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Cyber quest as a means of supporting cognitive activity when teaching a foreign language online

The problem and the aim of the study. The transformation of the educational space has identified as priorities for online teaching: improving the quality of the materials provided, supporting cognitive activity and students' independence, preparing teachers for the active use of web technologies. To implement these requirements, the authors propose the use of cyber quests, which in a game form allow providing additional resources for formation of the foreign language communicative competence.

Research methods. To obtain theoretical generalizations, the analysis of scientific works on the problem of gamification of learning, formation of cognitive activity and foreign-language communicative competence was used. The cyber quest was implemented in the Quandary software environment. The study involved 90 first-year students of the Russian State Agrarian University – Moscow Timiryazev Agricultural Academy. The Pearson χ^2 (chi-square) criterion was used in the experiment.

Results. The essence of the concept "cyber quest", its functions and capabilities are investigated. The stages of developing cyber quests based on virtual worlds for learning a foreign language in the online format are defined. The mechanics of cyber quests in the Quandary program environment are described in detail (implementation options "Assembling the parts of the whole"; "Experience rating"; "Maintenance of an interactive object"; "Successive activation"). The cyber quest is focused on solving future professional problems in the direction of preparing "Agricultural Engineering" and includes two organization strategies: "Control" and "Training". The main difficulties of software implementation (for example, the ambiguity of using open-type assignments) and methodological support (the need to maintain balance between the game and learning) are highlighted. The dynamics was assessed according to the levels of formation of the cognitive activity and statistically significant differences were revealed on the qualitative changes that occurred in the pedagogical system $\chi^2_{\text{obs. 2}} > \chi^2_{\text{crit.0.05}}$ ($6,70 > 5,99$).

In conclusion factors that ensure the effective use of the cyber quest to support the cognitive activity of students when learning a foreign language in the online format are summarized: non-linear motion paths; resolution of problematic situations of the practice-oriented nature; combination of entertaining and cognitive components, etc.

Keywords: gamification, online learning format, foreign language competence, communication, activation of knowledge, web-technologies

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Introduction

In modern socio-environmental conditions, under the influence of trends in development of health-saving practices, the traditional form of obtaining knowledge is transferred to the format of online learning [1]. In this regard, digital technologies and means of supporting communication in the virtual space are actively developing. In particular, web-technologies with game elements represent, as shown in the work of E. V. Soboleva, a new level of the human mental, communicative, executive and creative activity [2]. Interaction with these technologies, as noted by F. K. M. Arif, N. Z. Zubir, M. Mohamad, M. M. Yunus, is becoming a new source of mental work for students [3]. The software environment that was identified by E. M. Bonsignore performs several functions in the process: it serves as a means of communication, creating problem situations, a dialogue partner, a source of information, it controls the student's actions and provides him/her with new cognitive opportunities [4].

However, in practice, the pedagogical system was not fully prepared for the implementation of these opportunities. It should be noted that in the context of the development of training in the online format, the demands of students on the organization of the educational process are increasing [5]. This is especially true for higher education, where students are not in vertical communication with their teachers, but in a single partnership, being active subjects of information interaction. It is obvious that online learning, despite its remote format, involves a fairly high degree of interaction, "live" interaction, communication between the student and the teacher. The teacher in the virtual environment, according to N. Selwyn, L. Pangrazio, S. Nemorin, C. Perrotta, should be not only a source of knowledge and a controller, but an organizer of the educational process [6]. The teacher and students are responsible for assimilation of new material. V. C. Ryabchikova, Z. B. Devizkaya, I. S. Zlobina, O. S. Rubleva reasonably conclude that this is most noticeable when teaching a foreign language, where the formation of foreign language communication competence requires active cognitive activity, involvement in communication practice, work with text [7]. Taking into consideration the fact that such communication when teaching online is not always possible, and the cognitive activity of students with a remote work format is not always high, the didactic potential of web technologies and game mechanics should be emphasized.

The gamified environment supported by digital technologies allows to make the process of learning foreign languages at university more open and free, both for the teacher and students. Educational projects carried out by students using web-based technologies allow them to practically apply the acquired language knowledge, since there are a large number of educational platforms and services which give a description of situations that may arise in the process of communication between representatives of different cultures and lead to problems or misunderstanding [8]. Students, as shown by U.O. Maksudov, can participate in the selection of material and feel more independent, acting as active subjects of their teaching, which meets the requirements of the Federal state educational standards for organizing the educational process. Significant didactic potential when teaching a foreign language in the distance format is played by online platforms that allow to diversify the presentation of the material, make it more interesting, memorable. There are tools, for example, interactive game services described by Yu. V. Volobueva, which greatly facilitate

the work of the teacher, support the ability to provide accessible and relevant material for using theoretical knowledge in practice [9]. Students solving such tasks contributes to the productive study of program material due to their diversity and interactivity. Interaction in the virtual gaming environment contributes to preservation and development of students' sustainable cognitive interest in learning a foreign language, which is formed only if the educational process is organized in a special way.

Crossword puzzles, mobile applications, and video conferences play a significant role in the work on formation of students' cognitive activity, lexical skills, and the consolidation and development of content on various conversational topics. E. A. Plakhova, E. N. Kharapudko, R. R. Nurmieva highlight the didactic capabilities of web technologies, based on which you can create effective programs for learning a foreign language. In their opinion, the basis of effective educational technologies should be a game based on the method of discovery [10]. As such an innovative technology, M. H. Abu Warda defines a "cyber quest (educational quest)" [11]. The cyber quest is a special type of organization of virtual space in which the achievement of game goals is associated with the successful completion of training tasks. In a broader sense, this is a form of interaction created in line with the theory of gamification and designed to add a game element to the distance educational process. Moreover, O. A. Golosova notes that, if applied correctly, this approach allows to qualitatively increase the efficiency of learning material and to activate the cognitive activity of students, to promote professional self-realization [12]. However, the practical implementation of the mechanism of the educational quest, supported by web-technologies, and contributing to the formation of the cognitive activity of students, causes certain difficulties for teachers: time and labor resources, selection of material, choice of software, organization of foreign language communication in the virtual space, justification of the need to include such forms work in online training, correlation of the training program and completion of the quest, etc. [13].

Thus, there is an objective problem, which is expressed in the need to realize the opportunities of cyber quests for motivation, to engage students in active knowledge, to form foreign language communicative competence through the expansion of teachers' ideas about the forms of organization and support for interaction in the virtual environment when teaching online. The hypothesis of the study – the use of cyber quests will create additional pedagogical conditions that ensure the effective formation of cognitive activity in the process of online learning a foreign language (professional orientation, subjectivity, cooperation relationships).

The purpose of the work is to study the features of the use of cyber quests when teaching a foreign language online to support the cognitive activity of students. Achieving this goal is possible through computer gaming services using which cyber quests can be developed (Tululoo Game Maker, RTADS, TyranoBuilder VisualNovel Studio, AXMA Story Maker, Quandary, etc.).

Materials and methods

The methodological basis of the study of the effectiveness of using cyber quests when teaching online to support the cognitive activity is the main provisions of the system-activity approach. The system-activity approach allows to implement the methodological ideas formulated in the work of E. V. Soboleva, A. N. Sokolova, N. I. Isupova, T. N. Suvorova [14],

that it is training, taking into account the principles of gamification, that contribute to the active assimilation of knowledge, formation of methods of foreign language activity, the solution of educational, cognitive and professionally oriented tasks. The communicative approach, as a research method, allows to:

- determine the range of communication directions of cyber quest participants in research means – the Quandary game resource (following links, choosing an answer option, completing a task, moving to a new level);
- describe the conditions for the implementation of information interaction in the quest environment

The cognitive activity in the presented study is a personality trait that, according to G. A. Kameneva, T. A. Bondarenko [5], manifests itself in initiative and independence, leads to management of will and character, the effective assimilation of knowledge, skills.

Empirical methods (testing, observation, analysis of tasks in the quest, essay content, intensity of information interaction) were used to obtain relevant information about the quality of educational results: basic terminology on the training program, rules of practical grammar, colloquial vocabulary, etiquette of everyday communication, etc. The experimental check was carried out as part of the Quandary program to support online learning of English among first-year students of Institute of Mechanics and Energy named after V.P. Goryachkin of the training program "Agricultural Engineering" in the Russian State Agrarian University – K.A. Timiryazev Moscow Agricultural Academy. In total, 90 first-year students took part in the experiment (75% boys and 25% girls). The control and experimental groups were formed, each involved 45 people. The average age of students was 19 years. Online teaching a foreign language using the Quandary software does not impose special requirements on software and hardware; it allows the use of various operating systems and models of equipment. To process the results of the pedagogical experiment, we used the analysis of arbitrary contingency tables using the Pearson χ^2 (chi-square) criterion.

Literature review

According to N. Selwyn, L. Pangrazio, S. Nemorin, C. Perrotta [6], the main directions of the transformation of the education system both in Russia and abroad are associated with its digitalization. As requirements for development of the digital educational environment in new socio-environmental conditions when educational institutions massively turn to online learning O.I. Vaganova, Z.V. Smirnova, S.N. Kaznacheeva, L.I. Kutepova, M.M. Kutepov distinguish: improving the quality of education, creating a mobile, diversified development personality, capable of adapting to the rapidly changing realities of the world, including in the software and technical field [15]. The implementation of this requires a global restructuring of the entire didactic process and communication between its participants. At the same time, along with obvious challenges and problems (unavailability of the infrastructure, poor technical level of teacher training), the new training format provides a wide range of opportunities and prospects for improving pedagogical technologies, which create a forced situation in a critical situation. There are studies on the need to use the didactic potential of computer games and online services in the game format for individualizing the educational process, for constructing personal educational paths and routes, for non-linear presentation of educational material [16]. E.V. Soboleva does not only describes the possibilities of digital gamification resources, but also formulates the ideas of the methodological approach for

their application when teaching any discipline [17]. L. S. Nabokova, F.R. Zagidullina prove that the learning space, built taking into account the principles of gamification, allows students to maximize their creative potential, express themselves individually or in a group, try their hand, apply their knowledge, benefit and publicly demonstrate the result [18]. The inclusion of game elements in the foreign-language communicative activity can be an effective option for solving urgent problems of online learning: decrease in the cognitive activity, low level of information culture, lack of experience in independent research and teamwork.

When studying a foreign language, digital technology should complement and expand the range of educational and cognitive influences, enrich communicative practice, promote the mastery of the culture of thinking, skills of oral and written speech, which is justified by E. A. Plakhova, E. N. Kharapudko, R. R. Nurmieva [14]. Their materials describe specific features of inclusion of digital technologies when teaching a foreign language, substantiate the need to find ways and means of intensifying the educational process. As noted by A. V. Bogdanova, V. F. Glazova, A. A. Korostelev, it is the intensive communication between the participants in the educational process that qualitatively transforms online learning [1]. O. Putistina [19] reasonably reveals the possibilities of including interactive resources in students' communicative activities and high-level cognitive processes, P. V. Sysoyev, M. N. Evstigneev, I. A. Evstigneeva present the experience of integrating social services Web 2.0 into the process of teaching a foreign language [20]. Thanks to a number of computer programs, today it has become possible to create applications with the help of which students can logically and consistently build a coherent statement on a particular topic, which contributes to the speech orientation even of an online lesson in a foreign language. Interaction in the digital environment provides didactic opportunities to activate the student, making him/her the main actor in the educational process, actively interacting with other participants [21]. Among possible means of digitalization of education that have the necessary potential to solve the above stated problems, M. Chang, C. T. Chen, K. H. Wu, P. S. Yu single out programs for creating cyberquests [22]. N.I. Isupova, T.N. Suvorova note that the educational quest is a chain of educational situations, questions, tasks in which the student needs to make an independent choice based on his/her knowledge, intuition, experience and make a certain decision [13]. Educational quests are of multi-function - they can be used to study any subject. Completing tasks in a cyberquest also has a high creative potential, which L. M. Kalyanova considers as a set of abilities necessary for the successful research and future professional activity [23]. As a feature of the cyberquest technology, E. V. Soboleva emphasizes the possibility of audio-visualization of educational material or its individual attributes [17]. A.T. Faritov notes the main, in his opinion, function of the cyberquest: gamification of the process of interaction of students with the materials of the educational resource [24]. Researches by E.V. Karmanova, A.N. Starkov, V.V. Vikulina prove that users learning in the virtual environment begin to perceive what is happening on the screen not so much as a laborious process of obtaining information and completing tasks, tests, etc., but as a computer game [21]. The perception of the activity as a game changes the attitude towards the learning process, it is perceived as pleasant and interesting pastime. At the same time, such a "game" does not at all free the user from studying target materials and performing control tasks, it changes only the form of presentation of the material on the background of the computer game scenario. The expected result from participation in the cyberquest, according to the conclusions of M. Chang, C.T. Chen, K.H. Wu, P.S. Yu [22], is that the user does not notice (or practically does not notice) the learning process itself, but at the same time he/she masters the proposed material, when

performing practical tasks, and successfully passes the control of the acquired knowledge and skills. Thus, most researchers agree that the focus of the learner's attention in the cyberquest environment shifts from the emotional assessment of activities, which, in turn, allows reducing fatigue from working with extensive material, increasing motivation and involvement in educational activities.

Software tools for implementation of cyberquests are analyzed in detail in the work of E.V. Soboleva, A.N. Sokolova, N.I. Isupova, T.N. Suvorova [14]. These can be both local applications that require pre-installation (for example, Quandary), and online services that allow to create so-called Web-quests (Ribbon Hero, Zunal, Surprise Me, Quester, and others). Created quests can be posted on the Internet, on a local network or on a separate computer. As an easy-to-learn and practice application, including for teaching a foreign language, many of modern researchers suggest using the Quandary service. This service is free for distribution; the distribution kit for its installation can be downloaded from the official website (<http://www.halfbakedsoftware.com/quandary.php>). The maze created in this program can be posted on the Internet, on a local network, or on a separate computer. It will have the .htm extension, which means that it only needs a browser to work; no additional programs are needed for installation. Quandary has a standard Windows interface. When working, a separate folder in which the working and final files of the maze as well as all media objects that will be in the maze will be saved are needed.

Research program

The main goal of the experiment was to test the didactic potential of the Quandary program as a tool for developing the cyber quest, firstly, for formation of foreign language communicative competence, i.e. to improve the quality of online learning; secondly, to support the cognitive activity of students in the study of lexical units of social, everyday and academic topics, in formation of foundations of the terminology system, grammatical system, rules of speech etiquette.

At the preparatory stage of the experiment, the state of the problem was studied; its interpretation in the scientific literature, the experience of foreign and domestic universities in formation of the cognitive activity of students in the process of online learning of a foreign language was analyzed. Further, the structure and content of the cyberquest to support educational and cognitive activities of students in foreign language communication was developed. Since the subject of the experimental study is the determination of the cognitive activity, expressed in personal indicators, it was decided to evaluate the motivational, cognitive, and activity components of this phenomenon.

To assess the indicators of the emotional-target (motivational) aspect of foreign language communication, a questionnaire was carried out. Examples of questions: "Do you strive to take part in a conversation on a professional topic in a foreign language?", "Do you show persistence and perseverance when overcoming obstacles and difficulties in achieving goals in the process of learning a foreign language?" Seven questions were included in the questionnaire. When assessing students used a 10-point scale, where 1 point determines complete absence of the cognitive activity, and 10 points – maximum degree of this indicator. The answers to each indicator were in special forms, where the following rating scale was proposed for each question: 1-4 points – low level of motivation, 5-7 points – average, 8-10 points – high.

To assess the cognitive aspect, lexical and grammatical testing was carried out to identify the existing cognitive fund of the student: content of knowledge, consistency, awareness of knowledge of a foreign language and cultural characteristics. Test assignments were aimed at determining knowledge about facts, concepts, terms; memorizing knowledge, understanding knowledge, applying knowledge in new conditions. The lexical part of the test consists of 15 questions, each of which offers 4 answer options. The first part of the test (first 6 questions) is on local knowledge (about Great Britain, the USA, Canada - English-speaking countries), the second part of the test (7-12 questions) assesses knowledge of business and educational vocabulary, and finally, the third part of the test (13-15 questions) is professional, namely agro engineering. When compiling the last three questions of the test, we took into account the fact that first-year students of the Institute of Mechanics and Power Engineering are not quite familiar with the terminology in the field of specialization, even in Russian, so, the tasks were professional, but simplified to the level of general knowledge. This is followed by the grammatical part of the test, which includes 30 questions with 3 answer options, of which only one is correct. The test covers the whole range of grammatical topics - from the simple present tense to the simple perfect tense, the use of personal, possessive, demonstrative pronouns, the possessive case, the formation of questions, negative sentences. The total time to complete the test is 35 minutes. Evaluation scale: 40-45 correct answers - high level of the cognitive component; 24-39 answers – average; less than 24 correct answers – low.

To identify indicators of the activity aspect of the cognitive activity, we used the method of analyzing students' essays on the topic "Compare Russian and American Values". The essay on the given topic made it possible to see the students' understanding of the peculiarities of the country of the studied language. The assignment was suggested as a homework assignment. The total score was given using a 10-point scale, which combined the grade for the essay (a 5-point scale) and the grade for the oral answer on the topic (a 5-point scale). For the subsequent application of the Pearson criterion, the following levels were taken: the low level corresponds to the satisfactory grade, average to the good grade, high - to the excellent grade.

The level of the student's cognitive activity is the sum of the levels of the components of the studied phenomenon. Thus, it was possible to collect experimental data on 90 freshmen of the Russian State Agrarian University - Moscow Timiryazev State Agricultural Academy of the Institute of Mechanics and Power Engineering named after V.P. Goryachkin of the training program "Agroengineering". The average age of students was 19 (75% boys and 25% girls). To compare the control and experimental groups, the corresponding samples of 45 people were formed. The general analysis of the data obtained during this stage of the experiment showed that 28 students (62%) from the experimental group are characterized by low level of the formed cognitive activity, 11 (25%) – average level, 6 (13%) – high level. In the control group, the results are approximately the same: 26 students (58%) are characterized by a low level of formed cognitive activity, 12 (27%) – average, 7 (15%) – high.

At the formative stage of the experiment, the teacher carried out methodological work with all participants in the didactic process to master the functional capabilities of Quandary. The software and hardware implementation was worked out: the transition levels, their task content, the communication model to support the cognitive activity of students were clarified, experimental data were processed, the research results were analyzed and summarized, methodological recommendations were developed, the research results were introduced into the practice of other teachers.

Research results

In its most general form the mechanics of cyberquests in the Quandary environment can be described as follows: the student moves around the game location in search of interactive objects to obtain educational material and solve the proposed problems. Interactive objects (concepts, terms) are visualized objects of virtual space that can interact with the player in a special way. Static objects are used for content of the quest (questions, tasks). The types of interaction implemented are quite diverse: launching a browser and going to a page with materials of an educational Internet resource, launching dialog boxes and program scripts, displaying messages in a graphical chat, one-time or cyclic playback of a short sound fragment, changing the appearance (changing texture, transparency, etc. etc.). In the course of the study, two main types of cyberquest organization strategies were used: the "Control" strategy and the "Training" strategy. The "Control" strategy provides for a separate control node in the cyberquest system. The quest used four main mechanics: "Assembling the parts of the whole"; "Experience rating"; "Maintenance of an interactive object"; "Successive activation". The choice of this or that mechanics is determined by the structure of tasks and methodological concept. For example, if it is necessary that the tasks are performed sequentially, from the first to the last, for example, when the complexity of tasks is increasing, then it is advisable to use the mechanics model "Sequential activation". If the sequence of the tasks does not matter, then models "Experience rating" and "Maintenance of an interactive object" can be used in turns so that the cyberquests are not monotonous. If the tasks are divided into thematic categories and the sequence of the categories does not play a significant role, then "Assembling the parts of a whole" is the most effective.

The base of tasks included 10 test tasks of open and closed type. For example, for the module "Professions of the future" it was required to determine: which specialist's work is related to engineering and technology; in the course of his/her work which specialist should conclude contracts with suppliers of machinery and equipment; what science is engaged in the development of new technologies in agriculture with their further implementation in practical use; choose the reasons why specialists in the agricultural sector should know English, etc. Based on the results, the system recommended one of the following professions to students: Agroi informatics / Agrocybernetic, City Farmer, GMO Agronomist, Bio-hacker. Figure 1 shows an example of a location and entering the next level.

Figure 1 An example of the implementation of the task in the cyberquest "Professions of the future"

For the "Control" strategy, upon completion of the task, the system automatically gives a score, saves the result in pivot tables and blocks repeated access to the task. In this case, knowledge and skills are analyzed, according to the results of which the tutor monitors the level of competence formed. The results of the tasks are used to create a ranking of the participants. The system takes into account not only the correct answers to the questions, but also the time spent by each student. Initially, the project was planned as a multi-user one, but in the process of discussing the issues of technical implementation and methodological expediency, it was decided to develop a local solution. Requirements for the Internet connection are not critical here.

Thus, the development of a cyberquest based on virtual worlds for learning a foreign language online was divided into 9 stages: determining the target audience; goals and objectives of training; creation of a database of tasks and materials; development of a game legend, concepts of locations, characters and game mechanics: creating the necessary images and communication models for a cyberquest; assembly of the game world; programming of interactive elements and implementation of the base of tasks in the cyberquest; testing; publication. The development of the cyberquest was focused on the needs of implementation of the methodological concept of the course and implementation of the prepared base of tasks and materials. However, sometimes there were problems associated with difficulties in implementation of some forms of assignments. Here, to a large extent, a significant difference was found between face-to-face and distance learning. For example, it was noticed that when creating tasks for distance courses of any kind, implemented using web technologies, one should, if possible, avoid open tasks. These, for example, are the tasks "finish the sentence", "write the correct answer in brackets", "briefly summarize the essence of what you read", etc. Implementation of such tasks involves the user entering the answer from the keyboard. In other words, the automated system is not able to evaluate the correctness of the answer if the user puts an extra space somewhere, or an uppercase character instead of lowercase, etc.

At the fixing stage of the experiment, the second measurement was carried out – questioning the participants of the experiment in accordance with the criteria described above. The assessment of the motivational, cognitive, activity components of the phenomenon of the cognitive activity was made. Graphically, the dynamics of the formation of the students' cognitive activity is shown in Fig. 2.

Figure 2 Dynamics of formation of the cognitive activity

For the statistical analysis of the obtained experimental data, the results of the essays given in Table 1 were used (it was indicated in the research program). Further, the Pearson χ^2 (chi-square) criterion was used.

Table 1

Essay results

Level	The number of tested (people)			
	Experimental group (45 students)		Control group (45 students)	
	Before	After	Before	After
High	2	10	3	7
Average	23	28	22	20
Low	20	7	20	18

The following hypotheses were accepted: H_0 : the level of knowledge, skills and abilities that constitute the basis of the foreign language communicative competence of students in the experimental group is statistically equal to the level of skills and abilities of students in the control group; hypothesis H_1 : the level of students in the experimental group is higher than the level of students in the control group.

We calculate the value of the criterion statistics before ($\chi^2_{\text{obs.1}}$) and after ($\chi^2_{\text{obs.2}}$) of the experiment using the online resource <http://medstatistic.ru/calculators/calchit.html>. Let's choose the significance level $\alpha = 0,05$. In this case, $c = 3$, which means that the number of degrees of freedom $v = c - 1 = 2$. According to the distribution tables χ^2 for $v = 2$ and $\alpha = 0,05$, the critical value of the statistics is 5.99. Thus, we obtain: $\chi^2_{\text{obs.1}} < \chi^2_{\text{crit}}$ ($0,22 < 5,99$), $\chi^2_{\text{obs.2}} > \chi^2_{\text{crit}}$ ($6,70 > 5,99$). According to the decision rule, this means that before the experiment, hypothesis H_0 is correct, and after the experiment, hypothesis H_1 is correct. So, an increase in the level of the cognitive activity, high grades of students from the experimental group confirm the importance of the proposed approach to the organization of foreign language communication activities.

Discussion

The general analysis of data received from first-year students of the training program "Agroengineering" during the control stage of the experiment in the experimental group, showed that 15 students (33%) are characterized by a high (advanced) level of the formed cognitive activity, 21 students (47%) – average (sufficient) level and only 9 students (20%) – low (elementary) level. In the control group, the results are different: 9 students (20%) are on high level of the formed cognitive activity, 16 (36%) – average, 20 (44%) – low. As it can be clearly seen from the totality of the applied diagnostic techniques, the formation of the cognitive activity of students of Institute of Mechanics and Energy named after V.P. Goryachkin in the course of online learning a foreign language, supported by the virtual environment of the educational quest has a positive trend. The students showed an increase in motivation, curiosity, purposefulness, the formation of a priori positive perception of new knowledge, in a word, an increase in the level of the formed cognitive activity.

Thus, summarizing the results, we conclude that the main effects of using the cyberquest when online learning can be formulated as follows: reducing the influence of negative

psychological effects; positive motivation of students; strengthening the effect of involvement in the educational process; updating of electronic educational material; formation of the foreign language communicative competence in a playful way. The characteristic features of the cyberquest are: aesthetics and creation of overall gaming experience that promotes greater emotional engagement; the use of scenario elements characteristic of the gameplay, such as virtual awards, for example, statuses, points, etc.; dynamics requiring the user's attention and reaction; foreign language communication and a wide range of mechanics that provide interaction between participants, typical for computer games. The main elements of the cyberquest mechanics are: teaching materials and a base of tasks; software resource; virtual location; interactive and static objects.

Conclusion

Based on the analysis and generalization of the possibilities of cyberquests for online learning, priorities for the development of web technologies, gamification services, the authors reasonably highlight a promising direction in new educational realities - the use of game mechanics to support the cognitive activity of students when studying a foreign language. The effectiveness of the identified opportunities in the cyberquest environment during online learning for formation of the foreign language communicative competence and improving the quality of educational results is realized due to:

- a nonlinear path of movement along the nodes of the quest, which more corresponds to the ways of presenting and processing information by the human brain (this way of perceiving information is similar to hypertext navigation used in all Internet resources, and therefore it is well known and intuitively understood by the learner);
- solving problem situations of the practice-oriented nature, taking into account future professional functions and responsibilities;
- a combination of entertainment and cognitive components, thus preventing learning from being completely transformed into a game.
- the use of not only text fragments, but also images, sound and multimedia files.

All this works to ensure such fundamental didactic principles as visibility, accessibility, systematicity, and, ultimately, for easier and more effective assimilation of the educational material. In addition, as the experiment convincingly proved, motivation and involvement of students increases, additional conditions are created for development of the cognitive interest, professional self-determination, and active foreign language communication.

The competent and methodologically grounded use of educational quests when online learning contributes to formation of a stable interest in reading, develops the ability to extract information from text questions and illustrations, teaches how to compare, summarize and transform information from previously studied texts, make an independent decision and act in accordance with the assigned task. It seems appropriate to use educational quests at the stage of consolidating knowledge. In this case, they will have the maximum educational effect, since the student, who already possesses a certain stock of knowledge, abilities, skills on the topic, will be able to go through the quest consciously, making not spontaneous (random), but rational, balanced decisions. This will allow to generalize and systematize the available knowledge, provide a holistic perception of the studied topic. The advantage of using the virtual environment of the quest is that students, as before, work according to a strictly defined and sequential scheme developed by the teacher in accordance with the

goals and objectives of learning, the current level of language proficiency, and pass control. All educational activities are carried out against the background of the foreign language communicative environment, which adds to this process the opportunity to immediately test the skills acquired during training.

This approach to using the capabilities of the cyberquest allows to fully implement online teaching of a foreign language and provide active speech practice in the context of distance education.

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