

ПЕДАГОГИКА ЖӘНЕ ПӘНДІ ОҚЫТУ ӘДІСТЕМЕСІ

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(Kazakhstan, Almaty), e-mail: almira_geo@mail.ruADAPTATION OF THE ENVIRONMENTAL EDUCATION SYSTEM FOR
SUSTAINABLE DEVELOPMENT

Abstract. This article discusses the possibilities of adapting youth environmental education to all its levels, disseminating environmental knowledge, and forming practical environmental protection skills that are timely in the context of the prevailing consumer behavior of mankind. The purpose of the study is to identify the main conditions for forming ecological culture and education as an integrated approach, to strengthen the continuity and continuity of educational programs within the framework of the practical implementation of environmental strategies adopted in Kazakhstan.

Using the data of the analytical report on the results of the study of the awareness of the population of the Republic of Kazakhstan on climate change, presented by UNDP in 2022, the level of knowledge, behavior, and practical experience of the population on the most important issues of Environmental Protection were determined and evaluated. The study results also became a criterion for assessing the effectiveness of programs aimed at increasing environmental education and reforming the environmental education system in the interests of sustainable development. The study allowed the people of Kazakhstan to identify the current situation with the environment in the context of environmental education and develop adaptive measures to increase the level of environmental culture and education of the younger generation. Also, to implement the goals and objectives of “green” universities, the possibilities of adapting the experience of foreign “leaders” universities to the undergraduate programs of Narxoz University in the direction of “Environment and sustainable development” were studied.

Keywords: environmental literacy, sustainable development, climate change, environmental culture, environmental education, environmental components, «green» universities.

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Тұрақты даму мүддесі үшін экологиялық білім беру жүйесін бейімдеу

Андатпа. Мақалада жастардың экологиялық білімін оның барлық деңгейіне бейімдеу, экологиялық білімді тарату және адамзаттың қалыптасқан тұтынушылық мінез-құлқы жағдайында уақтылы болып табылатын қоршаған ортаны қорғаудың практикалық дағдыларын қалыптастыру мүмкіндіктері қарастырылған. Зерттеудің мақсаты – экологиялық мәдениет пен білім беруді кешенді тәсіл ретінде қалыптастырудың негізгі шарттарын айқындау, Қазақстанда қабылданған экологиялық стратегияларды практикалық іске асыру шеңберінде білім беру бағдарламаларының сабақтастығы мен үздіксіздігін нығайту.

БҰҰДБ 2022 жылы ұсынған Қазақстан Республикасы халқының климаттың өзгеруі туралы хабардарлығын зерттеу нәтижелері туралы талдамалық есептің деректерін пайдалана отырып, халықтың қоршаған ортаны қорғаудың маңызды мәселелері бойынша халықтың білім деңгейі, мінез-құлқы және практикалық тәжірибесі айқындалды және бағаланды. Зерттеу нәтижелері сонымен қатар экологиялық білім беруді арттыруға және тұрақты даму мүддесі үшін экологиялық білім беру жүйесін реформалауға бағытталған бағдарламалардың тиімділігін бағалау критерийі болды. Зерттеу Қазақстан халқына экологиялық білім беру контекстінде қоршаған ортаға қатысты қалыптасқан жағдайды анықтауға және жас ұрпақтың экологиялық мәдениеті мен білім деңгейін арттырудың бейімделу шараларын әзірлеуге мүмкіндік берді. Сондай-ақ, «жасыл» университеттердің мақсаттары мен міндеттерін іске асыру үшін шетелдік «көшбасшылар» университеттерінің тәжірибесін «қоршаған орта және тұрақты даму» бағыты бойынша Нархоз университетінің бакалавриат бағдарламаларына бейімдеу мүмкіндіктері зерделенді.

Кілт сөздер: экологиялық сауаттылық, тұрақты даму, климаттың өзгеруі, экологиялық мәдениет, экологиялық білім, экологиялық компоненттер, «жасыл» университеттер.

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Адаптация системы экологического просвещения в интересах устойчивого развития

Аннотация. В статье рассматриваются возможности адаптации экологического образования молодежи на всех его уровнях, распространения экологических знаний и формирования практических навыков по защите окружающей среды, которые являются своевременными в условиях создавшегося потребительского поведения человечества. Цель исследования – определить главные условия формирования экологической культуры и образования как комплексного подхода, укрепить преемственность и неразрывность образовательных программ в рамках практической реализации экологических стратегий, принятых в Казахстане.

Используя данные аналитического отчета о результатах исследования осведомленности населения Республики Казахстан об изменении климата, представленного ПРООН в 2022 году, определены и оценены уровень знания, поведение и практический опыт населения по

важным вопросам охраны окружающей среды. Результаты исследования послужили также критерием оценки эффективности программ, направленных на повышение экологической образованности и реформирование системы экологического просвещения в интересах устойчивого развития. Исследование позволило выявить ситуацию, сложившуюся в отношении окружающей среды в контексте экологического образования населения Казахстана и разработать адаптивные меры повышения уровня экологической культуры и образованности молодого поколения. А также для реализации целей и задач «зеленых» университетов изучены возможности адаптации опыта зарубежных университетов-«лидеров» к программам бакалавриата университета Нархоз по направлению «Окружающая среда и устойчивое развитие».

Ключевые слова: экологическая грамотность, устойчивое развитие, изменение климата, экологическая культура, экологическое просвещение, экологические компоненты, «зеленые» университеты.

Introduction

The dynamic economic development of modern society and the growth of consumption have led to a violation of the natural balance of the ecological system and caused irreversible damage to the environment, creating an "ecological footprint". Humanity is faced with a choice: to regulate the growing needs, taking into account the ability of the ecosystem to meet them, or to allow everything to continue without interference with global, irreparable consequences [1,2].

The main challenges facing the younger generation are climate change and environmental problems [3]. Many researchers [4] note, as an important factor, that currently the study of natural sciences forms the basis for students to understand the relationship between the constituent elements and the importance of the relations that develop between society, the natural environment and human activity. Environmental literacy of the population can be expressed as a continuous process of cognition and study of the surrounding world and the natural environment. It is important to apply interdisciplinarity here, which is aimed at a conscious human attitude to the environment. Education in the field of ecology contributes to the formation of a responsible understanding and attitude among young people towards the problems of a sustainable human lifestyle and the preservation of the planet for the next generation.

People are beginning to realize the importance of protecting our planet through the coverage of climate change issues in the media. The desire to interact with nature is another contributing factor. Researchers [5, 6] conducted research to improve the effectiveness of this education and found that these activities contribute to its development and argue that interdisciplinary methods are necessary for the formation of the above-listed components of ecological culture. In our opinion, interdisciplinary methods are used to form the listed components of ecological culture. The main tasks of the university include providing students with the necessary conditions for obtaining practical skills and environmental knowledge, as noted by foreign scientists, as well as contributing to the sustainable development of society, students themselves and their loved ones [7, 8]. Practical skills that are necessary for Students' learning should not be limited to anything, a comprehensive interdisciplinary approach and research of wide areas of knowledge and disciplines are needed [9]. In order to achieve the set Goals of sustainable development in the field of environmental education, culture and education, it is necessary to prevent irreversible processes of environmental degradation and find more effective measures to mitigate the consequences through the adaptation of the environmental education system without territorial borders, that is, globally.

Educational institutions form a careful rational attitude towards nature among the students and contribute to their becoming environmentally literate and responsible individuals through knowledge and environmental behavior.

In this regard, at the initiative of a foreign university, an International environmental rating is conducted annually in order to promote the implementation of sustainable development goals in the world. This rating shows the activity of the university, its commitment to creating an environmentally friendly infrastructure. The criteria for evaluating the environmental performance of universities are energy conservation measures, waste management, water conservation, logistics, scientific projects and campus infrastructure.

The universities participating in the Green Metric rating are engaged in scientific research. Which contribute to sustainable development around the world and thereby adapt the policy of higher education in the direction of greening the educational process. Today, environmental education is the basis for creating an ecological culture on a global scale by teaching the population environmental literacy, behavior and practical actions to solve modern environmental challenges and prevent a global environmental catastrophe [10].

Educational institutions need to adapt and create all conditions for the formation of environmental behavior skills, attitudes and environmental knowledge among young people and the younger generation, as well as teachers and parents of students.

The main regulatory tool in matters of environmental protection and solving environmental problems can also be called ecological culture. An appropriate eco-culture will contribute to the formation of an eco-positive and increase responsibility and change the behavior of students.

The introduction of the basics and disciplines of environmental orientation into the curricula of educational programs will help the younger generation develop practical skills of rational behavior in the use of natural resources, careful and economical use of energy resources, water, waste management and sorting, etc. This will provide an opportunity at an early age to know and form the right attitude towards the natural environment in the direction of sustainable development and conservation for the next generation.

It should be noted that there is some positive dynamics in the level of environmental knowledge and practices, however, it should be noted that this is still not enough to solve the current situation in this area. The problem is not in the quantitative indicator of knowledge, but in the formation of environmental awareness among students. In this case, it is necessary to focus on the formation of environmental education for young people, the role of education is also to raise the level of environmental responsibility, consciousness and instill environmental culture and behavior.

Research methods

In the course of our research, we used various methods, in particular such as comparative analysis, technical analysis, description, and generalization. And taiga research and practical experience determine the level of components of environmental education and environmental culture in the conditions of application.

In order to develop adaptive measures for reforming the environmental education system, we conducted a comparative analysis of the existing education system in the country with advanced foreign educational institutions in Sweden and Germany.

The results of the international green rating UI Green Metric are summarized, the positions of European universities and domestic universities participating in this rating are determined. In addition, information from the analytical report provided by UNDP in 2022 was used to assess the level of environmental awareness, environmental behavior and practical skills of the population and youth over the age of 18 in the field of environmental protection [11]. This report contains data on the awareness of the population of Kazakhstan about the problems of climate change and mitigation of its consequences, which are the main challenges at present.

Discussion and results

The education system in Sweden and Kazakhstan is similar. In Sweden, environmental education is not just a topical issue, it is an expression of national pride and part of the cultural

code. Indeed, the combination of respect for nature, high technology and innovative methods combining education and culture is the subject of this state. Sweden is smaller in size and population compared to Kazakhstan, but in terms of funds allocated to education, it exceeds the Republic of Kazakhstan by 3.6 times. That is why Sweden has long been recognized as one of the most environmentally responsible countries in the world.

This is a country where even young children know what recycling is and why it is important to save water. Where does such awareness come from? The answer lies in the history and culture of the country, where nature has always been close and appreciated along with modern achievements of civilization. At the same time, the main attention in modern environmental education is paid to the development of the educational sphere. Let's look at Sweden's experience in the field of environmental education.

Outdoor education programs: Sweden pays great attention to outdoor education. Schools often include outdoor learning activities such as outdoor activities, hiking, and field research, allowing students to explore ecosystems and learn about them first-hand.

Skogsmulle: Skogsmulle (Forest trolls) is a popular educational program for preschoolers and younger children. Its goal is to introduce children to nature and environmental concepts through stories, games and research in forests, instilling a love of nature from an early age. We can make such a training program interesting both in Kazakhstan and in the Kazakh style of fairy tales and legends.

Collaboration with non-governmental organizations (NGOs) and environmental organizations: Schools often collaborate with environmental NGOs and organizations to organize workshops, workshops and projects related to environmental protection, climate change and sustainable Development Goals.

Teacher training and professional development: Continuing education and professional development programs are available for teachers, which allow them to improve their skills in the effective conduct of environmental education. These programs include teaching methods, innovative approaches and updated knowledge on environmental issues.

Participation in environmental campaigns and competitions: Students actively participate in environmental campaigns, competitions and projects at the local and international levels. Such participation fosters a sense of responsibility and encourages active participation in environmental protection.

Sustainable practices in schools: schools in Sweden often use sustainable development methods in their premises. This includes recycling programs, energy-saving activities, composting, and environmentally friendly initiatives that involve students in the practical application of sustainable lifestyle principles.

Curriculum integration: the topics of Environmental Protection and sustainable development are integrated into the different disciplines of the curriculum. Students learn about climate change, biodiversity, renewable energy, and environmental protection not only in science classes, but also in social studies, linguistics, and other subjects.

Consider the state of Germany as the following example. The country is not only one of the most economically prosperous in the world, but also at the forefront of the current environmental movement. In addition to the planned study of 2018, an interim study was carried out at the beginning of the summer of 2019, covering the main problems of the time series. Among all the problems that Germany faced in 2018 and again in 2019, Environmental Protection and climate change measures prevailed for the people surveyed. Compared to last year, it became clear that this issue was of great importance in the eyes of the population. Although in 2016, almost half of those surveyed reported that protecting the environment and combating climate change is a very important task, this figure increased significantly to 64 percent in 2018 and then to 68 percent in 2019.

The next case to consider is creativity and art, and one of the most important ways of its interaction of a person with the outside world. This allows a person to express their feelings, thoughts and experiences, to open the internal world. Creativity is also an important factor in the development of personality, it helps a person to develop imagination, thinking, creativity. He argued that creativity is an effective tool for the formation of a value attitude of Primary School students to nature. This gives children a lot of opportunities.

Nature helps children develop in different directions: physical development - children who often walk in nature are active and healthy. They move more, breathe fresh air, and get more vitamins and minerals from fruits, berries, and vegetables that grow in nature. Mental development - nature stimulates the development of children's imagination and creativity. Often found in nature, children learn well, remember information and perform logical tasks.

Next, let's look at how environmental protection activities in our country are organized at the level of higher educational institutions. So, for example, it should be noted that the environmental program "Green Universities of Kazakhstan" is being implemented, which includes the following areas of activity:

1. Campus culture (core values, student, staff, community engagement, regional and global reach/partnership)

2. Education /research / curriculum / interdisciplinary work on sustainable development The University is also one of the leading higher education institutions in Kazakhstan. Its current mission is to train the next generation of highly qualified professionals who will use their knowledge and skills combined with the broad support of the graduate community to promote the development of the economy, industry and society.

3. Sustainable office

4. Office activities.

Above, we examined the specifics of environmental education in Sweden and Germany at the secondary school level. Next, let's look at the best practices of these countries on the basis of higher education, that is, at universities. In Germany, more than 4,500 educational institutions offer extracurricular activities aimed at improving the level of environmental education. Germany is distinguished by a special variety of environmental specialties. Another important feature of the training is the practical component of environmental education. Field expeditions are provided for all environmental students, where they learn to conduct the necessary research and, based on their results, write their papers based on the first study. They are an environmental engineer working at various industrial enterprises, an environmental lawyer specializing in lawsuits related to violations of environmental legislation, a hydrologist analyzing the state of water resources, etc. Among the most sought-after areas of the profession, a double degree opens up new horizons for graduates in terms of subsequent employment and career prospects. It should be noted that this experience is planned to be implemented at Narxoz University on the basis of educational programs «Environment and sustainable development» in 2024.

Education for Sustainable Development (SDGs): Sweden has joined the UNESCO Framework Program on Education for Sustainable Development (SDGs). This includes encouraging critical thinking, problem solving, and value-based education that enables students to contribute to a sustainable future.

The study will reveal changes in attitudes towards the environment in the context of higher education. To implement the goals and objectives of the «green» university strategy, we studied the content of the bachelor's degree programs of the «Narxoz University». This concept is aimed at identifying ways to achieve a number of complex goals related to the development of educational programs and human capital [10].

Through the implementation of the strategy of the " green " university should strive to be at the forefront of these changes:

- development of programs and policies for Sustainable Development aimed at developing the University, protecting the environment;
- review of the content and implementation of existing modules and courses throughout the University in order to ensure sustainable development, integration of learning outcomes on sustainable development into curricula, development of modules related to environmental sustainability;
- provide high-quality applied research programs and projects related to the Sustainable Development Goals;
- development of interdisciplinary educational programs and activities related to sustainable development;
- research institutes and divisions in the field of Ecology and sustainable development;
- the concept of development of "green" universities.

As part of the implementation of these tasks, universities should receive the status of "green" universities. "Green" University has a number of characteristics that require attention. This is a development that involves coordinating the actions of all structural units to achieve a common goal. Within the framework of the concept of a "green" university, it is necessary to adhere to a sustainable development strategy. For example, this is the desire to save as much water and electricity as possible, support environmental interests in the formation of green procurement of tenders and other measures. Adhering to the philosophy of a "green" university means creating comfortable "green" spaces, using energy - efficient technologies, separate garbage collection, etc. [12].

The proposed development strategy of the "green" university should focus on the following sections:

- campus culture (core values, student engagement, employee engagement, community engagement, regional and global inclusion / partnership);
- education (research, curricula) is an interdisciplinary work on Sustainable Development. This concept is aimed at identifying ways to achieve a number of complex goals related to the development of educational programs and human capital, the admission and training of students, the fulfillment of social responsibility to society, ensuring sustainable development;
- permanent management;
- campus activities (climate change, accessibility, waste, water, transportation, green purchases, food).

Module "Ecology and Nature Management" at Narxoz University is available for the following educational programs: accounting and auditing, Finance, economics, marketing, management, world economy, organization and rationing of labor, state and local administration, law, international relations, social work, catering and hotel business, tourism, information systems and statistics.

The module consists of 4 courses: «The Doctrine of the Biosphere», «Environmental safety», «Water and Land Resources Management», «Green Economy and Sustainable Development». This course is intended for the formation of ecological culture among students of all specialties, familiarization of students with the basic concepts of ecosystems and the factors of the emergence of ecosystem degradation processes, the basic principles of optimal nature management and nature protection, as well as the development and preservation of civilization, the relationship of socio-ecological and biospheres processes [9]. Consequently, it should be noted that successful and resultative environmental performance is not directly dependent on the responsibility of the managers of large companies and the administration of universities. The modern model of a graduate with high skills in the field of the environment and sustainable development is formed and depends on the activity.

We have studied the basics of the Swedish model of environmental education and options for its implementation in the context of Kazakh education. However, given the national traditions and mentality of the country, it is possible to face certain barriers in the domestic context.

Lack of resources: There is a high probability of a shortage of financial resources that need to be directed to improving the skills of teachers and their retraining. As well as the introduction of appropriate infrastructure, similar and used in an economically developed country - Sweden.

Predisposition to positive changes: Bureaucratic actions inherent in the domestic education system and the inability to implement and modernize established processes and actions, not the consent of the parties, can slow down the process of introducing new progressive methods of education and adapting educational materials, plans, as well as hinder integration processes in the educational sphere as a whole.

Reform and environmental policy: The imperfection of existing regulatory documents and rules, state standards of education in Kazakhstan may hinder the effective implementation of environmental initiatives and practices used in the Swedish model of education.

Dual degree and academic mobility programs: Academic mobility and dual degree programs can directly affect the integration of students into the processes of the European model into the practice of Kazakh higher education through the exchange of experience and internships of students and teachers.

Public-private cooperation: This is a process of coordinated actions by the government, the private sector and public organizations, which can contribute to the attraction of material resources, expert activities in the field of education, as well as the development and application of measures in the field of adaptation of environmental education within the framework of sustainability.

It should also be noted that Sweden has a number of advantages, as it is included in the UNESCO Framework Program on Education for Sustainable Development. This program motivates critical and creative thinking, focuses on values that develop students' skills to form environmentally sustainable perspectives.

To develop adaptation measures and directions in the field of reforming the environmental education system in Kazakhstan. We have studied and analyzed the reports of the annual international green ratings of UI Green Metric over the past few years. The analysis revealed the top 10 most advanced environmentally friendly universities. European universities occupy the first positions in this register. The Birkenfeld Environmental Campus at the Trier University of Applied Sciences in Germany is in the third position. Students and teachers of the university are actively engaged in scientific research in the field of environmental science. This university is a "zero-emission university". Another well-known university in Germany, the University of Bremen, is positioned in seventh place, and is also in the top 10. This university has been awarded the Green Campus badge, and is famous for projects in the field of sustainable transport, energy conservation, alternative energy and more.

We will analyze organizational measures in the field of environmental education in Kazakhstan. A number of Kazakhstani universities also participate in the international green rating UI Green Metric. So, for example, in 2017, among the five participating universities, Narxoz University can be noted. It should also be noted that the number of participants from Kazakhstan is increasing from year to year, and in 2023 their number amounted to eighteen. In the same year, 1,183 universities from 84 countries were represented in the ranking, which indicates its globality, Narxoz University positioned itself in 730th place [10].

In order to assess the level of environmental knowledge, eco-behavior and practical skills in the field of ecology, we analyzed the analytical report on the study of environmental awareness of the population of Kazakhstan over 18 years of age about climate change, presented by UNDP in 2022. The assessment of environmental awareness and literacy of the population in the field of ecology was carried out on the basis of a database and private assessments of respondent

participants in accordance with current international practice and the metrology of such assessments.

The survey covered 2,000 respondents from different regions and regions, the sample corresponded to statistical methods of analysis. The total number of responses received amounted to 2,168 people, including interviewing methods, the survey was conducted with 228 respondents. Based on 95% confidence and a margin of error of plus or minus 3%, the required sample size would be 1,067, therefore, the number of respondents is sufficient. The questionnaire consists of filling in the personal parameters of the respondents: gender, age, place of residence. The responses of the respondents after statistical processing are shown in Table 1. These data characterize the level of awareness of the population of Kazakhstan about the problems of climate change and the causes of global warming.

Table 1 – Results of the study of awareness of the population of the Republic of Kazakhstan about climate change

Questions asked to respondents	% of the total number of respondents
Interest in the country's environmental problems among the vast majority of respondents	73.5%
Anthropogenic atmospheric pollution is a "Very serious problem"	46.8%;
Shortage and pollution of the aquatic environment by enterprises is a "Very serious problem"	45.8%;
Accumulation of industrial and solid waste, "Very high severity of the problem"	42.7%.
They note negative values in the awareness of "Completely uninformed" and "Rather uninformed"	29,5%
The awareness of the population about adaptation measures to the effects of climate change is low	61.15%
Human activity has a "High Impact" or "Significant impact" on the climate	72.2%
The importance of the respondent's participation in the development of measures to mitigate the effects of climate change	37.6%
I agree to personally participate in the ongoing environmental protection activities.	58.4%
The level of ecological culture of the population is low or rather low	44.8%
The level of awareness of respondents about international documents and agreements	19.4%
<i>Note – source [11]: OF "Desenta"- Created with Datawrapper</i>	

The study examined data on environmental awareness of the population about climate change on the planet, collected and processed in 2012 and 2020 to compare dynamics by indicators. So, for example, the response to the question of respondents' interest in global warming in 2012 was 75%, in 2020 it increased to 80%, but in 2022 it is observed to decrease to 73%. The reasons for the decline in public interest are different. These include more drastic ones, such as the geopolitical instability in the world, and the economic global crises that have taken place in recent years. These factors are important and overshadow the problems of ecology and environmental pollution.

It should also be noted, according to the data presented in the table, that the level of ecological culture of the population and youth remain at a low level. There are also low indicators on the issue of public awareness of the documents ratified by Kazakhstan in the field of climate change and adaptation. As a positive factor, despite the current situation, it can be noted that most of the participants expressed their interest in participating and implementing environmental measures, and there is some activity in obtaining environmental knowledge, forming environmental behavior and skills for the rational use of natural resources and waste management, energy conservation, etc.

The study will identify changes in attitudes towards the environment in the context of higher education, and adapt the environmental education system in the interests of sustainable development. To implement the goals and objectives of the Green University strategy, we studied the content of the bachelor's degree programs of Narxoz University. This concept is aimed at identifying ways to achieve a number of complex goals related to the development of educational programs and human capital [12].

Through the implementation of the green University strategy, one should strive to be at the forefront of these changes:

- development of programs and policies for sustainable development aimed at the development of the university, environmental protection;
- Revision of the content and implementation of existing modules and courses throughout the university in order to ensure sustainable development, integration of learning outcomes on sustainable development into curricula, development of modules related to environmental sustainability.;
- provision of high-quality applied research programs and projects related to Sustainable Development Goals;
- development of interdisciplinary educational programs and activities related to sustainable development;
- research institutes and departments in the field of ecology and sustainable development;
- the concept of the development of “green” universities [5].

The University conducts research related to the prevention of environmental pollution, using the example of advanced European countries, in order to adapt the environmental education system for sustainable development, the Scientific Research Institute for Sustainable Development of Kazakhstan (SKRI) operates, which successfully implements environmentally friendly green projects. The Kazakhstan Sustainable Development Research Institute (SKRI) is starting research work with UNESCO and the National Academy of Education on how to integrate sustainable development goals into current and future educational reforms in Kazakhstan. It should also be noted that successful adaptation activities are carried out in at least 18 (eighteen) universities in Kazakhstan, which participate and position themselves in the international environmental rating UI Green Metric.

Conclusion

In conclusion, it can be noted that in the modern world, where environmental problems are becoming more and more acute, environmental culture and environmental awareness play a key role.

To ensure environmental sustainability, an environmental approach must be instilled from school. We conducted a detailed statistical analysis of the level of environmental competence of young people using a database and individual assessments of respondents.

The modern model of a graduate with high skills in the field of environmental protection is formed and depends on adaptation measures developed on the basis of an analysis of the general state to internal information. The level of environmental education and culture contributes to the formation of environmentally literate youth for the implementation of sustainable development goals.

An ecologically literate population will not allow increased environmental degradation and pollution of its components. Environmental education should be conducted as a continuous learning process, adapted in the interests of sustainable development using the best practices of foreign educational institutions. It should be started in pre-school institutions and before entering the university education system. It is necessary to instill in children respect for the natural environment from an early age. Training courses at all levels of training should include a course on

environmental protection. As well as timely and effectively implement the adoption of an educational program and strategy in the country. It is necessary to constantly improve the level of environmental literacy of the younger generation in secondary school through interactive teaching methods, practical outdoor activities, excursions, with the help of game elements of learning – environmental quests, case studies, contests and quizzes.

A motivational tool for universities in the field of ecology and environmental protection is to obtain the status of a “green” university with participation in the International University Sustainability Rating UI Green Metric. We have analyzed the content of existing modules and university-wide courses in order to establish the sustainability of the content and integrate the sustainability of the results into educational programs. The combination of the principles identified above in their interaction provides a holistic description of the process of building a system of environmental and vocational education, ensures the effectiveness of the formation of environmental culture of university students. Higher education plays a fundamental role in achieving the Sustainable Development Goals by providing students with the knowledge, skills and values necessary to support the rapidly growing demand from employers for sustainable development competencies in the workplace in all fields. The main condition for the adaptation of environmental culture and education is an integrated approach, continuity and continuity of educational programs within the framework of the practical implementation of the objectives of the «Green» University strategy.

Lifelong learning means that in order to achieve sustainable development, the participation of the entire population, and mainly the younger generation, is necessary. To train young people in the field of ecology and natural sciences, it is necessary to improve the qualifications of teachers, involve practitioners in training through webinars, trainings and training courses. In order to implement the Concept of Kazakhstan's transition to a «green economy», it is necessary to focus on a competence-based approach in the preparation of bachelors and masters of natural sciences in the learning process. Thus, the formation of the fundamental and methodological foundations of environmental education and the formation of environmental culture among the younger generation will allow achieving sustainability with an optimal combination of economic, political, social and cultural aspects of development to improve the well-being of the whole society.

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