



Применение веб-ресурса с элементами ролевой компьютерной игры для поддержки патриотического воспитания школьников в условиях дополнительного образования

Е. В. СОБОЛЕВА, Т. Н. СУВОРОВА, Т. В. МАШАРОВА, Е. В. РАЗОВА

АННОТАЦИЯ

Проблема и цель. Адаптация методов патриотического воспитания к новым реалиям цифровой эпохи для эффективного формирования патриотических чувств и ценностей у молодого поколения – важное направление государственной политики. Происходит интеграция цифровых технологий в патриотические проекты (игры, соревнования) для повышения мотивации участников. Цель работы – выявить возможности применения веб-ресурса с элементами ролевой компьютерной игры для поддержки патриотического воспитания школьников в условиях дополнительного образования.

Методы исследования. Патриотизм рассматривается авторами как качество личности, характеризующее осознание связи человека со своим народом, родным краем и культурной информационной средой. В эксперименте задействовано 68 учеников «Школы программирования и робототехники» г. Кирова (Российская Федерация). Содержание и игровые механики веб-ресурса спроектированы в соответствии с историко-патриотическими мероприятиями области. Язык программирования JavaScript поддерживает техническую реализацию интерактивных компонентов интерфейса образовательного приложения. Для оценки эффективности информационного взаимодействия применена «Системная методика изучения патриотического воспитания» (автор – И.Д. Лушников). При статистической обработке данных использован критерий χ^2 -Пирсона.

Результаты. Особенности предлагаемого варианта взаимодействия: акцент на активных гражданско-патриотических практиках; сотрудничество и информационный обмен; учёт принципов устойчивого развития мира, общего управления, сохранения глобальных общественных благ и цифровых прав. Обучающиеся экспериментальной группы виртуально перемещаются по измерениям игрового мира и выполняют задачи, предполагающие применение ценностно-патриотических знаний, классификацию и характеристику патриотического смысла фактов / явлений, прогнозирование собственного поведения. Выявлены статистически достоверные различия в качественных изменениях, произошедших в педагогической системе ($\chi^2 = 7,033$; $p < 0,05$).

Заключение. Определены факторы, влияющие на эффективность применения веб-ресурса с элементами ролевой компьютерной игры: интерактивность, подключение разнообразных каналов передачи данных, «мгновенное» перемещение во времени и пространстве и виртуальная связь поколений, «игрофикация» важных общественных событий и явлений.

КЛЮЧЕВЫЕ СЛОВА

патриотизм, геймификация, информационное взаимодействие, образовательное приложение, игровые механики, интерактивность, JavaScript

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Лицензия «С указанием авторства — С сохранением условий». Позволяет перерабатывать, исправлять и развивать произведения при условии указания авторства и лицензирования производных работ на аналогичных условиях.



Using a web resource with elements of a computer role-playing game to support patriotic education of schoolchildren in conditions of additional education

E. V. SOBOLEVA, T. N. SUVOROVA, T. V. MASHAROVA, E. V. RAZOVA

ABSTRACT

The problem and the purpose. Adapting the methods of patriotic education to the new realities of the digital age for the effective formation of patriotic feelings and values among the younger generation is an important area of public policy. There is an integration of digital technologies into patriotic projects (games, competitions) to increase the motivation of participants. *The purpose of the work* is to identify the possibilities of using a web resource with elements of a computer role-playing game to support patriotic education of schoolchildren in conditions of additional education.

Research methods. Patriotism is considered by the authors as a personality quality that characterizes a person's awareness of their connection with their people, native land and cultural information environment. 68 students of the Kirov School of Programming and Robotics (Russian Federation) were involved in the experiment. The content and game mechanics of the web resource were designed in accordance with the historical and patriotic events of the region. The JavaScript programming language supported the technical implementation of interactive components of the educational application interface. The "Systematic methodology for studying patriotic education" (the author – I. D. Lushnikov) was applied to assess the effectiveness of information interaction. In statistical data processing, the Pearson's chi-squared test was used.

Results. Features of the proposed interaction option: emphasis on active civic and patriotic practices; cooperation and information exchange; considering the principles of sustainable development of the world, general governance, preservation of global public goods and digital rights. The students of the experimental group virtually moved in the dimensions of the game world and performed tasks involving the application of value-patriotic knowledge, classification and characterization of the patriotic meaning of facts / phenomena, forecasting their own behavior. Statistically significant differences were revealed in the qualitative changes that occurred in the pedagogical system ($\chi^2 = 7.033$; $p < 0.05$).

Conclusion. The factors influencing the effectiveness of using a web resource with elements of a computer role-playing game elements were identified: interactivity; using various data transfer channels; "momentary" movement in time and space and virtual communication of generations; "gamification" of important social events and phenomena.

KEYWORDS

patriotism, gamification, information interaction, educational application, game mechanics, interactivity, JavaScript

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INTRODUCTION

The key principle in the UN Charter proclaims sovereign equality of all states, and this is the basic provision that guides the organization's activities. According to the UN chairman, every measure to maintain security and human rights "contributes to sustainable development and peace" [1]. The organization's experts emphasize that in the 21st century it is necessary to pay special attention to the duty of member States of the international community to develop and promote respect for human rights and fundamental freedoms for all. However, there are also opinions that "inequality is growing rapidly" [2].

The UNESCO Network of Associated Schools, embodying the principles of the United Nations and the Universal Declaration of Human Rights, annually holds game events dedicated to the patriotic education of young people [3]. For example, the National Internet game under the auspices of UNESCO is "Our Heritage". The background for its design was the need to involve young people in studying and preserving World Natural and Cultural Heritage sites. In the space of online gaming interaction, the participants: study world heritage sites; develop a personal attitude to the problems of preserving World Heritage Sites; develop skills of network communication, search for information and its critical assessment for decision-making. All game actions are implemented and subsequently analyzed in the context of participants' pride in their country and understanding of its role in world history.

Another example is the international relaunch of the Open Education Policy game. It is conducted by the UNESCO Chair on Distance Education [4]. Originally created in 2018, this social technology has been updated to include the 2019 UNESCO Recommendations on Open Educational Resources. Since its inception, the Game has been an important tool for the joint diagnosis and implementation of an open educational policy in institutions seeking to democratize knowledge. The modification of the Game focuses on open practices, collaboration, sustainability, shared governance, public digital goods and digital rights. The All-Russian project "GenerationNext"-2024 is aimed at attracting the attention of schoolchildren of general education organizations to preserving the UNESCO heritage, fostering tolerance culture, national self-respect through learning the culture of Russian regions, the traditions of other countries [3].

The projects described above confirm the potential of gamification and specifically video games with elements of a computer role-playing game (here and after – RPG elements), identified by V. Marino Carvalho, in terms of forming a person's feeling of love for their people, pride in social and cultural achievements, and interest in the historical fate of their country [5].

However, not all students have an opportunity to receive timely information about such large-scale ongoing and planned events at the regional, national and global levels or to take part in them. At the same time, achieving goals and objectives of patriotic education of children, specified in the Federal Project "Patriotic Education" of the National project "Education", planned for implementation by the end of 2026, involves active development of additional education programs. E. V. Soboleva et al. reveal the possibilities of the system of additional education on the example of organizing the work with interactive timelines to develop students' abilities to perceive and understand emotions, use them to stimulate thinking and creative activity [6]. V. Adolf et al. analyze the pedagogical, psychological and social opportunities provided by the organization of additional education in a digital environment, describe the options for using digital environments in traditional offline classes, as well as in organizing fully digital forms of classes [7].

It should be noted that most studies reveal a constantly replenishing set of qualitative characteristics of the digital educational environment affecting the results of the didactic process, in particular, in terms of formed spiritual and moral values, which are the basis of patriotism. Thus, there is an objective need to study the aspects of including gamification resources in additional education programs to support patriotic education of schoolchildren.

The hypothesis of the research is that using resources with elements of a computer role-playing game in the system of additional education for schoolchildren will provide qualitatively new opportunities for implementing ideas of patriotic education.

The purpose of the work is to identify the possibilities of using web resources with RPG elements to support patriotic education of schoolchildren in conditions of additional education.

Research objectives:

- to clarify the problems and possibilities of using gamification services in the system of additional education of schoolchildren to support patriotic education;
- to develop and implement a project on using a resource with elements of a computer role-playing game in the system of additional education for schoolchildren to implement the ideas of patriotic education;
- to identify the factors influencing the quality of using the digital resource, both in the context of patriotic education of young people, and for implementing global goals for sustainable development and peace;
- to test the effectiveness of the proposed game practice experimentally.

MATERIALS AND METHODS

Patriotic education is a system of coordinated and purposeful activities, including the work of public authorities, civil society institutions and the family to form a sense of patriotism among citizens. Patriotism in the author's interpretation is a personality quality that characterizes the awareness of connection with the native people, genetic roots, native land and cultural information environment.

RPG (role-playing game) is a computer game in which the hero moves through space, gets acquainted with non-player characters, performs quest tasks, solves puzzles, and receives experience points and valuable items as a result of adventures. "Generation 6.5.0" – web resource is an information system that uses programming languages, frameworks, databases, protocols and other tools at the level of presentation and transmission of information.

At the stage of checking the effectiveness of students' work in the space of a web resource with elements of a computer role-playing game in the system of additional education, questionnaires from the "Systematic methodology for studying patriotic education" (the author – I. D. Lushnikov) are used to implement the ideas of patriotic education. The principles that guided the author in developing the methodology are as follows: consistency; division of schoolchildren for questioning by age groups (fourth, ninth, eleventh grades); accessibility of information, the content of values, questions and tasks for perceiving and understanding by children of a certain age; consistent complication of the values content with the age of respondents; limited questionnaire time (no more than 25-30 minutes) and simple presentation of the norms of subsequent interpretation.

The experiment involved 68 participants of the "School of Programming and Robotics", operating on the basis of the college of Vyatka State University. The work with the web resource "Generation 6.5.0", which includes RPG elements, was carried out during the IT holidays (the second week of the shift classes in 2024). The average age of participants in the School of Programming and Robotics was 14 years old (48% – girls, 52% – boys).

The reasons for the research team's choice of I. D. Lushnikov's methodology are: a clear structure, compliance with current regulations in the field of patriotic education and additional education, time regulations, and availability of a clear table for interpreting the answers for each section. Each age group was asked 21 questions. These were 84 situations to choose from (7 social spheres, 3 questions in each, 4 answers to each question). Spheres of social communication included family, people, native land, Motherland, society, state, peoples of the world. Based on the analysis of the experiment participants' responses according to the questionnaires of the I. D. Lushnikov methodology, control and experimental groups were formed. The levels of formation of patriotic personality traits: high, medium, low. The distribution by levels and their interpretation are presented in the program and the results of the research. In statistical data processing, the Pearson's chi-squared test was used.

LITERATURE REVIEW

As P. Pivnenko and N. Vitenko conclude, patriotism is an all-pervading political force. However, little is known about how people understand what it means to be a "patriot" [8]. S. Malkoç, F. Öztürk note that patriotic education has always been given special attention as a civic virtue. In Turkey, this direction has been implemented since 1913, when a special training course was introduced. Patriotism, as a feeling of affection and devotion to one's country, according to the authors, can be developed and strengthened through education and the values that it inspires. S. Malkoç and F. Öztürk come to the conclusion that in the modern world, where there are many intertwined cultures and ideologies, educational values can become the basis for the formation of patriotism as a conscious choice, and not just the result of external influence [9].

In accordance with the amendments made to the Federal Law "On Education in the Russian Federation", the following directions of educational work were added in the conception "education": "forming students' feelings of patriotism, citizenship, preserving the memory to defenders of the Motherland and the deeds of the Motherland Heroes, law and order, human labor and supergeneration, mutual democracy, respect for the cultural heritage and traditions of the people, nature and the environment" [10].

Patriotism is considered by R. Parma as one of the ambiguous concepts of modern science and political practice, which is characterized by a variety of interpretations in both scientific and everyday discourse [11]. Patriotism is devotion to the Motherland, which is based on the conscious responsibility of a person for the fate of the country, its people. And this devotion is further embodied in personal practical activities for the benefit of the Motherland. P. König describes approaches to defining national and European identity [12]. The author notes that cultural identity is based on the division of representatives of all cultures into "own" and "alien". In contacts, a person quickly becomes convinced that "aliens" react differently to certain phenomena of the surrounding world, they have their own value systems and norms of behavior, which are significant, but differ from those accepted in his or her native culture.

M. Hand defines that patriotism is the basis of a person's psychological involvement in the country in which he lives [13]. This involvement becomes the foundation for the formation (acceptance) of the rights and responsibilities that citizens are expected to assume in order to ensure social and economic development. The study highlights the need to use personalized, interactive teaching methods instead of a universal approach that does not take into account the experience, needs and specific interests of students to form their values. Y. Yurkiv, N. Krasnova analyze the definitions and main characteristics of civic socialization [14]. The authors identify the important role of information and network communication in the process of civic socialization of young people, the development of their sense of patriotism.

M. Wolfowicz, B. Hasisi, D. Weisburd assess the negative impact of the media, primarily the Internet, with its propaganda of violence and crime on reducing the standard of living in the country, on replacing genuine universal values with imaginary values [15]. At the same time, as E. Erdoğan, B. Akbaba prove, the effectiveness of persuasive influence depends on the message itself [16]. The strength and quality of the arguments used in persuasion determines its success. The didactic result of persuasive influence also depends on the situation of informing: those psychological and pedagogical conditions under which it is implemented. L. Darzhinova et al. reveal the interrelation of motivation in educational activities among adolescents with value orientations (direction, intensity) [17]. S. Timotheou et al. give convincing arguments that digital technologies have changed (and are changing) the nature and scope of education [18]. Didactic web-resources have prompted educational systems around the world to adopt a strategy and policy for integrating ICT into learning, education and development.

T. Zhide et al. conducted a study on the conditions for forming value orientations among students in the process of media education [19]. According to their conclusions, one of the tasks of media education is to arouse students' interest in social problems (in particular, the problem of forming a civic position as a condition for the formation of a civil society). The authors, starting from the provision that the environment surrounding children changes under the influence of possible constant online presence provided by information technology, media and other institutions of socialization come to the conclusion about the powerful influence of new information technologies on the younger generation. This influence

occurs through a change in consciousness, value orientations, needs and interests and morals. T. Zhide et al. formulate the conclusion about the possible use of media resources in forming patriotism, citizenship and other values of the younger generation (values that connect people in society and ensure their readiness to act in the interests of the entire community) [19].

O. Kondur et al. substantiate the relevance of the problem of students' national patriotic education by means of digital technologies in the context of distance learning [20]. The authors emphasize that national patriotic education is a powerful tool for strengthening the unity and integrity of the country. O. Kondur et al. determine that national patriotic education will be effective provided that there are comprehensive and purposeful activities among young to form patriotic consciousness people, a sense of national dignity, and the need to serve the ideals and values of the country.

And here the conclusions of Kh. Qolamani, S. Abdullah, M. Rekani become relevant that gamification of social practices is an effective tool for user engagement and support of social initiatives [21]. Of course, a more complete analysis of the influence of gamification on the educational process is presented in the work of S. Das et al. The authors analyzed theoretical foundations of the development of gamification in education and upbringing, aspects of implementing its resources in educational organizations [22]. They identified difficulties and directions of development (e.g., the need for the mandatory use of a scientific approach to the design of the game space and the subsequent assessment of the impact of gamification on the didactic process).

V. Marino Carvalho presents specific developments on designing and applying video games with RPG elements in reconstruction of historical events, understanding the mistakes of the past and forecasting social development in the future [23]. In a subsequent study, C. Moura, A. Martire, V. Marino Carvalho summarize the potential of the gaming industry to create high-quality products with RPG elements [24]. V. Marinho Carvalho, M. Carvalho prove that games with RPG elements can significantly influence the moral and patriotic upbringing of users through learning the history and culture of their hometown (country) [25].

E. V. Soboleva et al. describes game mechanics that support the learning of children with special educational needs [26]. Among other things, the authors consider the mechanics of "Competition", "Fun once – fun always", "Theory of gradual information return", which are used as examples (both in the classroom and in conditions of additional education) to demonstrate how students' cognition, their desire to independently search for information and gain experience in social interaction are activated. S. Fedorova, D. Ivanova, K. Balysheva consider both the problems of integrating digital technologies into students' civic and patriotic education and the problems of evaluating their effectiveness [27]. The authors proceed from the thesis that implementing the tasks of forming a citizen and a patriot should be carried out at all levels of the educational system. The study analyzes the available material on the digital provision for educational system, such as 3D games, podcasts, social networks, and video resources.

E. A. Mamaeva et al. consider the possibilities of gaming spaces in augmented reality for the development of such personality qualities as empathy, emotional stability, the ability to live in a multinational world, interact with people of different cultural, racial, ethnic, or other groups [28]. O. Pavlova et al. prove that additional education for children in Russia is a unique educational system [29]. The article presents the world experience of individually oriented educational practice aimed at forming human capital. The authors have highlighted such patterns as eventfulness of educational process, constructing the space of knowledge and its implementing, actualization, reflection, patriotic self-awareness. T. E. Manger, Y. V. Vasilieva confirm the importance of institutions of additional education in implementing patriotic education, since it is in these institutions that children and adolescents become active participants in society [30]. The authors also note that not all institutions of additional education have the conditions for the formation of patriotic education, namely: developed programs, material and technical base, the level of teachers' training.

During the analysis performed, it was found that:

- patriotism is formed in the process of education, socialization and upbringing of schoolchildren. But it is impossible to implement civic and patriotic education only with the help of a knowledge approach. The new age demands from the school the content, forms and methods of civic and patriotic education, adequate to modern socio-pedagogical realities;

- introducing gamification services, game educational resources with RPG elements to support patriotic education is an important direction for the development of patriotic education in the country and the achievement of global sustainable development goals;
- the system of additional education has significant potential in terms of integrating gamification services into the content and directions of schoolchildren's patriotic education;
- there are technical, methodological and organizational difficulties in using gamification services in additional education to support patriotic education, since each institution differs in its programs, material and technical base, and the level of mentors' training.

RESEARCH PROGRAM

The first stage included analysis of the literature, the experience of using gamification services in the system of additional education and specifically to support patriotic education. At the same time, successful international and Russian projects were highlighted (the All-Russian Internet game under the auspices of UNESCO – "Our Heritage", the game "Open Education Policy", the All-Russian project "GenerationNext" – 2024). The features and problems of implementing patriotic education in the system of additional education in Russia were analyzed, e.g., the emphasis on military-patriotic themes while there is a wide range of opportunities and types of work; the limited and often not universal nature of the tools used; a significant proportion of predominantly youth-oriented activities.

The problems of integrating gamification services (and separately with RPG elements) into the system of additional education were revealed: the lack of comprehensive information resources, weak material and technical base, insufficient level of mentors' training to work with role-playing games based on computer platforms (e.g., if the mechanics of the game is to be prescribed manually from scratch).

It was determined that when working with the gamification service, we will form and monitor such personality qualities as communication (attitude to norms / values) with the native people, native land, country and cultural information environment.

Further, it was determined that the software implementation of the resource will be performed in the form of a web service. The interface elements are described in HTML files in such applications, and the application logic is described in JavaScript (JS) code. The choice of JavaScript was primarily due to the fact that it is a programming language that adds interactivity to a web resource, e.g.: scaling of elements, response when pressing buttons or when entering data into forms, dynamic styles, navigation through a step component, animation. The structure of the quest was determined (as the game levels were detailed): the administrative and territorial structure of the country, federal cities, the Kirov Region and its center. The methods for studying patriotic education were analyzed: the questionnaire presented by S. Vasileva, A. Miklyaeva (their methodology is based on the principles of the "Questionnaire of blind and constructive patriotism" and contains 10 questions); complex methodology of I. D. Lushnikov; other tests of "Attitude to patriotism" from open sources.

The methodology of I. D. Lushnikov was chosen based on the analysis. Next, the following relationship was introduced between the assessed materials of value orientation according to I. D. Lutoshkin and the monitored level of patriotism: 16 or more responses fell into the category of "negative value orientation" – the level is low; 17 or more responses fell into the category of "positive-high value orientation" – the level is high, in all other cases an average level of patriotism was diagnosed.

A high level of formed patriotic qualities: a participant in the School of Programming and Robotics independently and actively uses gamification resources to solve all these tasks: to master and apply value-patriotic knowledge; to understand the objective meaning; to classify and characterize the patriotic meaning of facts, phenomena; to move pictures of various social objects; to choose an answer from a variety of options; to identify in order to verify the attractiveness of the image of patriotism (heroes, events, deeds). When performing tasks, the participant is guided by common sense, moral values and worldview. He/she is thoughtful and responsible when solving problems of moral choice (e.g., in conditions of conflict and peaceful settlement), during the assessment of actions (dedication and willingness to sacrifice for the sake of the Motherland).

The average level of formed patriotic qualities: a participant in the School of Programming and Robotics studies and applies gamification resources with interest to solve most of the tasks listed above. Sometimes a mentor's help is necessary to complete a task on a web resource. He/she is guided by common sense, moral values and worldview. But sometimes they solve problems of moral choice irresponsibly, when making assessments.

A low level of formed patriotic qualities: a participant in the School of Programming and Robotics does not seek to study and apply gamification resources to solve most of the tasks listed above. The support of a game teacher is constantly necessary to complete a particular task of a web resource. He / she does not think about the meaning, value relations, accumulation and transfer of cultural values from generation to generation.

There were formed control and experimental groups with 34 participants of School of Programming and Robotics in each. At the second stage of the study, schoolchildren in the conditions of the additional education system performed educational tasks of the game levels of the space of the web resource "Generation 6.5.0".

The third stage of the study identified factors affecting the quality of using the digital resource, both in the context of patriotic education of the youth and for implementing global goals for sustainable development and peace.

RESEARCH RESULTS

The design of the educational content of the web resource "Generation 6.5.0" took place according to the following plan: selecting the topic (at the interface of learning and developing monitored personality traits); defining the task (e.g., to know the objective meaning; to characterize a patriotic phenomenon/fact; to work with pictures of various social objects; to identify value-patriotic relations); selecting necessary game materials (audio, historical chronologies, images); preparing training tasks for the character according to the level of the game. The presented web resource was dedicated to the 650th anniversary of Kirov.

The next stage was plot design within which a script was compiled and a web resource with RPG elements was developed to support patriotic education, e.g., a treasure hunt, a trip to the country of finance, etc. The presented web resource "Generation 6.5.0" implemented a historical excursion (Khlynov, Vyatka, Kirov) and a game visualized interaction between the region and other territorial units of Russia. The main characters are Master and Kikimora. Storylines:

- Master finds himself in an enchanted manor where Warrior of Darkness lives;
- The hero receives a task from Warrior of Darkness (shoots an arrow – moves through the levels – collects artifacts and map fragments);
- Master receives rewards for completing tasks ("hide-away hat", "daily bread", "lamp of knowledge", etc.) and uses them in new adventures;
- When collecting all the fragments of the map, the main character returns to his hometown.

Starting the game. Master on a bet with Shurale (the hero of Tatar folk tales – a lively, cunning, mischievous and cheerful character) releases an arrow from a crossbow. The arrow hits Warrior of Darkness and the game adventure starts. Next, the script is worked out in detail according to the storylines and roles. At this stage, the learning tasks are combined with the game ones, their wording is clarified so that they can harmoniously fit into the storyline. The following features are provided for interaction with the web resource: moving through the levels of the game world (vertical panel); access to tools (action buttons – "go to next", "enter answer", "move", etc.) on the horizontal panel. The interface of the Generation 6.5.0 web resource with RPG elements is designed in such a way that it is intuitively clear and does not require additional time to study it. The content of educational situations in the game space is selected in such a way as to support the development of aesthetic consciousness, independence, active cognition, etc.

Questions and tasks in the structure of the web resource "Generation 6.5.0" are divided to support patriotic education in accordance with the content of I. D. Lushnikov's questionnaire as follows: to identify value-patriotic knowledge; the respondent's knowledge of the objective meaning, value; to characterize the patriotic meaning of a fact, phenomenon; to work with pictures of various social objects (e.g., to choose an object reflecting patriotic value); to manifest value-patriotic relations; to choose a moral priority; addressed personally to the respondent and with answers for selection; to identify and to check the attractiveness of the patriotism image (heroes, events, deeds); to identify patriotic-oriented behavior; to choose the preferred personal practice in relation to values; to forecast behavior, to determine the degree of priority of cases; to consciously distinguish the ways of behavior in accordance with the norms accepted in society; to check the readiness for personal responsibility for the results of their deeds and actions.

The example of a web resource "Generation 6.5.0" task from the first game level (interaction with other territorial units): "Spreadsheets encrypt the name of the largest river in the Kirov Region. The source of the river is in Udmurtia. It flows into a larger river, the Kama, in another republic, Tatarstan. It borrowed its name, according to the legend, from the Udmurt tribe. And even earlier, this river had another name, Nukrat, i.e. silver water. The water in the river was so clear". As an additional task, it is necessary to find out from the Water Elf what a "spreadsheet cell", "autocomplete" are. Another option: to determine which of the presented flags belongs to which country. The analogue is to determine which coat of arms belongs to the Kirov region. The interaction of the main character takes place with the Herald Cat of the game world. As an additional task, it is necessary to learn from the Scientist Cat what a "graphic editor", "raster", "pixel" is.

The example of a web resource "Generation 6.5.0" ask from the second game level (interaction with federal cities). The photo shows the art object "Kilometer Zero" near the Central Post Office building (43 Spasskaya Street). The participants of the game adventure study a 3D model of a wooden sculpture consisting of a milestone and a fence. Question: write down the distance from the Vyatka land to Moscow in various units of measurement. A similar task is about St. Petersburg. As an additional task it is necessary to get a hint from the head of the post office how to convert miles into meters, etc.

The example of the web resource "Generation 6.5.0" task from the third game level (how many plants, factories and workshops were evacuated to the region in 1941?). The resulting number should be written in binary notation. As an additional task it is necessary get a hint from the workshop master how to convert from decimal system into binary. All the tasks presented are aimed at the formation of value relations and practical knowledge about the native land, country, society, state, and people.

The example of a task on forming values in the field of family relations (the third game level) is a video demonstration. The plot: in the Vyatka Region, the whole family sat down for food (breakfast, lunch, dinner) after crossing themselves, looking at the Holy images. They all ate the brew from one large cup (bratina) with wooden spoons. It was considered unacceptable to eat too fast or vice versa, for a long time, slowly. No wonder people used to say: "_". The participant of the game had to help Ivan Tsarevich to answer correctly. Options for completing the task – choose from the suggested options, enter the answer in the form of text, record a voice message and attach it to the input field.

Let's focus on the description of the technical implementation of the web resource "Generation 6.5.0". The horizontal menu is implemented through the class StatusBar. If we describe the technical feature of the implementation, then we'll note that the lower part of the web resource is the status bar. It is used to display information about the task status of the quest, e.g., the cursor position, the number of words, the progress of tasks, etc. The horizontal navigation bar is well perceived because when reading the text of the links, the user's gaze moves horizontally along one line (from left to right).

The vertical menu is based on a bulleted or numbered list. By default, all items in the list `<li> ... </li>` are positioned vertically. They occupy the entire width of the container element `<ul> ... </ul>`, which in turn occupies the entire width of its container block. The list items `<li> ... </li>` can potentially contain not only links, but also titles, icons, and pictures. Using the vertical menu, you can make comments on the site, a list of categories, e.g., a list of folk crafts or territorial units. Numbered lists are also used in fulfilling interactive exercises (as an option, "Spot the odd"). The text and the task are accessible both by selecting a fragment of the map (part of the game space through which

Master moves) and by selecting an item in the vertical menu. E.g., the Udmurt Republic. The study of theoretical material allows the user to obtain information about geographical features, cultural assets, and sporting achievements. The material is presented in Russian and Udmurt languages, supported by dynamic graphic images. The peculiarity of this implementation is due to the following facts:

- 1) the ability to show several different images, but not occupy the entire screen with them;
- 2) operational demonstration of static images, which in reality are mostly in "motion" (nature, processes and phenomena). The feeling of dynamics arises in the player (character) when the objects observed move (or appear and disappear) in the frame, or when their brightness (color), sizes or shapes change.

There are other horizontal slide shows in the web resource "Generation 6.5.0". Each time you click right/left, the pictures change. The using slide shows support forming such qualities as a holistic worldview; knowledge of the history, language, culture of their people, their region, etc. The practical part of the role-playing game includes the following interactive exercises:

1. Choose one correct answer: "Which statement is wrong?", "Find an odd noun". As noted above, the technical implementation is based on the description of the script for the numbered list. Moreover, the user in the process of completing the task has the opportunity to check himself or "spy" the answer. The implementing the last two possibilities is aimed at achieving such results as the development of social norms, rules of behavior; the development of moral consciousness in solving moral problems based on personal choice;

2. Multiple choice: "Which statements are true?". The student has the opportunity to complete tasks several times, check the answers to each question separately, see the correct solutions, and return to the uncompleted exercises in the future. In the technical implementation of exercises to choose one correct answer, the "Checkbox" and "Switch" tools were used.

"Checkbox" represents an element that can be in two states: checked and unchecked. The checkbox is created using the input script with the type = "checkbox" attribute. The "checked" attribute allows you to check the box in the marked state. Switches or radio buttons visually resemble checkboxes. They can also be in a marked or unmarked state. You can create for switches only one group in which only one switch can be selected at a time.

The meaning of the switches is that the user can select with their help exactly one of the options. Of course, this can be done using a special verification code. But it is much easier to pre-check one of the options using the built-in attribute. This is implemented through the "checked" property, e.g., `<input type="radio" name="favorite_pet" value="Cats" checked> Cats <br>`. To create a radio button, specify the type="radio" attribute: `<input type="radio" name="nameOfChoice" value="1">`. The value attribute is important, which, when submitting the form, allows the server to determine which switch was selected.

3. HTML5 and JavaScript possibilities provide tools for working with various dynamic objects (not just slideshows), e.g., Drag & Drop. In fact, these are the possibilities to "grab" an element with the mouse and move it. The following are Drag&Drop events that you can use to control the dragging process: `dragStart` (the user starts dragging the item); `dragEnter` (the dragged element reaches the end element); `dragOver` (the mouse cursor is hovered over the element when dragging); `dragLeave` (the mouse cursor leaves the limits of the dragged element); `drag` (the cursor moves when dragging); `drop` (an element is dropped); `dragEnd` (the user releases the mouse cursor while dragging). In interactive exercises, this is implemented as follows: choose synonyms for words (pride, Rus, valor, history, memory, heroic deed, sacrifice, icon, truth, faith, unity, justice, heart, etc.); sort elements by dragging, e.g., sorting task cards, sorting numbers in ascending/descending order; count and drag the necessary number; changing the context of the element (an example is transferring a task from one list to another); moving local files to the browser window.

By default, only links, images, and selected fragments can be moved. If you start dragging them, a phantom copy will appear, which will follow the cursor. To add the ability to drag other elements, it is necessary to set true to the draggable attribute, e.g. `<div draggable="true"> Draggable element </div>`. "Generation 6.5.0" web resource uses the `<audio>` script to insert audio files on the page to activate cognition and to form love for the Motherland.

Students of the School of Programming and Robotics, operating on the basis of the college of Vyatka State University, worked with a web resource that includes RPG elements during the IT holidays (the second week of classes of the third shift in 2024). The first shift was devoted to space topics (the resources of the K. E. Tsiolkovsky Museum of Aviation and Cosmonautics were studied). The second shift was "A young programmer. Journey through the Galaxies" (grades 1-4) and "Digital World. Level Up" (grades 5-8). The schoolchildren of the shift designed and got acquainted with new mechanisms and devices, studied graphic design, developed websites, programmed and created 3D spaces. In the second week of classes (out of three) thirds of the IT vacation shift, schoolchildren started working with pixel graphics. In the experimental group, they also performed tasks from a web resource with RPG elements. By the way, one of the tasks of the web resource "Generation 6.5.0" was related to sorting important events in K. E. Tsiolkovsky's life in the order of their chronology.

The schoolchildren of the control group also performed tasks involving the formation of specific social values. However, they were not involved in purposeful work with Generation 6.5.0 web resource with RPG elements to support patriotic education. Examples of tasks:

1. Decipher by the coordinates the name of one of the crafts of the Kirov region., Write down this name in the response: (1; 2), (3; 2), (2; 4), (2; 5), (4; 3), (2;1), (5; 3), (1; 5), (5; 3), (3; 3), (5; 1), (1; 4). Answer: vine weaving.

2. 567.5 km of the border between the Kirov Region and the Komi Republic has been put on state cadastral registration. This is 16.5% of the total length of the Kirov Region border. Find the length of the border of the Kirov region. Write down the result in kilometers, rounding the result to tens.

3. The Great Patriotic War began on June 22, 1941. An amazing square will help you find out how many days the war lasted. Select one number from each row and each column, find the sum of the selected four numbers, and you will get the answer to the question.

Table 1 shows the results of information activities of schoolchildren in the system of additional education according to the presented version of working with web resource "Generation 6.5.0". For $\alpha = 0.05$, the χ^2_{crit} is 5.991. It is determined that $\chi^2_{obs.1} < \chi^2_{crit}$ ($0.140 < 5.991$), and $\chi^2_{obs.2} > \chi^2_{crit}$ ($7.033 > 5.991$). Therefore, the difference in the levels of formed patriotic personality traits for the experimental and control groups cannot be considered accidental. Let's analyze the changes in the levels of formed monitored personality traits for the participants of the School of Programming and Robotics:

1. In the experimental group, the highest dynamics took place at level "Low". The corresponding value decreased by 32% (11 participants). There is no dynamics in the control group.

2. The number of respondents with level "Average" in the experimental group increased by 12% (4 people). In the control group it is decreased by 12% (4 students).

3. Level "High" in both groups showed positive dynamics: in the experimental group it increased by 21% (7 schoolchildren), in the control group – by 12% (4 schoolchildren).

Table 1

The effectiveness of using a web resource with RPG elements
to support patriotic education of schoolchildren in conditions of additional education

Level	Groups			
	Control group (34 participants)		Experimental group (34 participants)	
	Before the experiment	After the experiment	Before the experiment	After the experiment
High	5	9	4	11
Average	12	8	12	16
Low	17	17	18	7

Let us note that the developed web resource focuses on:

- active civil-patriotic practices implemented in the region (e.g, the city open festival for Cosmonautics Day, the program for the 80th anniversary of the liberation of Leningrad from the Nazi invaders, the exhibitions "Memory of Generations" and "Mother's Day", a gathering of participants of military-patriotic clubs, the museum of the search-and-rescue movement, etc.);
- cooperation (as part of each task, the Main Character interacts with the inhabitants of the game world and receives help and hints from them);
- implementing the principle of sustainability and development (the content of the web resource covers a variety of foreign policy issues, strengthening interstate contradictions, economic instability, attempts to destroy traditional values, distortions of world history, rehabilitation of fascism, incitement of interethnic and interfaith conflicts, imposition of alien moral and behavioral models);
- general management (the user is free routine computing, improved quality of life in the information society);
- the development of public digital goods and digital rights (the ability to quickly obtain information from open sources and the protection of authorship rights).

DISCUSSION

So, information interaction in the environment of web resource "Generation 6.5.0" with RPG elements really contributed to the support of patriotic education of schoolchildren. This happened due to such features of the web resource as interactivity, connection of various data transmission channels, use of different types of information, "momentary" movement in time and space, "gamification" of important social events and phenomena. The proposed version of web resource "Generation 6.5.0" was developed taking into account the ideas and key provisions of game projects implemented by the UNESCO Department of Distance Education [4]. When creating and filling it, UNESCO Recommendations for open educational services were taken into account [3]. The authors' results develop the ideas of V. Marino Carvalho about the possibilities of using video games with RPG elements to reconstruct historical events, realize wrong actions in the past and predict development for the future [5].

The presented materials continue the research by E. V. Soboleva et al. about the didactic potential of game mechanics implemented in the digital space, since the entire structure of web resource "Generation 6.5.0" involves active use of the mechanics "Competition", "Fun once – fun always", "Theory of gradual return of information" [6]. The authors' conclusions complement the conclusions of S. Fedorova, D. Ivanova, K. Balysheva on the areas of applying 3D games, video resources to support the civic and patriotic education of schoolchildren [27].

CONCLUSION

Patriotic education of an individual's personality is a necessary public task, an urgent direction of a comprehensive system of activities, including the level of additional education and using gamification tools. A significant result of the work is specifying the ideas of gamification of educational (and, in particular, patriotic) activities promoted by UNESCO for the system of additional education in Russia. The authors formulated in the research various aspects of using a web resource with RPG elements to support patriotic education of schoolchildren: at the methodological level: justifying the choice of the plot and storylines, determining the significance of the plot for the user audience, describing the levels of the game scenario, content and types of interactivity for tasks; at the technical level: navigation options, static and dynamic elements; components to support audio, drag-and-drop, slide shows.

We will formulate the factors identified that affect the quality of using a digital resource, both in the context of patriotic education of young people and for implementing global goals for sustainable development and peace:

- interactivity: the character receives an instant reaction to the action, thereby the user can observe, evaluate and predict actions (actions) to shape the future;
- selection of various data transmission channels: the main character receives information both when interacting with the characters of the game world (direct communication) and during his own cognitive activity (search, sorting, moving);
- use of different types of information (text, audio, video, images, slide shows);
- "momentary" movement in time and space allows characters to experience (feel) the connection of generations ("past-present-future"), which in reality is quite difficult to do;
- "gamification" of important social events and phenomena allows you to lower the level of the character's responsibility for the actions taken and carried out.

We will also indicate limitations when using "Generation 6.5.0" web resource with RPG elements:

1) filling of game levels with content was carried out with a focus on a specific event that is significant for all participants in information interaction. Its application for other cases and situations will require modification of both educational tasks and the technical elements used;

2) game educators who have developed and used the web resource are actively engaged in studying the peculiarities of gamification based on digital technologies for a long time. Using the resource by other mentors may require additional training in terms of learning the principles and features of game mechanics.

Possible options for continuing the study: additional storylines of the web resource (e.g., the interaction of participants of the game in the international field); connecting generative neural networks to information interaction; integrating the results of the web resource into other educational projects of the School of Programming and Robotics.

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Авторы**Соболева Елена Витальевна**

(Россия, Киров)

Кандидат педагогических наук, доцент кафедры
цифровых технологий в образовании
Вятский государственный университет
E-mail: sobolevaelv@yandex.ru
ORCID ID: 0000-0002-3977-1246

Суворова Татьяна Николаевна

(Россия, Москва)

Заведующий лабораторией развития
цифровой образовательной среды
Центр развития образования
Федеральное государственное бюджетное учреждение
«Российская академия образования»

Профессор кафедры информационных технологий в
непрерывном образовании
Учебно-научный институт сравнительной образовательной
политики
Российский университет дружбы народов имени Патриса
Лумумбы
E-mail: suvorovatk@mail.ru
ORCID ID: 0000-0003-3628-129X

Машарова Татьяна Викторовна

(Россия, Москва)

Профессор, доктор педагогических наук, профессор
департамента педагогики Института педагогики и
психологии образования
Московский городской педагогический университет
E-mail: mtv203@mail.ru
ORCID ID: 0000-0001-5974-7748

Разова Елена Владимировна

(Россия, Киров)

Доцент, кандидат педагогических наук, заведующий
кафедрой
прикладной математики и информатики
Вятский государственный университет
E-mail: razova.ev@gmail.com
ORCID ID: 0000-0001-5557-5432

Authors**Elena V. Soboleva**

(Russia, Kirov)

Cand. Sci. (Educ.),
Associate Professor of the Department of Digital Technologies
in Education
Vyatka State University
E-mail: sobolevaelv@yandex.ru
ORCID ID: 0000-0002-3977-1246

Tatyana N. Suvorova

(Russia, Moscow)

Head of the laboratory of Development of Digital Education
Environment
Education Development Center «The Russian Academy of
Education»

Professor of the Department of Information Technologies in
Lifelong Learning
Educational-scientific Institute of comparative educational policy
Peoples' Friendship University of Russia named after Patrice
Lumumba
E-mail: suvorovatk@mail.ru
ORCID ID: 0000-0003-3628-129X

Tatyana V. Masharova

(Russia, Moscow)

Professor, Doctor of Education,
Professor of the Department of Pedagogy, Institute of
Pedagogy and Psychology of Education
Moscow City Pedagogical University
E-mail: mtv203@mail.ru
ORCID ID: 0000-0001-5974-7748

Elena V. Razova

(Russia, Kirov)

Associate Professor, Cand. Sci. (Educ.),
Head of the Department of Applied Mathematics and
Informatics
Vyatka State University
E-mail: razova.ev@gmail.com
ORCID ID: 0000-0001-5557-5432

Вклад авторов

Соболева Е. В.: концептуализация, методология,
создание рукописи и ее редактирование,
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проекта

Суворова Т. Н.: верификация данных, проведение
исследования, создание черновика рукописи

Мошарова Т. В.: формальный анализ, проведение
исследования, визуализация

Разова Е. В.: ресурсы, программное обеспечение,
проведение исследования

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Author's contribution

Elena V. Soboleva: Conceptualization, Methodology,
Writing - Review & Editing, Supervision, Project administration

Tatyana N. Suvorova: Validation, Investigation,
Writing - Original Draft

Tatyana V. Masharova: Formal analysis, Investigation,
Visualization

Elena V. Razova: Resources, Software, Investigation

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