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Development of senior school students' independent work skills through the use of virtual learning environment

The article is focused on the concept of «virtual learning environment» and its role in the students' independent work. The virtual learning environment as a means of effective communication of participants in the educational process helps to transit from the «knowledge-based» paradigm to the «personality-oriented» education, aimed to develop students' creative potential, their cognitive activity, motivation and engagement at the language classes. The authors highlight that in addition to traditional didactic requirements, there are a number of specific conditions for the successful functioning in the virtual learning environment. Based on the experience of implementing virtual educational environments, a need for the adaptability of educational process, which implies the possibility for students to choose the most appropriate individual pace for studying material. It is shown that specific content of the virtual learning environment may vary depending on the level of training students and their individual interests. The main requirement for the successful use of the virtual environment is to develop creative cognitive abilities, foreign languages skills of students by the application of a virtual environment., so the authors come to the conclusion that the presence of informational technology in the learning process changes the internal specifics of the educational and cognitive activities of students, their thinking style, and psychological mechanisms of mental development. Thus, the independent work of students is multi-purpose and is aimed to achieve communicative and educational goals.

Keywords: informatization, virtual learning environment, teaching methods, students' independent work, independent work skills, adaptability of the educational process, visualization of presented information.

Introduction

Scientific and technological progress has led to digitalization, the informatization of many aspects of modern society activities. Informatization of society provides and accelerates the continuous development and improvement of the intellectual potential of the society, thanks to quick access to sources of reliable information, visualization of presented information.

Informatization has, probably, introduced some changes into the education system as well. As you know, education is one of the main institutions for the formation of both an individual and society. Therefore, the investigation of the issue of informatization impact on various aspects of the educational process seems relevant.

Study of foreign languages is important since foreign languages knowledge and skills nowadays are the key to international cooperation, communication. Therefore, the study of foreign languages requires careful selection of the methodical instruments.

Transition from the «knowledge-based» paradigm to the «personality-oriented» education, aimed to develop students 'creative potential, their cognitive activity; the role of students' independent work is growing. Many research works of both foreign and Kazakhstan`s researchers are devoted to this problem [1]. The issue of developing students' independent work skills was raised in pedagogy of the educators and researchers of twentieth century such as Ushinsky K.D., Kapterev P.F., Vakhterov V.P. and others. In their works the methodology of teaching schoolchildren to independently obtain information through experiment, observation is scientifically substantiated and determined.

The importance and necessity of forming independent work skills is considered in the research of Kazakhstan`s scientists, who emphasize that independent work of students is multi-purpose and it is aimed to achieve communicative and educational goals [2].

In foreign literature, independent work is often interpreted as «independent and self-regulatory learning» [3; 4]. Literature review revealed not only various definitions of independent work concept, but also the

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justification of advantages of students' independent work within educational activities. Works of I. Cunningham, J. Hsu, C. Hamilton. J. Wang, S. Virtanen emphasize that students` cognitive activity depends on a number of external and internal factors, among which the ability to work independently stands out [5]. Studies conducted by scientists from the UK and the Netherlands showed that in the conditions of «self-regulatory learning» students become more motivated and are more involved actively in the learning process. B. Meyer, N. Heywood, D. Sachdev, S. Faraday have identified in their work a number of skills that students need to acquire for successful independent activity [6].

The study of scientific and methodological literature sources shows successful experience of organizing students' independent work using a number of teaching methods and means. So, the problem of developing independent skills in the university educational process is analyzed in the scientific work of D. Pedrosa, J. Cravino, L. Morgado, C. Barreira. A set of tasks for independent work of students in computer programming was proposed as a learning tool [7]. The work of C. Yot-Domínguez, C. Marcelo examines the self-regulatory education of university students using digital in combination with other pedagogical technologies allowed E.M. Lyubimova, E.Z. Galimullina, R.R. Ibatullin to develop a hypothesis that their integration ensures the interactivity of the educational process and contributes to the development of students` independent work skills [8].

The situation of the coronavirus pandemic, when the greatest emphasis in education is on independent work, showed the need for a developed system of methods of work in virtual educational environment. Not only tools of work, yet the control and assessment system should be reviewed.

Materials and Methods

Let`s consider the study of this issue as a part of the educational process at school, where person just starts to get acquainted with foreign language and obtains basic skills. We should figure out how applicable are the techniques and methods of digital technologies usage in the development of school students` independent work skills.

Due to global informatization of education there appeared a concept of «virtual learning environment». In the methodological literature, the virtual educational environment is interpreted as the communicative capabilities of global computer networks for educational purposes use [9]. The virtual learning environment is a means of effective communication of participants in the educational process. Virtual learning environment was investigated by such researchers as A.Yu. Uvarov, V.P. Tikhomirov, I.V. M.P. Shishkina, A.V. Farmstead. Scientist A.Yu.Uvarov considers the virtual environment as an open educational architecture object with the main goals, methods and organizational forms, there is a plexus of communication, information and physical space [10]. A.V. Khutorskoy believed that the virtual educational environment is, first and foremost, a system of influence and conditions for the formation of an individual according to the basic set pattern [11]. M.P. Shishkina notes that «virtual learning environment» is a widespread concept, and in this concept or in some synonymous with it there are different meanings that can be invested, for example, as «software or a platform that is used to provide educational services» [12]. This environment can be considered as «a set of integrated learning tools that allow you to manage online learning, providing an appropriate management mechanism, monitor the learning process of students, evaluate the success of training and provide access to resources». According to the professor of the Helsinki University T. Seppo, «in a virtual environment, information and communication resources are consistent with the processes of communication and activity, forming some integrity, are integrated into a single system, through which meaningful learning is supported and directed [13]. Back in 1999, the American scientist H. Pimentel emphasized the importance of on-line learning and described the virtual learning environment as a learning environment that allows you to learn, evaluate situations, perform actions necessary for learning, and carry out necessary research activities; helps to perform tasks much better than in a normal, traditional sutiations» [14].

Thus, the virtual learning environment involves primarily the interaction of the subjects of the educational process with information and communication technologies. The role of the virtual learning environment is inexhaustible for the development of students' independent work skills if they follow all requirements in their use.

The methodically competent use of the virtual learning environment is carried out by observing traditional didactic requirements in accordance with the didactic principles, such as ensuring the visibility, scientific content, consciousness of the learning process, the requirement for a systematic and consistent teaching, as well as the unity of educational and training functions.

However, in addition to traditional didactic requirements, there are a number of specific conditions for the successful functioning in the virtual learning environment. Based on the experience of implementing virtual educational environments, it is noted that there is a need for the adaptability of a higher education institution (virtual learning environment), which implies the possibility for students to choose the most appropriate individual pace for studying material [15].

There is a requirement of feedback in the learning process, which means the need for control, correctness of the student's actions, development of recommendations for his further work.

The virtual learning environment (VLE) should provide the learner with the possibility of controlled training activities variety in order to gradually increase the students' intradisciplinary level of knowledge at the level of assimilation sufficient for the implementation of algorithmic and heuristic activities.

Also, the requirements for the VLE include the condition for the effective and justified use of resources, their testability, simplicity, reliability and completeness. Also important is the possibility of combining electronic and paper media [16].

However, the main requirement for the methodically correct work within the virtual learning environment is orientation to the state education program.

The state education program quite clearly sets the criteria for assessment of foreign language skills of a graduate of a secondary school in four types of speech activity (reading, writing, listening, speaking).Then the next question arises: is it possible to use the Internet, a computer, an interactive whiteboard in the formation of both oral and written communication in the development of grammatical, lexical topics? This question can only be answered by subjectively analyzing the topics presented in the state program on English as a school subject for the corresponding class. So, in the 9th grade of secondary schools, the following lexical topics are studied: Traveling, «Theater and Cinema,» «Media,» and «Environment.» Along with the lexical topic, it is also supposed to study grammatical themes, such as: «Gerund \ Infinitive», «Prepositions of place, time», «Phrasal verbs»[17].

Major role in formation of students` independent skills plays problem-based teaching methods. Even J. Dewey noted that true knowledge is obtained only when a person obtains it by himself. So, to understand the differences between the two grammar categories of the gerund and the infinitive, it's not enough just to show students the rule, force them to memorize it, but it will be more effective if the students themselves formulate the rule, find and understand the differences in the use of these categories. It is advantageous for students to practice their use in situational dialogues and polylogues. The AnkiDroid application will come to the aid of the teacher. The application database contains more than 6000 ready-made flash cards, it is enough to enter the desired theme, the application will immediately suggest several different offers that carry the main features of a given topic; put forward a hypothesis, discuss with other students and formulate a rule. To identify difficulties connected with the assimilation of the material, it is enough to click again to show new offers on the same topic. If the lesson is not a presentation of a new grammatical topic, but it is aimed to enhancing skills, bringing the use of the «gerund-infinitive» rule to automatism, then you can use the English club website, which offers many different kinds of tasks to any topic from the English course. The main advantage of using this site is that the program itself tells where the error was made, the student remains to think about how to fix the error, introduce a new option and the system accepts or does not accept the answer again. Thus, the teacher acts only as a coordinator, easily guiding the student; the student is no longer dependent on subjective assessment, is not afraid of ridicule of his classmates in case of unsuccessful attempt, and the desire to obtain approval of program gives motivation to figure out the problem.

However, is it possible to develop creative cognitive abilities, foreign languages skills of students by the application of a virtual environment, because languages primarily are means of communication. Let us consider the possibility of solving this problem by studying the lexical topic, grade 9 of the secondary school «Mass Media» as an example.

In this regard, such teaching methods as debate and discussion have great potential and possibilities. It is known that in the educational process, debates are often used as a technology aimed at developing students' analytical thinking, tolerance, a culture of dialogue and communication skills. HelloTalk is one of the best educational platforms where you can join to the conversation with native speakers from around the world. You can find an appropriate partner using a convenient search by country, city, age or other criteria. There is an opportunity to hold a debate on the dangers and benefits of the media for students with peers from abroad. During the debates the student is actively included in the search educational and cognitive activity, focused on internal motivation. The exchange of experience, adaptation to various accents and pronunciation features of a particular region — all these are the features of the linguistic-culturological approach

to the study of foreign languages, which replaced the traditional one that developed back in the days of the Soviet Union, when the language was studied apart from culture. In the course of the now accessible lesson format, a second linguistic personality is formed. The pedagogical role of the debate has already been considered in a number of studies, the effectiveness of this technology in the formation of students' independence is undeniable.

Ororo.tv is a web-site that provides access to the latest TV series and some films with subtitles in different languages, which can be turned on and off at the request of the viewer. Watching films and TV series in the original is of great importance in the process of teaching foreign languages, since it is based on one of the basic methodological principles — the principle of clarity. While watching the video, all types of speech activity are involved. As you know, seen and heard information is remembered five times better than just heard. Viewing authentic video materials is also an effective means of increasing student motivation to learn a foreign language, since they demonstrate the functioning of the language in the form accepted by its native speakers in a natural social context, introduce the norms and rules of communication and behavior, show various types of relationships and illustrate the language of facial expressions and gestures. Video is a unique tool for teaching speaking and foreign language communication.

BBC Podcasts. BBC radio stations have a wide range of topics that, in the absence of subtitles, will be useful to listen to as a kind of background, which will turn the listener into a state of «flow» and create the illusion of «complete immersion» in an authentic environment. Due to the sensation of the «streaming» state, forgotten knowledge of grammar and vocabulary begins to activate by itself, and the melody of the language itself is caught, which is also important when teaching speaking. It should be noted that in such radio programs as, for example, BBC Learning English — 6 minute English, the hosts of podcasts are native speakers, so that it is possible to listen and learn living language in the form in which it is used ordinary residents of English-speaking countries, then there is used authentic material. Podcasts are divided into 3 levels: the first is for beginners (elementary), the second is for learners with an average knowledge of English (lower-intermediate and intermediate), and the third is for learners with an upper-intermediate level. The advantage of the BBC Learning English project is that the speech rate of the voiced dialogues is different, depending on the level of language training. 6 Minute English contains passages from the BBC's English dialogues and explanations of new English words and phrases.

Let`s consider another possibility of virtual learning environment for students to create independently some projects within the topic «Environment». This task contributes to the development of cognitive independence of students. Pinterest can help students complete a project. Students and teachers from around the world share their ideas for crafts, projects, and creative ideas. If a student completes successfully the project, he can put his idea on this platform (Pinterest), which may inspire others who are still in search. For the presentation of the project, the student can use an interactive whiteboard. Only by using personal experience, the student can decide for himself what was useful for his speech, what strategy was successful, how to stand in front of the audience and speak reasonably.

Electronic teaching materials can be created on the basis of various software systems. The most common of them are LMS (Learning Management Systems), LCMS (Learning Content Management Systems), such as Moodle, Blackboard, etc. These systems are inherently Internet sites with limited capabilities for the presentation of educational materials, but they so far the most accessible to educational institutions. Less common, but more effective in the educational process are authoring software developments. In this case, e-learning materials are created by programmers in cooperation with teachers — methodologists for the creation of e-content, which means that the teaching capabilities of computer technologies are realized to a greater extent.

Results and Discussions

So, among the above-described applications that form a virtual learning environment, there may be web resources, mail servers, forums, tools for holding virtual conferences, blogs, social spaces, as well as tools for monitoring, evaluating the effectiveness of training and learning management.

The specific content of the virtual learning environment may vary depending on the level of training of students, their individual interests. The main requirement for the successful use of the virtual environment is the availability of the entire set of resources to students through a single-entry point, and, of course, data must be synchronized to the teacher's computer to monitor the process. The virtual learning environment also has a content management function: its development, storage and use; planning and scheduling classes, evaluating results, as well as personalizing learning experience; administration and involvement of students.

This means controlled access to information about students and monitoring their progress and achievements; communication and collaboration.

Conclusions

Generalizing all above mentioned, we conclude that the very presence of informational technology in the learning process changes the internal specifics of the educational and cognitive activities of students, their thinking style, and psychological mechanisms of mental development. In this case, the computer acts only as a «smart» tool, and the interaction of participants in the educational process with modern technologies comes to the fore. The virtual learning environment is an effective means of forming and developing students' independent work. In this context, the priority is given to the professionalism and competence of the teacher. His ability to methodically competently organize the work of students with a virtual environment creates optimal conditions for a productive educational process. The development of students' independent work skills and improvement of their cognitive abilities opens up great opportunities in the formation of competitive specialists.

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Жоғары сынып оқушыларының виртуалды оқыту ортасын пайдалана отырып өз бетінше жұмыс істеу дағдыларын дамыту

Мақалада «виртуалды оқыту ортасы» ұғымы және оның жоғары сынып оқушыларының өзіндік жұмысындағы орны қарастырылды. Оқытудың виртуалды ортасы білім беру үрдісінде

қатысушылардың тиімді қарым-қатынас құралы ретінде «білім» парадигмасынан жоғары сынып оқушыларының шығармашылық әлеуетін, олардың танымдық белсенділігі мен ниеттерін дамытуға, сондай-ақ шетел тілі сабақтарына қатысуының «тұлғаға бағытталған» білімге көшуге ықпал етеді. Авторлар дәстүрлі дидактикалық талаптардан басқа, виртуалды оқу ортасында сәтті жұмыс істеу үшін, бірқатар нақты жағдайлар бар екенін атап өтеді. Виртуалды білім беру ортасын енгізу тәжірибесіне сүйене отырып, оқыту үрдісінде бейімделуі қажет, бұл жоғары сынып оқушыларының материалды зерттеудің ең қолайлы жеке таңдау мүмкіндігін білдіреді. Виртуалды оқу ортасының нақты мазмұны жоғары сынып оқушыларының дайындық деңгейіне және олардың жеке мүдделеріне байланысты өзгеру мүмкіндігі көрсетілген. Виртуалды ортаны тиімді қолданудың негізгі талабы ретінде бұл ортаны қолдану арқылы жоғары сынып оқушыларының шығармашылық танымдық қабілеттерін, шетел тілдерін меңгеру дағдыларын дамыту болып отыр, сондықтан авторлар оқу үрдісінде ақпараттық технологиялардың болуы студенттердің оқу-танымдық іс-әрекетінің ішкі ерекшелігін, олардың ойлау стилі мен психологиялық даму үрдістерін өзгертеді деген қорытындыға келеді. Осылайша, студенттердің өзіндік жұмысы көп мақсатты болып, сонымен қоса коммуникативтік және білім беру мақсаттарына қолжеткізуге бағытталған.

Кілт сөздер: ақпараттандыру, оқытудың виртуалды ортасы, оқыту әдістері, студенттердің өзіндік жұмысы, өз бетінше жұмыс істеу дағдылары, білім беру процесінің бейімділігі, ұсынылған ақпараттың көрнекілігі.

У.И. Копжасарова, З.Е. Султанова, Д.Р. Ахметова, А.И. Ахметжанова, К. Де Веро

Развитие навыков самостоятельной работы с использованием виртуальной среды обучения у старшеклассников

В статье рассмотрены понятие «виртуальная среда обучения» и ее роль в самостоятельной работе старшеклассников. Виртуальная среда обучения как средство эффективного общения участников образовательного процесса способствует переходу от парадигмы «знания» к личностно-ориентированному образованию, направленному на развитие творческого потенциала старшеклассников, их познавательной активности и мотивации, а также участие на занятиях по иностранному языку. Авторами отмечено, что, помимо традиционных дидактических требований, существует ряд специфических условий для успешного функционирования в виртуальной учебной среде. Исходя из опыта внедрения виртуальных образовательных сред, возникает потребность в адаптивности учебного процесса, что подразумевает возможность выбора старшеклассниками наиболее подходящего индивидуального темпа изучения материала. Показано, что конкретное наполнение виртуальной учебной среды может варьироваться в зависимости от уровня подготовки обучающихся и их индивидуальных интересов. Основным требованием для успешного использования виртуальной среды является развитие творческих познавательных способностей, навыков владения иностранными языками у старшеклассников путем применения виртуальной среды, поэтому авторы приходят к выводу, что присутствие информационных технологий в процессе обучения меняет внутреннюю специфику учебно-познавательной деятельности учеников, их стиль мышления и психологические механизмы развития. Таким образом, самостоятельная работа старшеклассников является многоцелевой и направлена на достижение коммуникативных и образовательных целей.

Ключевые слова: информатизация, виртуальная среда обучения, методы обучения, самостоятельная работа старшеклассников, навыки самостоятельной работы, адаптивность учебного процесса, визуализация представленной информации.

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