on regional and global environmental problems, interprets the role of various living things in human health, etc.

Of course, the new content reveals the factor of a modern-minded, innovative, creative teacher. In addition to understanding the purpose of the reform, teachers should understand the difference between the previous and new content, and should form skills related to modern requirements.

The 21st century is the age of information. It is obvious that students encounter new information every day. For this reason, modern biology teacher should follow the demands of the labor market, the innovations in the field of science, and at the same time to use various resources in the teaching process. A modern teacher should understand that the textbook used in the class is a tool, and this tool is not enough in terms of building a lesson and forming any knowledge and skills in a student. The demand of the 21st century is to prepare the students for life using the knowledge given in various subjects and the skills formed as a result of acquiring this knowledge.

If we look through the content of the biology subject, we will see that the knowledge and skills provided here are of special vital importance. Although some of the points in the content have been listed above, I came to the conclusion to conduct extensive research in this field, focusing specifically on the issue of environmental protection, which is of global importance today.

I started the research first with normative legal documents. The document "State standards of general education in the Republic of Azerbaijan" approved by resolution No. 361 of the Cabinet of Ministers of the Republic of Azerbaijan dated September 29, 2020 contains various directions related to

general education, as well as general training results for individual subjects. The training results for the subject biology were reflected as follows:

At the level of general secondary education – gives ideas about the ways of protecting the environment and health, puts forward considerations;

At the level of full secondary education – makes considerations about ways to solve environmental problems and protect health;

The research mainly covered VI–IX classes of general education schools. For this reason, first of all, the capabilities of the currently used Biology subject program related to environmental protection in those classes have been involved in the analysis. The content standards expressing the knowledge and skills to be formed in the 6th-9th grades of the general secondary education level are grouped in the table below.

Table

| Class VI | ClassVII | Class VIII | Class IX |
|--|--|--|--|
| 4.1.1. Explains the relationship of living things with the environment and with each other | 4.1.1. Explains the effect of physical and chemical changes occurring in nature on living beings | 4.1.1. Explains the environmental factors and their effect on the human body | 4.1.1. Interprets the role of environmental factors in the life of living things, prepares presentations |
| 4.2.1. Presents the information about the protection of animals | 4.2.1. Interprets the judgments based on observations on the protection of living things in local conditions | 4.2.1. Explains his considerations on environmental pollution and protection | 4.2.1. Summarizes observations on regional environmental problems and prepares presentations |
| 4.2.2. Follows the rules of plant and animal care | 4.2.2. Distinguishes the ways of protection of flora and fauna of the republic | 4.2.2. Prepares a presentation on the environment and its protection | 4.2.2. Collects facts and prepares presentations about the protection of species diversity of the living world in Azerbaijan |

When we look at the content standards, we see that the content becomes more complicated in upper grades according to the students' age. Development is noticeable both in terms of knowledge and performance.

However, the correctness and comprehensiveness of the issues raised in the content is the first of the steps taken to obtain the desired result. One of the main factors is the knowledge and skills in content line and their accordance with the student book and how teacher prepares the students to achieve the result.

Environment, its pollution, sources of pollution, prevention of pollution, measures taken in this direction in the world and in our republic, civil responsibility, etc. and the formation of skills is derived from the content of the biology subject program and covers all classes.

The science of Biology is constantly enriched with innovations and scientific information. These scientific achievements are used by authors in the preparation of biology textbooks, and by teachers in the process of teaching biology. Thanks to the knowledge and skills obtained as a result of the development of modern pedagogy, the teacher's methodology is enriched. Of course, it requires experience. Because the teacher cannot achieve results without practice. Therefore, no matter how many modern textbooks and methodical materials for teachers are prepared, and training courses are organized for the improvement of teachers, it will be difficult to transform the theoretical knowledge acquired by students into skills and habits unless teachers bring these innovations to the classroom.

In order to organize biology classes in a desirable way, theoretical and practical skills should be formed in parallel, for this purpose laboratory work, practical assignments, and excursions should be preferred.

RESEARCH METHODS / МЕТОДИ ДОСЛІДЖЕННЯ

Research methods: theoretical analysis, pedagogical observation, pedagogical interview, study of documents, pedagogical experiment, mathematical and statistical methods.

The investigation of the problem started in 2019. An experiment was organized in 3 stages in order to confirm the correctness of the hypotheses, the efficiency of research and the expected training results.

1) the determining stage – covered the years 2019–2020. Surveys related to the problem were organized in the schools involved in the research, teachers' lessons were listened to, the initial situation was evaluated, successes and achievements were analyzed, and the mistakes and their objective and

subjective reasons were revealed;

2) the educational stage covered the years 2020–2021. At this stage, the teachers were introduced with the methodical instructions which were proposed by us. They were provided with the prepared resources to achieve the goal, a suitable methodology was developed and implemented based on this methodology;

3) at the last stage of the experiment, in accordance with the requirements of the new methodical system, scientific-methodical ideas related to the formation of life skills through the teaching of biology were selected, the training materials were tested in the experiment in secondary schools of Baku.

It can be effective to use the results of the research in the improvement of teaching the methodology of biology, improving the biology textbook sets and the content and strategy of the subject curriculum, in the preparation of textbooks, teaching aids and distribution materials, and in the improvement of teacher training programs. The results of the study are also very useful for teachers who practice biology.

RESULTS OF THE RESEARCH / РЕЗУЛЬТАТИ ДОСЛІДЖЕННЯ

Results of the research work:

1. The study of general issues related to the problem will enable the detection and elimination of a number of deficiencies in the direction of the teaching methodology of biology.

2. The reflection of knowledge and skills related to the formation of vital skills in teacher training programs will create conditions for modern teachers to do their work correctly.

3. If the knowledge and skills provided in the content are fully reflected in the textbooks, and the ways of forming these skills are fully reflected in the materials for the teacher, it will create an opportunity to form vital skills in students.

4. The content that serves the formation of vital skills, the new strategy offered to the teacher, the reconciliation of the ways of checking student achievements with the content will serve to improve the learning results of students, and the formation of practical knowledge and skills.

In order to develop the environmental protection skills of students in a comprehensive and efficient way in the teaching process, there is a need to give more priority to practical lessons.

CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH / ВИСНОВКИ ТА ПЕРСПЕКТИВИ ПОДАЛЬШИХ ДОСЛІДЖЕНЬ

The study shows that there is enough information about the issues of environmental pollution and prevention of pollution in the teaching materials, but there is a need to involve students in research and projects in this direction, to stimulate their activities by using the results of the students' research at the school level, and thus to create an opportunity for them to participate in environmental protection.

Prospects for further research in this direction. Creating a system of work on the formation of life skills will help to enrich the pedagogical theory with new ideas and provisions.

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ФОРМУВАННЯ ВМІНЬ СТУДЕНТІВ, ПОВ'ЯЗАНИХ З ОХОРОНОЮ НАВКОЛИШНЬОГО СЕРЕДОВИЩА

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Анотація. У статті досліджено питання можливості навчальної програми з біології під час системного підходу до проблеми; сформовано в учнів уміння та навички навчальної програми з біології; можливості шкіл щодо формування цих навичок; підхід педагогів до проблеми. Підкреслено важливість узгодження теорії та практики для систематичного розвитку життєвих навичок. Усі предмети, що викладаються у загальноосвітніх школах, як і зміст предмета біології, безпосередньо спрямовані на формування життєвих навичок. З цього погляду біологія має більше переваг. Отримані навички з біології дозволяють учням надавати першу медичну допомогу, піклуватися про своє здоров'я та здоров'я оточуючих, вести здоровий спосіб життя, поводитися з оточуючими тваринами, годувати їх, садити та вирощувати рослини, діяти в напрямі захисту навколишнього середовища, балансу, знаючи вплив факторів навколишнього середовища на живі істоти, і, загалом, має життєво важливе значення у вирішенні ряду проблем, що виникають у житті. У формуванні цих навичок незаперечною є роль фактора вчителя, матеріально-технічної бази та інфраструктури школи. Враховуючи один із змістів біології, який пов'язаний з охороною навколишнього середовища, ми вважаємо важливим перевірити рівень сформованості навичок, пов'язаних з охороною навколишнього середовища у наших студентів. Наші учні мають розуміти, що від вирішення екологічних проблем залежить доля людства. Порушення рівноваги в природі небезпечно не тільки для оточуючих істот, а й для людини. З цієї точки зору, одним з головних завдань біології та вчителів біології є навчити учнів правильно ставитися до екологічних ситуацій, не бути байдужим до природи Азербайджану та захисту його біологічного різноманіття, а також брати участь у запобіганні екологічному дисбалансу та

розкраданню природних ресурсів.

Ключові слова: життєві навички; захист екологічної рівноваги; громадянська відповідальність; підручник; екологічна ситуація; навчальна програма з біології; практичне заняття; матеріально-технічна база.

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*Стаття надійшла до редакції
12 червня 2023 року*