УДК 57.08

Ш.Ж. Дауренбекова[1], С.М.Дюсембинова[1], А.М.Маусумбаева[1]

[1] Жетысуский университет им.И.Жансугурова, Республика Казахстан

СОЗДАНИЕ ЭЛЕКТРОННОГО УЧЕБНИКА «БИОРЕСУРСЫ КАЗАХСТАНА» И QR-СТЕНДА «ЗАПОВЕДНИКИ КАЗАХСТАНА» ДЛЯ ПОЛИЯЗЫЧНЫХ ГРУПП ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ

Аннотация. Статья посвящена проблеме развития английского языка и необходимости создания и использования электронных учебных пособий в полиязычных группах высших учебных заведений. Разработан электронный учебник по дисциплине «Биоресурсы Казахстана». Катастрофически возрастающие экологические проблемы приводят к уничтожению биологического разнообразия в Казахстане. Создан QR-стенд «Заповедники Казахстана», где представлена информация по флоре и фауне 10 заповедников, действующих в Казахстане. Сканируя QR-код, можно получить сведения о заповедниках в виде аудио- и видео-слайдов на английском языке. По данным мониторинга наблюдается рост уровня обученности полиязычных групп использующих электронный учебник и QR-код на занятиях. Использование цифровых технологий является перспективным направлением в системе образования.

Ключевые слова: полиязычные группы, электронные учебники, цифровые технологии, биоразнообразие, биоресурсы, QR-стенд.

Sh.Zh.Daurenbekova[1], S.M.Dyusembinova[1], A.M.Mausumbaeva[1]

[1] Zhetysu University named after I.Zhansugurov, Republic of Kazakhstan

CREATION AN ELECTRONIC TEXTBOOK «BIORESOURCES OF KAZAKHSTAN» AND A QR-STAND «RESERVES OF KAZAKHSTAN» FOR MULTILINGUAL GROUPS OF HIGHER EDUCATIONAL INSTITUTIONS

Annotation. The article is devoted to the problem of the development of the English language and the need to create and use electronic textbooks in multilingual groups of higher educational institutions. Developed by the electronic textbooks on the discipline "Bioresources of Kazakhstan". Catastrophically increasing environmental problems lead to the destruction of biological diversity in Kazakhstan. A QR stand "Nature Reserves of Kazakhstan" has been created, where information on the flora and fauna of 10 nature reserves operating in Kazakhstan is presented. By scanning the QR code, you can get information about the reserves in the form of audio- and video - slides in English. According to monitoring data, there is an increase in the level of training of multilingual groups using electronic textbooks and QR- code in the classroom. The use of digital technologies is a promising direction in the education system.

Keywords: multilingual groups, electronic textbooks, digital technologies, bioresources, QR stand, biodiversity.

Introduction. The use of digitalization is a progressive step in the education system of the XXI century. Innovative digital technologies in education significantly improve the qualifications, improve the professional activities of teachers and make it possible to use digital tools in the classroom to transfer knowledge to students [1]. Thanks to the inclusion of elements of digital technologies, the content of education, methods and organizational forms of educational work are updated, as a result of which the quality of education is improved [2]. Currently, universities operate and develop on the basis of the latest educational technologies, students receive basic knowledge with the introduction of modern trends and conditions are created for the training of a new type of specialists capable of obtaining and implementing knowledge through unique educational technologies [3, 4]. Due to the demand and social significance, the development and creation of electronic textbooks in almost all areas of academic disciplines is becoming relevant [5, 6].

One of the largest highlights of the business and social modernization occurring in Kazakhstan people group is the language strategy. In 2007, the project "Trinity of Languages" was adopted at the state level in Kazakhstan as one of the main priorities of state policy [7]. In

Kazakhstan, right around 32 instructive foundations are instructing in three dialects - English, Kazakh and Russian, consequently, more than 5.5 thousand alumni get multilingual training .All universities in Kazakhstan are working on the implementation of the principles of the Bologna process, as the main aspect of this document is directly related to the implementation of multilingual education [8,9]. Since 2012, the Ilyas Zhansugurov Zhetysu University has been implementing a multilingual education program among the first 20 universities in Kazakhstan, which is aimed at training specialists in technical and pedagogical specialties with language competence based on parallel mastery of Kazakh, Russian and English languages, mobile in the international educational space and in the labor market, capable of intercultural communication One of the complications of multilingualism is the lack of material for teaching in English. Therefore, the development of the establishment of textbooks in English is one of the relevant objectives.

To solve this problem, it is necessary to fully organize the possibility of independent work of students by providing textbooks and teaching aids in full, electronic textbooks (e-learning aids), the creation of educational and methodological complexes of disciplines, including methodological guidelines for independent work of students. Teachers of Ilyas Zhansugurov Zhetysu University successfully develop textbooks, teaching aids, digital explanatory dictionaries, including terminological ones, in English, Kazakh and Russian in various disciplines. Adjustments have been made to educational and methodological complexes, syllabuses and work programs of subjects taught in English.

The loss of biological diversity. The Republic of Kazakhstan is the largest country in Central Asia, with a territory of 2,072,000 km2 and a population of 19 million people. The country contains lowland deserts, steppes, mountain forests, and meadows. Ecological zones range from semiarid, forested steppes in the northern zones and warm moderate deserts in the south to cold semideserts. Forests occupy only 3.8 percent of the country’s surface, mainly in the northern part of the country and in the high mountain slope valleys and riparian areas. The mountain ecosystems, which cover more than 7 percent of the country, contain more than 30 plant communities dominated by woodlands but sprinkled with shrublands and mountain meadows. The varied terrain and climatic conditions contribute to a diversity of ecosystems and species.

Over six thousand species of plants grow in Kazakhstan (515 of them are only here), in its open spaces you can find about 500 species of birds, 178 species of animals, 49 species of reptiles, 12 species of amphibians, and 107 species of fish in rivers and lakes. More than 6,000 species of vascular plants are found in Kazakhstan, along with 5,000 species of fungi, 485 species of lichens, 2,000 species of algae, and 500 species of bryophytes. Among the vascular plants, 14 percent are endemic to Kazakhstan.

The fauna of Kazakhstan includes 178 species of mammals, 489 species of birds and 117 species of fish. An estimated 6,000 species of vascular plants are found in Kazakhstan [10].

The conservation of biodiversity is one of the global environmental problems and is becoming more acute every year as new species disappear. The catastrophic decrease in biodiversity is mainly due to the destruction of the habitat as a result of anthropogenic activities, the nature-intensive development of agriculture and forestry, and environmental pollution. The territory of the Republic of Kazakhstan is characterized by: vastness, uniqueness of geographical location, the presence of different climatic zones, which is due to the diversity of natural conditions, the richness of flora and fauna. However, catastrophically increasing environmental problems lead to the destruction of Kazakhstan's biological diversity. The main factors of the decline and loss of landscape and biological diversity in Kazakhstan are man-made and anthropogenic impacts on the habitat and desertification.The loss of biological diversity continues due to the destruction of natural ecosystems, changes in the water regime of territories, loss of forests, overexploitation of biological resources, dumping of industrial and irrigation waters, introduction of alien species of plants and animals. The depletion of biodiversity is especially noticeable in mountain, forest, desert, floodplain and coastal ecosystems.

In order to improve the activities on conservation of biodiversity in a global context, it is necessary to develop and effectively participate in international programs and intergovernmental agreements [11]. Action Plan on Conservation of Biodiversity of Kazakhstan was developed based on the Convention on Biological Diversity, Strategy 2030 on environmental issues and methodology of the NPDOOS/UR. According to the purpose of the Strategy on Biodiversity the Action Plan aims to achieve three main objectives: conservation, balanced use and restoration of biological diversity and its resource potential. Accordingly, priority tasks were set: enforcing of protection and conservation of fragile biological diversity, improving the management system of its use, elimination of irreversible violations and restoration of ecosystems and biodiversity resources in-situ [12].

Creating an electronic textbook for the discipline "Bioresources of Kazakhstan" in English. Purpose of work: to develop an electronic textbook for the discipline "Bioresources of Kazakhstan" and to create of a QR - stand "Reserves of Kazakhstan" in English for its further use in the higher education system for teaching multilingual groups; creating a study guide, rich in lectures created according to the curriculum, adding a glossary, drawing up practical tasks for a better understanding of the topic, as well as compiling questions and tests for self-testing.

To accomplish this goal it is vital to set and clear up the following tasks:

1. study of the composition and use of electronic textbooks in the learning process;
2. creation of an electronic textbook on the subject "Bioresources of Kazakhstan" in English;
3. to develop practical tasks for the electronic textbook "Bioresources of Kazakhstan;
4. provide visual materials, as well as draw up questions and tests to check the knowledge;
5. to create of a QR stand "Reserves of Kazakhstan;

Electronic workbooks are aimed at equipping or studying the most convenient and outstanding didactic material and eliminate learning difficulties. It also provides an assessment of textbooks similar to them, effective tools, convenient equipment and techniques in the process of controlling knowledge and developing skills. An important role in the improvement of electronic textbooks is played by the development of methodological assistance for the textbook. Computerization of all the main stages of training (education) using electronic textbooks - from monitoring the content of educational materials and making recommendations for final grades.

As a result, all the theoretical textbooks have been replaced by a bright, interesting, stunning game, that is, widely used interactive media formats in graphics, including interactive and voice acting. Therefore, it is not enough to create an electronic textbook from an effective textbook with its equipment (creating hypertext) and visual aids (including multimedia) and on a computer screen. The significance is on the basic principle of an electronic textbook, rather than turning it into text images, links.

The electronic textbook, in turn, offers educators, observers, model developers, etc. to install magnetic drives (hard or soft disks) on a computer, a set of programs whose contents are intended for the main scientific textbook. A regular electronic textbook is often supplemented, and if we want to be more sufficient, it: provides quick feedback; helps to quickly find the necessary information (including contextual search), which of the usual complex textbooks to look for; saves time by asking less about important hypertext interpretations, as well as in short texts — shows, stories, models, etc. its explanation is adapted to the personality, knowledge testing is considered in a special section [13].

The electronic version of the textbook is confronted with the means of control, and, like this control, the control of knowledge in training is a key issue. For a long time, in the traditional education system, knowledge control was usually carried out orally. Various test methods are currently used. Many do not share these positions, and such tests limit how to analyze the necessary skills and find a solution to the problem. Using new technologies in distance learning systems, new opportunities can be solved with high quality. We have created an electronic textbook, and finally, we can hope that the use of innovative technologies will increase the effectiveness of training and

will also become an indispensable tool for self-education of students. An electronic textbook is necessary for independent student work, full-time and especially distance learning:

The electronic textbook "Bioresources of Kazakhstan" consists of an introduction, 10 chapters, 7 subtitles, where the last chapter is devoted to the conservation of the country's biodiversity. The lectures that are suggested below, given a significant part of this issue, are necessary to find out for students. An impeccable approach to creating a repertoire of lectures will reduce the time during which children have problems. The theory of lectures “Bioresources of Kazakhstan” is one of the main points that are studied in his educational institutions.

The content of the electronic textbook:

1.*Lectures.*

Below there is topics of lectures: Introduction; Lec 1: General concept about Kazakhstan; Lec 2: Ecosystems of Kazakhstan; Lec 3: Geographical position and climate zones; Lec 4: North Kazakhstan; Lec 5: Reserves and national parks of North Kazakhstan; Lec 6: South Kazakhstan; Lec 7: Reserves and national parks of South Kazakhstan ; Lec 8: East Kazakhstan; Lec 9: Reserves and national parks of East Kazakhstan; Lec 10: West Kazakhstan; Lec 11: Reserves and national parks of West Kazakhstan; Lec 12: Central Kazakhstan; Lec 13: Reserves and national parks of Central Kazakhstan; Lec 14: The Red Book of Kazakhstan; Lec 14.1: Plants in the Red Book of Kazakhstan; Lec 14.2: Animals in the Red Book of Kazakhstan; Lec 15: Conservation of biodiversity of Kazakhstan

2. *Practical part of the electronic textbook.*

The following are pages that are designed to be studied by students. Each page is a separate subitem. Below illustrates the task where students need to determine whether this is true or false, thanks to this task, students will responsibly read the topic, because in order to decide whether or not it is true, you need to read and find it in the text.

Below there is topics of practical lessons: Prac 1. Medicinal plants of the Republic of Kazakhstan.; Prac 2. Essential oil plants of the Republic of Kazakhstan; Prac 3. Poisonous plants of the Republic of Kazakhstan ; Prac 4. Food plants of the Republic of Kazakhstan; Prac 5. Rational use of plants of Kazakhstan and their protection; Prac 6. Basic water biological resources of the Republic of Kazakhstan, methods for their accounting; Prac 7. Hunting game birds of the Republic of Kazakhstan, their accounting; Prac 8.Fur animals, methods of their accounting: Prac 9. Specially protected natural territories of the Republic of Kazakhstan, their species resources; Prac 10. Rational use of aquatic invertebrates, their use, raw materials obtained from them; Prac 11. Rational use of animals of importance in the hunting economy; Prac 12. The main types of mammals of Kazakhstan. Their bioecological characteristic; Prac 13. Theoretical aspects of the protection and restoration of biological resources; Prac 14. Rare and endangered species, their protection and biological basis for increasing numbers; Prac 15. Protected areas, reserves, reserves and their role in the conservation of biodiversity.

Practical lessons includes tasks: Task 1. Match the definition; Task 2. Decide if the following statements are true or false; Task 3. Translate sentences into Russian; Task 4. Translate from Russian to English; 5. Test questions.

3. *Check the knowledge.*

In an electronic textbook, in addition to theory, you can test your knowledge with questions at the end of each topic, as well as use a dictionary if incomprehensible words arise without knowing their translation.

After each lecture, questions are given for self-examination. It shows a good example, questions are prepared according to the text and vary in degree of difficulty. But knowledge testing is not limited to self-examination questions.

When compiling questions, the goal is to find out how the student understood the text of the textbook. Answering questions, the student tries to:

- highlight and understand the general provisions and conclusions;
- compare this material with previously learned;
- realize causal relationships;

- build reasoning and draw conclusions.

4. *Multiple-choice tests. Testing of acquired knowledge.*

Also in the electronic textbook are included test items with five answer options, from which the student needs to choose one correct option. Test items are compiled in accordance with the theoretical material of the lecture.With the help of tests, you can quickly check how a student has learned the program material. In tests, the principle of choosing from one of the suggested answers one is applied.

5. *A glossary,* also known as a vocabulary, or clavis, is an alphabetical list of terms in a particular domain of knowledge with the definitions for those terms. Traditionally, a glossary appears at the end of a book and includes terms within.

6. *Demonstration materials*

Creating an QR- stand "Reserves of Kazakhstan". The aim of the next project is to use innovative resources [14] in the study "Conservation and protection of biological resources of Kazakhstan". The name of the developed project "Creation of a QR - stand "Reserves of Kazakhstan" in English". The stand provides information on the flora and fauna of 10 nature reserves of Kazakhstan, where a QR code is located under each. Any user will be able to scan the QR - code using the scanner on the phone and immediately get acquainted with the information about the reserve in the form of audio and video slides in English. The created QR - stand can be effectively used as a visual demonstration aid when studying the disciplines "Bioresources of Kazakhstan" and "Ecology of Kazakhstan" in multilingual groups.

The most effective measure of biodiversity conservation is the creation of specially protected natural areas [15]. In 2007, there were 114 protected Areas (Specially Protected Natural Territories) with the status of a legal entity in the Republic of Kazakhstan, including 10 state nature reserves, 10 State national Natural Parks, 3 State forest natural reserves, 55 state nature reserves, 5 state protected areas, 5 State botanical gardens, 26 state natural parks. According to the Decree of the Government of the Republic of Kazakhstan "On approval of the Program for the conservation and rational use of water resources, wildlife and the development of a network of specially protected natural areas.

Nature reserves of Kazakhstan are specially protected natural territories [16]. The purpose of their activity is to protect against extinction and study rare representatives of flora and fauna. Environmental institutions are owned by the Republic. There are 10 nature reserves in Kazakhstan: Aksu-Jabagli, Almaty, Alakol, Barsakelmes, West Altai, Karatau, Kurgaldzhinsky, Markakolsky, Naurzumsky, Ustyurt.

Aksu-Dzhabaglinsky - year of creation - 1927, area - 85.4 thousand hectares. The reserve covers four high-altitude landscape belts (slopes of the Talas Alatau and Ugam ridge). Objects of protection - 1,404 species of plants, 239 species of birds, 51 species of animals and 2 species of fish. Locations: South Kazakhstan region, Sairam and Tulkubassky districts.Almaty - year of creation - 1931, area - 73.3 thousand hectares. The territory of the reserve includes the high mountains of the Trans-Ili Alatau and the sandy banks of the river. Objects of protection - 39 species of animals, 200 species of birds, 965 species of plants. Location: Almaty region (Talgar district)

Alakolsky - year of creation - 1998, area - 12.5 thousand hectares. Coastal wetland landscape. Objects of protection - 323 species of plants, 283 species of birds (12 of them are included in the Red Book), 40 species of animals, 16 species of fish. Location: Almaty region (Alakolsky district)

Barsakelmes - year of creation - 1939, area - 18.3 thousand hectares. Created on the island of Barsakelmes in the Aral Sea. The territory of the reserve is characterized by desert vegetation, objects of protection - 11 species of animals, 3 species of birds, 250 species of plants. Location: Kyzylorda region (Aral district)

Zapadno-Altaisky - year of creation 1992, area - 56.1 thousand hectares. Zapadno-Altaisky mountain-forest landscape. Objects of protection - 564 species of plants, 131 species of birds, 50 species of animals, 5 species of fish. Location: East Kazakhstan region (Leninogorsk district)

Karatau Nature Reserve - year of creation - March 1 , 2004 On the territory of the Karatau Reserve there are 3 species of mammals that are listed in the Red Book of the Republic of Kazakhstan: Karatau argali, Indian porcupine and stone marten. The avifauna contains 118 species. 12 species of rare birds, whose range is declining, are endangered, are listed in the Red Book of Kazakhstan (1996). Location: located in the central part of the Karatau ridge, which is a branch of the northwestern arcs of the Tien Shan in the Turkestan region.

Kurgaldzhinsky - year of creation - 1968, area - 259 thousand hectares. Includes an untouched section of virgin steppe (38 thousand hectares.), as well as lakes Kurgaldzhin and Thesis (199 thousand hectares.). Objects of protection - 315 species of birds, 41 species of animals, 14 species of fish, 343 species of plants. Location: Akmola region (Kurgaldzhinsky district)

Markakolsky - year of creation - 1976, area - 75 thousand hectares. South Altai mountain forest landscape and Lake Markakol. There are 721 species of plants, 58 species of animals, 260 species of birds, 6 species of fish. Location: East Kazakhstan region (Markakolsky district)

Naurzumsky - year of creation -1934, area - 87.7 thousand hectares. Virgin-kovyl steppe and many lakes. The main objects are protected and relict pine forest, salt and fresh lakes, as well as 286 species of birds, 42 species of animals, 6 species of fish, 687 species of plants. Location: Kostanay region (Naurzum district)

Ustyurt - year of creation-1984, area - 223.3 thousand hectares. Semi-desert and desert landscapes, objects of protection: 27 species of animals, 111 species of birds, 261 species of plants. Location: Mangystau region (Yeraliyevsky district)

All this information is presented on a QR - stand, where endangered species of animals and plants listed in the Red Book of the Republic of Kazakhstan are displayed in the form of audio - and video - slides.

In the process of creating an electronic textbook “Bioresources of Kazakhstan”, the set goals were met, i.e.:1. Created an electronic teaching aid in English; 2. According to the curriculum, lectures, a glossary were created. 3. Practical assignments were attached, and visual demonstration materials were selected. 4.As well as to consolidate the material covered, questions and tests for self-testing were created. 5.Created QR stand "Reserves of Kazakhstan".

Summing up, we can say that work has been done to create an electronic textbook intended for use in the classroom, as well as for independent work of students. The main advantage of this software product is the availability of the material. This electronic textbook “Bioresources of Kazakhstan” can be recommended and tested for students of multilingual groups in the natural-technical field. A patent was obtained for the development of the «Bioresources of Kazakhstan» electronic textbook.

The created QR - stand "Reserves of Kazakhstan" can be used as a visual demonstration material when studying the disciplines "Bioresources of Kazakhstan" and "Ecology of Kazakhstan” in multilingual groups.

According to the monitoring data, there is an increase in the level of training of multilingual groups in all studied disciplines using EUP in the classroom. This gives grounds to assert that the use of information technologies and pedagogical monitoring in the process of quality management of education increases the effectiveness of the educational process and is a promising direction in the education system.

REFERENCES

1. Инновационные и цифровые технологии в образовании https://nticenter.spbstu.ru › courses.

2. Liisa Ilomäki ,Minna Lakkala Digital technology and practices for school improvement: innovative digital school model *Research and Practice in Technology Enhanced Learning* volume 13, Article number: 25 (2018)

3. Bakkenes, I., Vermunt, J., & Wubbels, T. (2010). Teacher learning in the context ofeducational innovation: learning activities and learning outcomes of experienced teachers. *Learning and Instruction, 20*, 533 548 https://doi.org/10.1016/j.learninstruc.2009.09.001.

4. Donnelly, D., McGarr, O., & O'Reilly, J. (2011). A framework for teachers' integration of ICT into their classroom practice. *Computers & Education, 57*, 1469–1483 Retrieved October 16, 2016 from https://www.learntechlib.org/p/50758/.

5. Lakkala, M., Paavola, S., Kosonen, K., Muukkonen, H., Bauters, M., & Markkanen, H. (2009). Main functionalities of the Knowledge Practices Environment (KPE) affording knowledge creation practices in education. In C. O'Malley, D. Suthers, P. Reimann, A. Dimitracopoulou (Eds.), Computer Supported Collaborative Learning Practices: CSCL2009 Conference Proceedings. (pp. 297–306). Rhodes, Creek: International Society of the Learning Sciences (ISLS).

6. Lakkala, M. & Ilomäki, L. (2015). A case study of developing ICT-supported pedagogy through a collegial practice transfer process. Computers & Education, 90, .https://doi.org/10.1016/j.compedu.2015.09.001.

7. Государственная программа развития и функционирования языков в Республике Казахстан на 2011-2020 годы. // . [Электронный ресурс]. — Режим доступа: geokz.tv, свободный

8. Образование в многоязычном мире: //Установочный документ ЮНЕСКО. – Париж, 2003. – 38 с. [Электронный ресурс]. – Режим доступа: http//www.unesko.orq 220

9. Crystal D. English as a global language. — Cambridge, England: Cambridge University Press, 2003

10. Биоразнообразие в Республике Казахстан - PDF Free Download https://docplayer.com ›28504952-...

11. Экология Казахстана: топ-5 главных проблем страны - Strategy2050.kz https://strategy2050.kz › news › eko...

12. On the concept of development and placement of specially protected natural territories of the Republic of Kazakhstan until 2030. Government Decree of 10.11.2000 N 1692.

13. Баранова, Ю.Ю. Методика использования электронных учебников в образовательном процессе // Информатика и образование. - 2000. - № 8.

14. Использование QR-кодов в обучении (на конкретном примере) https://www.eduneo.ru › ispolzovani... .

15. Мырзабеков Ж.М. Особо охраняемые природные территории Казахстана. – А., 2000–172 с.

16. Охраняемые природные территории Средней Азии и Казахстана, вып. 1-Тетис, А.,2006-352с.

REFERENCES

1. Innovative and digital technologies in education https://nticenter.spbstu.ru › courses.

2. Liisa Ilomäki ,Minna Lakkala Digital technology and practices for school improvement: innovative digital school model Research and Practice in Technology Enhanced Learning volume 13, Article number: 25 (2018)

3. Bakkenes, I., Vermunt, J., & Wubbels, T. (2010). Teacher learning in the context ofeducational innovation: learning activities and learning outcomes of experienced teachers. Learning and Instruction, 20, 533 548 https://doi.org/10.1016/j.learninstruc.2009.09.001.

4. Donnelly, D., McGarr, O., & O'Reilly, J. (2011). A framework for teachers' integration of ICT into their classroom practice. Computers & Education, 57, 1469–1483 Retrieved October 16, 2016 from https://www.learntechlib.org/p/50758/.

5. Lakkala, M., Paavola, S., Kosonen, K., Muukkonen, H., Bauters, M., & Markkanen, H. (2009). Main functionalities of the Knowledge Practices Environment (KPE) affording knowledge creation practices in education. In C. O'Malley, D. Suthers, P. Reimann, A. Dimitracopoulou (Eds.), Computer Supported Collaborative Learning Practices: CSCL2009 Conference Proceedings. (pp. 297–306). Rhodes, Creek: International Society of the Learning Sciences (ISLS).

6. Lakkala, M. & Ilomäki, L. (2015). A case study of developing ICT-supported pedagogy through a collegial practice transfer process. Computers & Education, 90, .https://doi.org/10.1016/j.compedu.2015.09.001.

7. The State Program for the development and functioning of languages in the Republic of Kazakhstan for 2011-2020. // . [Electronic resource]. - Access mode: geokz.tv, free

8. Education in a multilingual world: //UNESCO Policy Document. - Paris, 2003. - 38 p. [Electronic resource]. - Access mode: http//www.ipesco.orq 220

9. Crystal D. English as a global language. — Cambridge, England: Cambridge University Press, 2003

10. Biodiversity in the Republic of Kazakhstan - PDF Free Download https://docplayer.com ›28504952-...

11. Ecology of Kazakhstan: top 5 main problems of the country - Strategy2050.kz. https://strategy2050.kz › news › eko...

12. On the concept of development and placement of specially protected natural territories of the Republic of Kazakhstan until 2030. Government Decree of 10.11.2000 N 1692.

13. Baranova, Yu.Yu. The methodology of using electronic textbooks in the educational process // Informatics and education. - 2000. - № 8.

14. Using QR codes in training (using a specific example) . https://www.eduneo.ru › ispolzovani...

15. Myrzabekov Zh.M. Specially protected natural territories of Kazakhstan– - A., 2000-172 p.

16. Protected natural territories of Central Asia and Kazakhstan, issue 1-Tethys, A., 2006-352s.

Информация об авторах

Шолпан Жумабековна Дауренбекова – к. б. н., преподаватель-лектор, кафедра Образовательные программы по естественным направлениям, Жетысуский университет им.И.Жансугурова, Республика Казахстан, г.Талдыкорган, e-mail: shdaurenbekova@mail.ru

Сауле Мырзабековна Дюсембинова – магистр педагогики и психологии, преподаватель-лектор, кафедра Образовательные программы по естественным направлениям, Жетысуский университет им.И.Жансугурова, Республика Казахстан, г.Талдыкорган, e-mail: saule_dyusembinova@mail.ru

Аида Макеновна Маусумбаева – к.с/х.н.преподаватель-лектор, кафедра Образовательные программы по естественным направлениям, Жетысуский университет им.И.Жансугурова, Республика Казахстан, г.Талдыкорган, e-mail:

Authors

Sholpan Zhumabekovna Daurenbekova - PhD, lecturer, Educational programs in natural sciences, Zhetysu University named after I.Zhansugurov, Republic of Kazakhstan, Taldykorgan, e-mail: shdaurenbekova@mail.ru

Saule Myrzabekovna Dyusembinova - Master of Pedagogy and Psychology, lecturer, Educational programs in natural sciences, Zhetysu University named after.I.Zhansugurova, Republic of Kazakhstan, Taldykorgan, e-mail: saule_dyusembinova@mail.ru

Aida Makenovna Mausumbayeva - Candidate of Agricultural Sciences, lecturer, Educational programs in natural sciences, Zhetysu University named after I.Zhansugurov, Republic of Kazakhstan, Taldykorgan, e-mail:aida_25.65@mail.ru

Для цитирования

Дауренбекова Ш.Ж., Дюсембинова С.М., Маусумбаева А.М. Создание электронного учебника «Биоресурсы Казахстана» и QR-стенда «Заповедники Казахстана» для полиязычных групп высших учебных заведений // «Информационные технологии и математическое моделирование в управлении сложными системами»: электрон. науч. журн. – 2022. – №1(13). – С. 23-31 – DOI: 10.26731/2658-3704.2022.1(13).23-31 – Режим доступа:

http://ismm-irgups.ru/toma/113-2022, свободный. – Загл. с экрана. – Яз. рус., англ. (дата обращения: 26.04.2022)

For citation

Daurenbekova S.Z., Dyusembinova S.M., Mausumbayeva A.M. Creation an electronic textbook «Bioresources of Kazakhstan» and a QR-stand «Reserves of Kazakhstan» for multilingual groups of higher educational institutions // Informacionnye tehnologii i matematicheskoe modelirovanie v upravlenii slozhnymi sistemami: ehlektronnyj nauchnyj zhurnal [Information technology and mathematical modeling in the management of complex systems: electronic scientific journal], 2022. No. 1(13). P. 23-31. DOI: 10.26731/2658-3704.2022.1(13).23-31. [Accessed 26/04/22]