QUEST TECHNOLOGY AS A MEANS OF PROMOTING SCHOOL FORESTRIES IN ZABAYKALSKY KRAI

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Abstract: The problem of preservation and reproduction of forest resources as components of ecological culture of citizens is studied together with the willingness of future generations to solve it. This readiness is shaped by the movement of the school forestries, which, however, are seen by teachers as retro-innovation. To overcome the contradictions, the authors made a project for the development and implementation of quest technologies in the work of school forestries in Zabaykalsky Krai. The aim of the project is to increase the level of student's ecological culture through educational quests in the maintenance activities of the school forestries. The work presents the used theoretical (analysis of psychological and pedagogical literature, retrospective analysis of own activities), empiric (participant observation, design), and content analysis research methods (introduction of quests, including the quest landings as relevant technology of the school forestries activities). The results of the project are the change in the awareness of students about the content of the school forestries activities, about the professions related to forestry, the degree of involvement of each child in environmental protection as the characteristics of the development level of ecological culture. All results are is reflected in the "Green notebook" of a project participant and proves the achievement of the project aims. **Keywords:** Zabaikalsky Krai, children's associations, school forestries, vocational guidance activity, quest technology, quest landing, promotion of the school forestries

1. INTRODUCTION

Russian forests occupy a quarter of world forest cover, are the renewable natural resource that satisfies multiple needs of the economy and society, performs indispensable ecological, environmental, and other useful functions. 46.4% of the area of Russia is covered by forests, and the total area of Russian forests (according to 01.01.2017) is 1 184 000 000 ha of land is 795 000 000 [34]. Today, the forestry sector requires the modern innovative scientific and technological achievements, a substantial upgrade focused on the drastic renewal of all the activities that implies the future emergence of a new generation of professionals responding to the challenges of time. Their "nurturing" starts today - with early childhood education and extra-curricular activity. Analysis of the current development of additional education of children in ecology [1, 19, 25], strategic documents on sustainable social development, legal documents [20] defining the educational policies in ecological education [7, 9, 24,] revealed a number of contradictions.

- They are: the social need for the formation of student's ecological culture and low interest of students to active participation in practical environmental activities;

- the need of the young generation for innovative extracurricular and socially meaningful activities and indirect lack of initiatives on the implementation and use of modern educational technologies in public natural science-related events;

- the social need for creation of necessary conditions for student's personal development, positive socialization and professional identity of children.

Given that the school forestries are seen by teachers as retro-innovation, the innovative concept and the main idea of this project is to promote forestry districts through implementation of a unique educational quest technology. **The aim of the project** is the development, testing and implementation of the educational quests in the maintenance activities of the school forestries for students with own initiatives in the development of nature preservation skills. The methods of project implementation were: **theoretical** (analysis of psychological and pedagogical literature, including the array of dissertation research on ecological and labor education, the essential characteristics and contents of the activities of children's public associations, educational technologies (including quest technologies); retrospective analysis of the activities of authors and realizers of the project; **content analysis** of legal documents regulating the activities of the school forestries, and research works in pedagogy; **empirical** – designing quest technologies; participant observation in the implementation of quest technologies in the activities of the school forestry districts in Zabaykalsky Krai.

The project was implemented on the basis of the children's association school forestry "Forest land" and involved students of all levels of education in the city of Chita and Zabaykalsky Krai during the academic year in a series of ecological and educational quests, ecological quest competitions and themed quest tasks. The most important **condition for the project implementation** was the interaction of the social partners: The Ministry of Natural Resources of Zabaikalsky Krai, branch of federal state-funded institution "Roslesozashchita" - "Center for forest protection of Zabaikalsky Krai", Committee of education of administration of city district "Gorod Chita", educational institutions of city district "Gorod Chita", research laboratory of ecological education of the "Transbaikal State University", children's public association school forestry "Forest land", with the expert support of the federal state budget scientific institution "Institute for the study of childhood, family and education of Russian Academy of Education". The relevance of the project in modern conditions of development of education and social sphere is due to objective factors:

1) priorities of state environmental policy of national security provision and development of civil initiatives (as confirmed by normative documents – Russian National Security Doctrine until 2020 [34], the Foundations of state policy for ecological development of the Russian Federation for the period until 2030 [11], the Program for the development of school forestry movement (Federal Forestry Agency, 2012) [16], Strategy of organization and development of the system of ecological education and formation of ecological culture in Zabaikalsky Krai until 2020;

2) the priorities of the educational policy of the Russian Federation in the sphere of additional education for children in the formation active civic position and the basic national values of students, promoting environmental culture as personal learning outcome (a new federal state educational standards [16,17,20]), as well as expanding the range of educational programs. Moreover, it is increasing the range of additional education programs implemented during the vacation period (Concept of children's additional education development [21],

National strategy of actions in interests of children for 2012–2017 [29], Decree of the RF President "On the announcement of the Decade of childhood in the Russian Federation" [27]).

3) actual state of affairs in the system of additional educational programs: only 5% students of the total number (3 384 of 67 249 people) learn natural sciences;

4) challenging ecological situation in Zabaikalsky Krai mainly caused by mainly resource industries and the specificity of the geopolitical situation. Thus, all this refreshes the need for environmental education as a factor of regional ecological safety [14].

The final **institutional outcome** of the project implementation is filled "Green Scoring Notepad" of each student. It reflects their individual rating and portfolio of accomplishments in the activities aimed at preservation and augmentation of forest resources, as well as preservation and enhancement of natural functions of forests.

2. METHODS

Bryansk region is home to the first school forestry. The first student group "Forest patrol" was found on the premises of Zhukovsky forestry establishment and Zhukovka secondary school No. 1 in 1949. During the years of the Nazi occupation, the Bryansk forests were severely damaged. The forest surrounding the green ring of the city of Zhukovka depleted. After the war, the teachers led by the head teacher of the school I.S. Artyukhov carried out huge awareness-raising activities among students and conscribed them to assist Zhukovka forestry establishment in afforestation. According to the history, it was pioneers and Komsomol members who created "Green patrol" to protect oak forests around Desna river, to study flora and fauna, to conduct phenological observations, and to help forest inhabitants. In 1949, under the supervision of students 220 hectares of forest was planted. In 1964, a broad movement of school forestries emerged in the Soviet Union. It required a drastic change in the system of working with students. In 1967, the Ministry of Forestry of the RSFSR and the Ministry of Education adopted the "Regulations on the school forestries" [14]. All-Union Leninist Young Communist League led the activities of the school forestries.

After the collapse of the Soviet Union, changes in forms of ownership in different sectors of the economy, the reforms of the children and youth Communist movement in Russia in 1990s changed the principles of student's activities in the school forestries. From that moment, it was based on the conditions of a particular region, a particular ethnic group, ethnopedagogy and ethnoecology, and contributed to the development of specific ecological thinking [34, pp. 257-292]. Many forest lands passed into private ownership, and the forest establishments service declined. The forests of Russia occupy a quarter of the world's forest cover and ware as one of renewable natural resources, satisfying the multiple needs of economy and society, performing important ecological, environmental, and other useful features. The problems of their preservation and use become increasingly serious. Because of climate change the threat of forest destruction from fire, pests and other adverse factors, the loss of forest biological diversity increase. Forestry increasingly often faces the need to adequately respond to the globalization of markets, new technologies, increased competition and enforcement of environmental restrictions. There is a need to modernize the activities of the school forestries as students' associations, which are to raise love for nature and native land in students, shaping labor skills in forestry and afforestation, nature preservation, and environmental management. On April 16, 2012, the Order of the Head of the Federal Forestry Agency, approved the Program of development for the school forestries on the premises of federal budget institution "Uchebno-metodicheskiy tsentr" ("Training center"). The center for methodological support of the school forestries was found [26].

The sample analysis of dissertation research showed that the ***problem of the school forestries was never studied in psycho-pedagogical works.*** 44% of qualifying research papers viewed the activities of the school forestries in the context of ecological education and environmental activities, including its regional aspect. 24 % of the works considered the role of school forestries in labor education of school students along with the production teams, school field facilities, etc. 12% of the dissertations deal with the staff preparation for working on ecological education, 11% carry out the analysis of school forestries activities as a social formation of children. Only an insignificant number of authors study the activities of the school forestries as a component of the regional educational policy.

The actual use of educational technologies contributing to the development of students' autonomy and critical thinking, ability to solve problems and to work in society constructively is significant for the process of organizing curricular and extracurricular activities of any school subject in terms of educational standards implementation. Modern technologies that contribute to the development of the student as active subject of education exist is a wide variety of forms. They include the following technologies: research and project activities, TIPS, development of critical thinking, problem behavior, educational issues, etc. [3].

The analysis of psycho-pedagogical literature on the use of modern educational technologies was conducted by E.A. Igumnova and I.V. Radetskaya in the study guide for higher and secondary educational institutions "Quest technology in education". The authors identify a number of original approaches to the definition of the main characteristics of modern educational technologies, such as:

- "...the transition from the reproductive to the problematic nature of teaching;

- records of all types of knowledge (informational, procedural, evaluative and reflective) and structural components (according to O. N. Krylova);

- the efficiency of acquisition of educational information (the research held in the United States in the 1980s (National Training Laboratories in Bethel, Maine) allowed summing up the data on the efficiency (average percentage of knowledge acquisition) of various teaching methods.

- organization of active cognitive activity of students and leaning on their personal experience;

- taking into account individual educational needs, health, provision of the ability to choose the kind of cognitive activity;

- comfortable conditions for disclosing, implementing, and developing the personal potential of students;

- assisting the creation of situations of success as a subjective personal experiencing one's personal achievements in the context of their lives and personal development (according to N.E. Shchurkova);

- interactivity and dialogueness, motivation to cooperation, joint activity of all subjects of learning;

- integratedness;

- reflexivity and censoriousness;

- creation of educational products as results of the student's activity, the content of which corresponds to the studied subject or educational field (according to A.V. Khutorskoy);

-application of information educational resources and electronic gadgets;

- focus on achieving high educational outcomes" [4, p. 34-35].

However, keeping in mind that the project is implemented on the premises of the children's association school forestry "Forest land", appealing to the interpretation of the concept "pedagogical technology" in the context of the activities of children's public organizations is no less important. This interpretation was provided by M.R. Miroshkina in her dissertation "Conditions of the efficient use of pedagogical technologies of children's organization "4-N". It says: "The organization "4-N" uses different types of pedagogical technologies that represent scientifically grounded algorithmic description of the conditions, content, forms and methods, and the structure of the activities aimed at achieving certain pedagogical aims.

The specific type of educational technology (solving certain pedagogical tasks, games, organizing and delivering public speeches and demonstrations, organizing the work of "4-N" club, recruitment and training of voluntary leaders for "4-N" programs, development of activity programs) is subject to pedagogical purpose. In turn, the purpose occupies a certain place in the overall hierarchy of aims of the organization. Algorithmic "stages" of educational technology of children's organization, such as aim setting, defining the starting conditions for activity, the system of gradual purposeful actions, tool support sequences of actions, the definition of achievable results, the analysis of the degree of achievement, adjustment of the technology, acquire specific realization in each of the above-mentioned pedagogical technologies" [7, pp. 7-8].

Keeping this in mind, one may assume that the core technology of the project is "educational quest". The relevance of using quests is obvious today. Education of new generation requires the use of activity-based technologies in the learning process. The studied technology from tits origin to the modern scientific and methodological aspects of its development in foreign and Russian science and practice is described in detail by E.A. Igumnova and I.V. Radetskaya in study guide "Quest technology in education" [4]. The authors developed the activity chart for the educational quest and gave recommendations for designing quests in the framework of the systemic and activity-based approaches. They also substantiated the position that quest technology is an independent educational technology.

The term "quest" as an educational technology was proposed in 1995 by Bernie Dodge, Professor of educational technologies at the University of San Diego. He called "quest" the site with the problematic taskthat involves an independent search of information on the Internet [5]. During the quest project, students perceive real-world processes and experience real situations. From the viewpoint of the information activities, the participant of the quest project requires the skills of searching, analyzing information, ability to store, transfer, compare, and synthesize new information on a basis of comparison.

Fulfilling the quest project, the students learn to formulate a problem, plan their activities, think critically, solve complex problems, considering pros and cons, make their own decisions, and take responsibility for the implementation of these decisions. Quest technology allows broading the mind, and actively putting into practice one's knowledge and skills. Participation in the quest project allows participants to develop such competencies as self-learning and self-organization (1); the ability to find numeral ways of resolving a problem situation to determine the most rational option, to justify personal choice (2); team work

(planning, distribution of tasks, mutual support, mutual control) (3); public speaking skills (4); communicative competency (5), functional competencies (specific skills) (6). During the implementation of the project "Quest technology as a means of popularizing the school forestries in Zabaykalsky Krai", a number of forms of quest technologies were used.

Quest of professional orientation and nature preservation "Forest, nature, creativity".

Aim: professional orientation of members of children's association school forestry "Forest country" for the profession of the forestry fire service under the municipal institution "Chitinskaya Base of Aviation Forest Air Protection". Currently, the air base provides the forest fire protection for Zabaikalsky Krai using aviation, carries out the monitoring and extinguishing fires in difficult conditions and delivers the groups to the fire by landing and drop landing. On the site, the participants may try on knapsack fire extinguishers and study special equipment for firefighting.

Site "Let's warn forest fire": the development of an action plan for preventing forest fires, raising public awareness about the need to observe fire safety and fire prevention regime.

Site "Seeing fire from space": analysis of the provided marginal notes on the Layout of the Control Areas in Zabaykalsky Krai, created in a computer software of regional geographic information system.

The site "We are the firefighters of the Baikal region" was arranged on the simulator tower for training jumps and landings of paratroopers and parachute jumpers-firemen. According to the legend, the children should be "stationed" in the area of simulated forest fire and to extinguish it. The acquired competencies include 2. (the ability to find numerous ways of solving problem situations, to determine the most sustainable option, to justify their choice); 3. (teamwork (planning, distributing tasks, mutual support, mutual control); 4 (public speaking skills); 5. communicative competency; 6. (functional competencies).

Interactive electronic resource-based quest

"The forest from the eyes of a scientist within the subject areas".

Interactive electronic resource-based quest "The forest from the eyes of a scientist within the subject areas" - the theoretical stage of the quest for the members of the school forestry "Forest land". The technology of interactive game "The Forest from the eyes of a scientist" is based on the TV game "Svoya igra" (analogue of "Jeopardy!" - translator's note) using modern educational technologies: gaming, information and communication, educational questions. An interactive game developed was with the software program "SImulator" for playing "Svoya igra" using the projector. The software reproduces the interface of the original TV show, including music and animation. The players are asked special questions, images, audio and video questions. The software uses a question files in the .sig format, which can be prepared using the question editor SI on one's own. The main goal of the participants is answering the questions to score as many points as possible by the end of a game. The game consists of two main and one final lap. Each lap consists of 20 questions – 4 topics of 5 questions each; the price of a question varies from 100 to 500 points. The higher is the price, the more challenging is the question. The final lap consists of 5 topics to choose from. The teams take turns (in ascending order of the sums on team account) in removing the topics they dislike, until there is one topic left. The players make their bets, and then they hear the question. The winner is the team that scored the highest points by the end of a game. The

game develops competencies like teamwork (planning, distributing tasks, mutual support, mutual control) (3), public speaking skills (4), and communicative competencies (5).

Quest-competition of individual campaigns and school propaganda teams "For the sake of nature of Zabaikalsky Krai".

This quest develops the following competencies: 2. – teamwork (planning, distributing tasks, mutual help, and mutual control); 4. – public speaking skills; 5. communicative competencies, 6. –functional competencies.

Nature preservation quest "Meet the reservation Transbaikalia"

Ecological and patriotic festival "Reservation Transbaikalia: Sokhondo Nature Reserve, national parks Alkhanay and Chikoy" [2]. It involves passing eight sites, where the participants face the problems of waste disposal and learn to making paper cranes, test their knowledge in biology, physics, forestry, medicinal herbs and berries, develop a plan of measures to prevent ecological disaster, and they collect ecological board "Veil of friendship". The quest contributes to the development of skills of teamwork (planning, distributing tasks, mutual support, mutual control), public speaking (4); communicative competency (5), functional competencies (specific skills) (6).

Campaign quest "Live, little fir-tree".

The participants of the green movement go to the city streets and give people the leaflets, drawings and booklets with an appeal not to cut down live trees, but to decorate artificial Christmas trees. Development of competencies: 1. – self-learning and self-organization; 2. – the ability to find several ways of resolving a problem situation, to choose the best option, to give reasons to this choice; 3. – teamwork; 4. – public speaking, communicative (5) and functional competencies (6).

Credit-quest "Good deeds in favor of the forest".

Summing up a the children's public association school forestry "Forest land". Legend of the credit-quest: the aliens from two galaxies come to Earth and appeal to children. They are very concerned about the fire hazard situation on Earth: the current state may result in smoke in their galaxies and the violation of the ecological balance in the Universe. They landed in different parts of the city, got lost and had to ask help from young foresters. Only through completing the tasks at the sites consistently, can students discover the alien shuttles and help them return home. When moving from one site to another, the teams fulfil the tasks related to the activities of the school forestry. Each task was to be fulfilled in 5 minutes. Performing creative tasks involve mastering the competences acquired by the children during the implementation of the activity programs of the school forestry "Forest land": self-organization (1); teamwork (planning, distributing tasks, mutual support, mutual control) (3); public speaking (4); communicative competency (5), functional competencies (specific skills) (6).

Eco-quest "Green life hack".

The subject of eco-quest is crafts and ideas for non-standard household use of various items of junk and natural materials. Competencies: teamwork (planning, distributing tasks, mutual support, mutual control) (3); public speaking (4); communicative competency (5), functional competencies (specific skills) (6).

"Landing quest" as an educational technology.

The aim of the landing quest is to facilitate the effective organization of professional self-determination of youth through quest technology.

Task of the landing quest:

– assisting young people in professional self-determination;

– professional orientation on forestry, ecological, natural science and nature preservation activities;

– professional education that takes into account trends in the regional labor market;

– the formation of motivated professional intentions in youth;

– the formation of the ability to express and defend their social position, to critically evaluate their intentions, thoughts and actions;

– diagnostics of professional inclinations and ideas about the professional abilities in youth.

The levels of technology implementation, approved by the developers were municipal and regional.

The specifics of the landing quest

The presence of trained, mobile group of specialists, each of which was a carrier of information in separate thematic sites. The algorithm of the site was subject to problem behavior from problem statements to solutions in a short, limited period of time. The team of the landing quest was specially trained for rapid change of place and succession of the sites. While holding seminars on designing educational quests, the authors and developers of the technology constantly drew attention to the organization of the participants moving through the sites – selecting logic and sequence of the plot, the coherence logic of the selected plot with the sequence of receipt or disclosure of information for the solution of the main quest tasks.

- the organization and selection of logic of the movement not for children, but for moderators themselves;

- the selection of the separate sites (according to the topic, content and tasks) in integral and complete quest. The best timing for the landing quest is 40 minutes (4-6 sites, about 10 to 6.5 minutes for each)

- change of a site moderator is carries out without delays and loss of time, which allows the participants to perceive everything as the switch frame that corresponds to the perception of the reality of modern children with their mosaic thinking

- compliance of the number of moderators involved in the landing quest with the maximum number of sites;

- the variability of technology. The organizers are offered at least two versions of the landing quest: the option to increase the number of sites, where the quest is held simultaneously, or to aggravate the content of one quest with the performance of a greater number of moderators. For example, if the landing quest requires twelve moderators, it is possible to simultaneously arrange either three quests with the different content that will be implemented by four moderators, or two quests that will be implemented by six moderators, etc.

Landing quest "Forest, nature, creativity."

The landing quest aimed at facilitating the choice of future profession – a professional orientation to the profession of forestry, areas of ecological, natural science and nature preservation activities. The selection of sites is the creative initiative of the developers and organizers.

Methods for determining the project performance

The performance of the project was determined by

1) the statistical methods, including a survey of participants, the analysis of publication activity of the printed and electronic media on the project;

2) qualitative methods:

- a description of the methodology of the conducted project activities;

- content analysis of the records in the "Green notebooks" of project participant to determine the results of the project in terms of a personal assessment of its participants.

The main goal of the content analysis here is to identify the most significant merits of the project and a statement of failed positions from the point of view of student of the.

The object of study was the content of project activities from the student's points of view.

The subject of study was the priority areas for improving the school forestry movement of Zabaikalsky Krai.

The Notebook presents all the activities carried out in the framework of the project and provides a space for describing the student's experience – description of the activities, icons to define the relationship to the event, a line for suggestions.

3. RESULTS AND DISCUSSION

1070 people from nine educational institutions of the city of Chita took part in a sociological survey on the results of the project: school No. 23 – 168 people; school No. 17 – 187 people; school No. 25 - 231 people; school No. 16 – 84 people; school No. 51 – 59 people; school No. 7 – 37 people; school No. 11 – 120 people; school No. 36 – 82 people; school No. 40 – 102 people.

The co-organizers of the project were: The Transbaikal branch of RGO "Russian Geographical Society"; Branch of the federal state-funded institution "Roslesozashchita" - "Center for forest protection of Zabaikalsky Krai"; The Ministry of Natural Resources of Zabaikalsky Krai; Committee of education of administration of city district "Gorod Chita"; Transbaikal State University; Chita Polytechnic College.

The project resulted in issuing more than 70 publications in printed and electronic media, a series of video stories on the federal channel, and also in preparing a documentary film on the activities of school forestries in Zabaikalsky Krai.

Quest of professional orientation and nature preservation "Forest, nature, creativity".

More than 100 people participated in the quest: they were students, parents, educators and teachers, social partners, the air base staff, project team, and media.

Interactive electronic resource-based quest

"The forest from the eyes of a scientist within the subject areas".

Quest held on the premises of municipal budgetary institution of additional education "Center of children and youth tourism and local studies" on 7th May, 2018.

The practical stage was on 8th May 2018 on the premises of Transbaikal Botanical garden.

The theoretical and practical stages of the interactive electronic resource-based quest "The forest from the eyes of a scientist within the subject areas" were attended by 102 people.

Quest-competition of individual campaigns and school propaganda teams "For the sake of nature of Zabaikalsky Krai".

Over 290 people participated in the quest-competition of individual campaigns and school propaganda teams "For the sake of the nature of Transbaikalia". They had their own initiatives in the development of nature preservation skills – 10 school propaganda teams, individual participants, fans, social partners, teachers, and parents.

One of the qualitative social effects of this event is the initiative of the project participants from the school No. 17 on the integration of urban activities of the school forestries in the framework of the "Veil of Friendship of school forestries". On the basis of self-organization of children and adults (teachers and parents), the project participants prepared a video clip which was presented on the website of the Transbaikal branch of the RGO "Russian Geographical Society".

Nature preservation quest

"Meet reserved Transbaikalia" as a site of ecological and patriotic festival "Reserved Transbaikalia: Sokhondo Nature Reserve, national parks Alkhanay and Chikoy".

Ecological and patriotic festival "Reservation Transbaikalia: Sokhondo Nature Reserve, national parks Alkhanay and Chikoy" was held in the framework of the regional action "Protecting nature means love to the Motherland" for pupils of 5-11 grades of Chita schools on 20th April 2018 [2]. The idea of ecological board "Veil of Friendship", a symbol of the unity of children's associations in nature preservation, was initiated by the members of the school forestry "Forest watch", school № 17, Chita.

Children from 9 schools of the city presented their "Veils of Friendship", which were sewn into one big board during the Festival.

Campaign quest "Live, little fir-tree".

The campaign quest resulted in attracting the attention of the public, children, adolescents and their parents to the problem of the unauthorized felling of coniferous trees in the New Year and Christmas period, the formation of ecological culture, careful attitude to the nature of the native land, as well as the development of creative potential in children.

Credit-quest "Good deeds in favor of the forest".

Creative project credit-quest "Good deeds in favor of the forest" summed up work of the children's public association school forestry "Forest land" in the 2017/2018 academic year.

Eco-quest "Green life hack".

350 people from 8 educational institutions in Zabaikalsky Krai took part in the eco-quest. The results of the contest were announced in four categories: 1. Age group grades from 1 to 4. 2. Age group grades 5 to 8. 3. Age group grades 9 to 11. 4. Children with disabilities. The social partners, children, teachers, and parents attended awards ceremony. The DIY crafts

were exhibited in the hall of the Center of tourism and local history of Chita, where all the guests could see them. The crafts were made of a diversity of the material: disposable tableware, plastic packaging, polystyrene, polyethylene.

Landing quest "Forest, nature, creativity."

The participants were students of grades 8-11 of school No. 23 of mine Kaden, secondary school No. 17 of Chita, and secondary school No. 25 of Chita. As a result of passing the site "Unique geographical position of Zabaykalsky Krai", the participants identified a link between the remoteness of the Transbaikal from the ocean (inland position) and geographical image of the region. The site "In the footsteps of researchers of the Transbaikal nature" allowed the participants region to identify the toponyms (place names) relevant to the discoveries of the Baikal region according to the physical-geographical map of Zabaikalsky Krai, to know the history of the development of the Transbaikal nature, modern regional discoveries, for example, the findings of Transbaikal dinosaurs.

When passing the site "Profession of a lifetime – to protect the forest", the participants discovered the oldest professions in forestry (many of them had already disappeared) and those that may appear in the near future. They also knew about the rare profession - forest pathologist engineer, which combines elements of the profession of a forester, entomologist, engineer, geographer, chemist, and phytopathologist. Forest pathologist is a kind of "forest doctor" who not only make a correct diagnosis, but also is responsible for the health of the "lungs of the planet"; they make a major contribution to the preservation and augmentation of forest resources of Russia. The site "Protected natural areas of Zabaikalsky Krai" informed the students about the number, conservation status and features of protected natural areas within Zabaikalsky Krai by searching for the answer to the problematic question. Children used the map of specially protected natural areas of Zabaikalsky Krai, learned to identify the landscape features of these areas and their specificity.

Personal results achieved by project participants as reflected in their "Green notebooks" are quite precise:

- the acquisition of new knowledge about geographic and climatic factors of the region, affecting the features of growth of tree species and plants of Transbaikal forests and their inhabitants,

- the ability to determine the species, height, and age of trees;

- the acquisition of proto-professional skills (they precede the basic professional skills) on the occupations of forester, engineer forest pathologist, fireman, woodgrower, entomologist, geographer, chemist, phytopathologist.

The most important qualitative result was the initiative of Chita Polytechnic College to support the project in terms of professional orientation of young people of Transbaikalia. Recently, the legal support of childhood that defines the legal framework of modern education has significantly expanded in Russia. Citing the Decree of the President of the Russian Federation from 1st June, 2012 No. 761 "On national strategy of actions in interests of children for 2012 2017" [29], the Federal law "On education in the Russian Federation" No. 273-FZ of 29th December, 2012 [32], the order of the Government of the Russian Federation from 29th May, 2015 No. 996-p "Strategy of development of education in the Russian Federation for the period till 2025" [20], the Decree of the President of the Russian Federation of 29th October, 2015 No. 536 "On the establishment of the all-Russian public youth organization "Russian movement of school students"[28], the Decree of the President of the

Russian Federation from 29th May, 2017 No. 240 "On declaring the Decade of childhood in the Russian Federation" [27] will be quite sufficient.

The characteristic time marker is the revival of many organizational-pedagogical forms of educational and extracurricular work with children, which have existed in former USSR, and now they are acquiring new, modern sound. Youth military-sports game "Zarnitsa" was given a modern incarnation in the Russian youth movement "Yunarmiya", created on the initiative of the Minister of Defence of Russia Sergey Shoygu. The main purpose of "Yunarmiya" is to promote the integrated development and patriotic education of Russian citizens aged 8 years and older [11].

Children's public organization "Russian movement of school students," created by special Decree of the Russian President Vladimir Putin [28] is a modern reincarnation of the All-Union pioneer organization named after V. I. Lenin. The international children's center "Artek" once again became the all-Russia health resort and source of the latest educational technologies [6]. The Movement of the school forestries is now experiencing revival. The Russian children's center "Orlenok" lauched a new tradition: to hold general developmental program of natural-scientific orientation "All-Russian convent of school forestries "Lesnoy podrost", which collects the winners of the regional stage of all-Russian junior forest competition "Podrost" [18, 25]. There also is an all-Russian extramural competition "The best school forestry" and regional meetings of school forestries. The Ministry of Natural Resources of Russia with the Ministry of Education and Science of Russia and the Federal Forestry Agency has developed an action plan for the development of the school forestries movement for 2018–2027 [15].

The major challenge was the problem of training specialists for the forestry sector, which is not so attractive for young people if compared to technological breakthroughs and life prospects in the IT industry, public service, and business. The solution of this problem is facilitated by the school forestries movement. However, given that children and teenagers of the late XXI century live in a different social, technological and information environment, experts and researchers in education and further education seek a newcontent for the old forms, new educational technology, in tune with the cultural code of modern generations [23, 24]. The project results prove that the use of modern educational technologies in school forestries contribute to the growth of their attractiveness to children and adolescents, which in the future can become a basis for the actualization of professional activities related to the development of the forestry service in Russia.

4. CONCLUSIONS

The subject of this paper was a review of the quest technology as a means of promoting the school forestries in Zabaikalsky Krai, and therefore, considering them as forms of organizing vocational guidance work in the forestry sector. Following on from the international and Russian practice, the authors discuss different forms of implementing quest technologies: quest of professional orientation and nature preservation character; interactive electronic resource-based quest; quest-competition; nature preservation quest; campaign quest; credit-quest; eco-quest; discussion quest. The landing quest is an innovative quest technology in this paper. This algorithmic “stage” of this technology is goal setting, defining starting conditions of activity, the system of step-by-step deliberate actions, tool support sequences of actions, the definition of achievable results, and the analysis of the degree of achieving the result. The study describes the actual application of this technology in teaching practice, particularly in career guidance. The presented quest technologies are universal and can be used in the educational process of compulsory and additional education, children's

wellness centers and camps, in children's public associations and youth clubs. The development of technologies for a reliable evaluation of the quest technologies efficiency in career guidance should be the subject of further research.

REFERENCES

[1] Vladimir Region. Forest patrol [Vladimirskaya oblast'. Lesnoy patrul'] (n.d.). URL:http://2018.shkolnie-lesnichestva.ru/sites/default/files/uploads/docs/opyt_nesterova_e.a.pdf.

[2] RGO "Russian Geographical Society. Transbaikal branch. Transbaikal festival of natural reserves in Chita [VOO «Russkoe geograficheskoe obshchestvo» Zabaykal'skoe otdelenie. Zapovednyy festival' v Chite] (n.d.). URL: https://www.rgo.ru/ru/article/zapovednyy-festival-v-chite.

[3] Igumnova, E.A. & Radetskaya, I.V. (2016). Quest-technology in the context of the requirements of the FSES of general education [Kvest-tekhnologiya v kontekste trebovaniy FGOS obshchego obrazovaniya]. Sovremennye problemy nauki i obrazovaniya, 6. DOI: 10.17513 / spno.25517**.** URL: https://www.science-education.ru/ru/article/view?id=25517.

[4] Igumnova, E.A. & Radetskaya, I.V. (2016). Quest-technology in education. Study guide for students of higher and secondary educational institutions [Kvest-tekhnologiya v obrazovanii. Uchebnoe posobie dlya studentov vyssh. i sred. uchebnykh zavedeniy]. Zabaykal. gos. un-t, Chita, 184p.

[5] Igumnova, E.A. & Radetskaya, I.V. (2016). Designing an educational quest on the basis of a flowchart [Proektirovanie obrazovatel'nogo kvesta na osnove tekhnologicheskoy karty]. Biologiya v shkole, 6, 31-40.

[6] International children's center «Artek». URL: https://artek.org.

[7] Miroshkina, M.R. (2005). Conditions for the efficient use of pedagogical technologies of children's organization "4-N" [Usloviya effektivnogo primeneniya pedagogicheskikh tekhnologiy detskoy organizatsii «4-N»]. Candidate dissertation: pedagogical sciences. Institut Molodezhi, Moscow, 7-8.

[8] Miroshkina, M.R. (2016). Challenges and contradictions in modern pedagogy [Vyzovy i protivorechiya sovremennoy pedagogiki]. Aktual'nye problemy obrazovaniya i nauki: traditsii i perspektivy: proceedings of the Int. research and practice conf. dedicated to 55 anniversary of the Institute of preschool education and the 110th anniversary of Zaporozhets A.V. Institut izucheniya detstva, sem'i i vospitaniya Rossiyskoy akademii obrazovaniya, 306-310. URL: https://elibrary.ru/item.asp?id=27561177.

[9] Nesterova, A.A. (2012). Education of preschool children in the interests of sustainable social development [Obrazovanie doshkol'nikov v interesakh ustoychivogo razvitiya obshchestva]. Diskussiya,12. URL: https://cyberleninka.ru/article/n/obrazovanie-doshkolnikov-v-interesah-ustoychivogo-razvitiya-obschestva.

[10] Nesterova, E.A. (n.d.). Formation of the research competency in pupils of school forestry by means of geoecological local studies (from the experience of school forestry "Forest patrol") [Formirovanie issledovatel'skoy kompetentnosti vospitannikov shkol'nogo lesnichestva sredstvami geoekologicheskogo kraevedeniya (iz opyta raboty shkol'nogo lesnichestva «Lesnoy patrul'»)]. URL: http://2018.shkolnie-

lesnichestva.ru/programs/shkolnye-lesnichestva-prostranstvo-vozmozhnostey-dopolnitelnogo-estestvennonauchnogo-22.

[11] On "Yunarmiya". URL: https://yunarmy.ru/about.

[12] Fundamentals of state policy in the field of environmental development of the Russian Federation for the period until 2030 (approved by the President of the Russian Federation on 30.04.2012) [Osnovy gosudarstvennoy politiki v oblasti ekologicheskogo razvitiya Rossiyskoy Federatsii na period do 2030 goda (utv. Prezidentom RF 30.04.2012)] (n.d.). URL: http://www.consultant.ru/document/cons_doc_LAW_129117/.

[13] Plan of measures for the development of the school forestries movement for 2018-2027 [Plan meropriyatiy po razvitiyu dvizheniya shkol'nykh lesnichestv na 2018–2027 gody] (n.d.). URL: https://ipravo.info/russia2/act20/947.htm

[14] Order of the Zabaikalsky Krai Government, № 673-r October 20, 2009 (2009). URL: http://docs.cntd.ru/document/922221315.

[15] Order of the Ministry of Education and Science of the Russian Federation No. 373 from October 6, 2009, No. 1897December 17, 2010 (2009, 2010). URL: http://alarsk.alaredu.ru/ files / fgos_noo.pdf.

[16] Order of the Ministry of Education and Science of the Russian Federation from October 17, 2013 No. 1155 (2013). URL: http://izo.tom.ru/index.php/dokumenty/85-fgos-dou-poslednyaya- redaktsiya.

[17] Order of the Ministry of Education and Science of the Russian Federation of December 17, 2010 No. 1897 (2010). URL: http://base.garant.ru/55170507/.

[18] The profile session for young activists of school forestries "Lesnoy podrost" ended in "Orlyonok"[Profil'naya smena dlya yunykh aktivistov shkol'nykh lesnichestv «Lesnoy Podrost» proshla v «Orlyonke»] (n.d.). URL: http://ecoyear.ru/2017/07/profilnaya-smena-dlya-yunyh-aktivistov-shkolnyh-lesnichestv-lesnoj-podrost-proshla-v-orlyonke/.

[19] Radetskaya, I.V., Manikovskaya, O.V. & Nikolayuk, A.E. (2017). Research on of the value attitude to nature in high school students [Issledovaniye tsennostnogo otnosheniya k prirode u starsheklassnikov]. Problemy sovremennogo pedagogicheskogo obrazovaniya, 54-4, 125-133.

[20] Order of the Government of the Russian Federation of 29.05.2015 N 996-r (2015). URL: https://rg.ru/2015/06/08/vospitanie-dok.html.

[21] Order of the Government of the Russian Federation of 04.09.2014 N 1726-r (2014). URL: http://legalacts.ru/doc/rasporjazhenie-pravitelstva-rf-ot-04092014-n-1726-r/.

[22] The Russian version of the world-famous TV game show "Jeopardy!" (n.d.). URL: https://ru.wikipedia.org/wiki/Своя_игра.

[23] Savina, T.V. & Kabernyuk, T.P. (2016). Formation of the ecological competency in students through practical activities in school forestry in rural school conditions [Formirovanie ekologicheskoy kompetentsii obuchayushchikhsya posredstvom prakticheskoy deyatel'nosti v shkol'nom lesnichestve v usloviyakh sel'skoy shkoly]. Aspekty i tendentsii pedagogicheskoy nauki: proceedings of the I Int. scientific conf., Saint Petersburg, December, 2016. Saint Petersburg: Svoe izdatel'stvo, 23-26. URL https://moluch.ru/conf/ped/archive/209/11496/.

[24] Sementinov, E.V. & Akhayan, A.A. (2014). On the problem of researching the opportunities of web-quest technology for the development of cognitive interest and activity in students [O probleme issledovaniya vozmozhnostey tekhnologii «veb-kvest» po razvitiyu poznavatel'nogo interesa i aktivnosti uchashchikhsya]. Pis'ma v Emissiya. Offlayn: elektronnyy nauchnyy zhurnal, 5, 2205.

[25] Thematic additional general development program of the natural science orientation "All-Russian meeting of school forestries "Lesnoy podrost". URL: http://1.orlyonok.ru/2018/7smlp.pdf.

[26] Decree of the President of the Russian Federation of 12.05.2009 No. 537 (2009). URL: https://rg.ru/2009/05/19/strategia-dok.html.

[27] Decree of the President of the Russian Federation of 29.05.2017 No. 240 (2017). URL: https://rg.ru/2017/05/29/prezident-ukaz240-site-dok.html.

[28] Decree of the President of the Russian Federation No. 536 of 29.10.2015 (2015). URL: http://www.kremlin.ru/acts/bank/40137.

[29] Decree of the President of the Russian Federation of 01.06.2018 No. 761 (2018). URL: http://base.garant.ru/70183566/.

[30] Fattakhova, G.A. (2012). Electronic educational resource "School of a young forest grower" as the main tool for teaching school forestry members [Elektronnyy obrazovatel'nyy resurs «Shkola yunogo lesovoda» kak osnovnoy instrument obucheniya chlenov shkol'nogo lesnichestva]. Sovremennye informatsionnye tekhnologii i IT-obrazovanie, 8. URL: https://cyberleninka.ru/article/n/elektronnyy-obrazovatelnyy-resurs-shkola-yunogo-lesovoda-kak-osnovnoy-instrument- obucheniya-chlenov-shkolnogo-lesnichestva.

[31] Order of Federal Forestry Agency from 16.04.2012 No. 145 (2012). URL: https://docplayer.ru/38941929-Programma-razvitiya-dvizheniya-shkolnyh-lesnichestv.html.

[32] Federal Law No. 273-FZ of 29.12.2012 (2012). URL: http://zakon-ob-obrazovanii.ru.

[33] Khusainov, Z.A. (2006). Conceptual bases of forming the ecological culture in school students: ethnopedagogical aspect [Kontseptual'nye osnovy formirovaniya ekologicheskoy kul'tury shkol'nikov: etnopedagogicheskiy aspekt]. Doctoral dissertation: pedagogical sciences. GOU VPO «Tatarskiy gosudarstvennyy gumanitarno-pedagogicheskiy universitet», Kazan, 275-292. URL: http://dslib.net/api/download/?id=1271745991&key=SBg2aNTcicgJEls4.

[35] Center for Forest Economy and Nature Management (n.d.). URL: https://centreconomles.livejournal.com/22739.html.