IRSTI 14.25.07

10.51889/2959-5894.2024.88.4.028

B.K. Smagul[1*], B.D. Sydykhov[1], G.Zh. Anuarbekova[1]

[1]Abai Kazakh National Pedagogical University, Almaty, Kazakhstan
[*]*e-mail: botashka-93bk.ru*

METHODOLOGY FOR DEVELOPMENT OF INTELLECTUAL ABILITIES OF SCHOOLCHILDREN BASED ON DIGITAL TECHNOLOGIES

Abstract

The article discusses the use of digital technologies, as well as active teaching methods for the development of students' intellectual abilities. In addition, one of the urgent problems of our time was discussed – the use of digital educational technologies in school education. In the article, its relevance was determined and studied by a number of factors. The article examines the need to bring educational institutions of modern society as close as possible to modern digital technologies. The psychological and pedagogical literature compares and analyzes the insufficient development of the methodology of this problem, the need to improve specially developed teaching methods for digital technologies and the development of intellectual abilities of schoolchildren. The ways of solving the problems caused by the lack of equipment for the use of new information technologies in schools and in-depth education of children in the digital education environment are proposed. The article examines the possibilities of using the digital educational environment in the educational process and its impact on the formation of intellectual abilities of schoolchildren. The article also examines a number of needs in the development of pedagogical conditions for the development of intellectual abilities of older and preschool children in the process of using the digital educational environment in educational organizations. The authors of the article intend to further improve their methodology.

Keywords: education, digital technologies, methods, educational process, analysis, training.

Б.Қ.Смағул[1], Б.Д.Сыдыхов[1], Г.Ж. Ануарбекова[1]
[1] Казахскийнациональный педагогический университет им. Абая, г. Алматы, Казахстан

МЕТОДИКА РАЗВИТИЯ ИНТЕЛЛЕКТУАЛЬНЫХ СПОСОБНОСТЕЙ ШКОЛЬНИКОВ НА ОСНОВЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ

Аннотация

В статье рассматриваются вопросы использования цифровых технологий, а также активных методов обучения для развития интеллектуальных способностей учащихся. Кроме того, обсуждалась одна из актуальных проблем современности – использование цифровых образовательных технологий в школьном образовании. В статье ее актуальность определялась и изучалась рядом факторов. Исследуется необходимость максимально приблизить образовательные учреждения современного общества к современным цифровым технологиям. В психолого-педагогической литературе сопоставляются и анализируются недостаточная разработанность методологии этой проблемы, необходимость совершенствования специально разработанных методов обучения к цифровым технологиям и развитие интеллектуальных способностей школьников. Предложены пути решения проблем, вызванных отсутствием оборудования для использования новых информационных технологий в школах и углубленного обучения детей в среде цифрового образования. В статье рассматриваются возможности использования цифровой образовательной среды в образовательном процессе и ее влияние на формирование интеллектуальных способностей школьников. В статье также изучен ряд потребностей в разработке педагогических условий развития интеллектуальных способностей детей младшегои старшего возраста в процессе использования цифровой образовательной среды в образовательных организациях. Авторы статьи намерены и дальше совершенствовать свою методологию.

Ключевые слова: образование, цифровые технологии, методы, учебный процесс, анализ, обучение.

Б.Қ. Смағул[1], Б.Д. Сыдыхов[1], Г.Ж. Ануарбекова[1]
[1]Абай атындағы Қазақ ұлттық педагогикалық университеті, Алматы қ., Қазақстан

ЦИФРЛЫҚ ТЕХНОЛОГИЯЛАР НЕГІЗІНДЕ МЕКТЕП ОҚУШЫЛАРЫНЫҢ ЗИЯТКЕРЛІК ҚАБІЛЕТТЕРІН ДАМЫТУ ӘДІСТЕМЕСІ

Аңдатпа

Мақалада цифрлық технологияларды, сондай-ақ оқушылардың интеллектуалдық қабілеттерін дамыту үшін оқытудың белсенді әдістерін қолдану мәселелері қарастырылады. Сонымен қатар, қазіргі заманның өзекті мәселелерінің бірі – мектепте цифрлық білім беру технологияларын қолдану талқыланған. Мақалада оның өзектілігі бірқатар факторлармен анықталды және зерттелді. Қазіргі қоғамның білім беру мекемелерін заманауи цифрлық технологияларға барынша жақындату қажеттілігі зерттелген. Психологиялық-педагогикалық әдебиеттерде осы мәселенің әдіснамасының жеткіліксіз дамуы, цифрлық технологияларға оқытудың арнайы әзірленген әдістерін жетілдіру қажеттілігі және оқушылардың интеллектуалдық қабілеттерін дамыту салыстырылады және талданады. Мектептерде жаңа ақпараттық технологияларды қолдануға және цифрлық білім беру ортасында балаларды тереңдетіп оқытуға арналған жабдықтардың болмауынан туындаған мәселелерді шешу жолдары ұсынылды. Мақалада білім беру процесінде цифрлық білім беру ортасын пайдалану мүмкіндіктері және оның оқушылардың зияткерлік қабілеттерін қалыптастыру әдістемесі зерттелді. Мақалада сонымен қатар білім беру ұйымдарында цифрлық білім беру ортасын пайдалану процесіндекіші және үлкен жастағы балалардың зияткерлік қабілеттерін дамытудың педагогикалық жағдайларын әзірлеудің бірқатар қажеттіліктері зерттелген. Мақала авторлары өз әдістемелерін әрі қарай жетілдіруді көздеп отыр.

Түйін сөздер:білім беру, цифрлық технологиялар, әдістер, оқу процесі, талдау, оқыту.

Main provisions

The study is devoted to the development and application of a methodology for developing intellectual abilities of schoolchildren using digital technologies. The main idea is to integrate digital tools to develop critical thinking, logical analysis, creative and analytical skills of students. The study proved that the use of digital technologies increases motivation for learning and allows you to adapt the educational process to the individual characteristics of schoolchildren. The results show that digital methods contribute to the development of such skills as analysis, synthesis, comparison and abstraction. The conclusion is that modern digital approaches are an effective means for the intellectual development of schoolchildren in a dynamically changing educational environment.

Introduction

Reforming the education system, which is the main condition for rapid socio-economic growth. Social development, development and stability of the country are considered a necessary condition for creating an innovative economy. The competitiveness of a country's education system is an important component of global competitiveness. There must be constant technological innovation. The rapid development of innovation and rapid adaptation to the needs and requirements of a rapidly changing world, as well as access to quality education, are one of the most important values in people's lives and one of the main factors of economic justice in the world. society. and society. political stability [1].

Changes in the nature and results of modern education correspond to its main goals and content, giving special importance to the development of creative abilities and independence of schoolchildren. Important aspects are increasing their competitiveness, acquiring flexible skills and improving the quality of education. The system of higher professional education should prepare specialists capable of making informed and responsible decisions in the conditions of a dynamically developing society.People who can foresee possible consequences. People who can work together are flexible, dynamic, creative, capable of self-improvement, respectful and competent. Ethics and entrepreneurship are responsible for the fate of the country [2]

Currently, the process of dissemination of social information has accelerated significantly. Profound changes are taking place in all spheres of human life. The importance of both production

and consumption of information is growing. For the successful development of modern society, higher education plays a key role in the creation and implementation of new ideas. It is characterized by openness, readiness to perceive new things, critical thinking and the ability to view the world holistically, as well as to find effective solutions to emerging problems.From this point of view, educational activities in schools are gradually developing today. It is no longer possible to limit ourselves to giving and receiving information. The purpose of school is to develop educated, intelligent, educated and effective thinkers and to acquire the necessary skills and qualifications. They can independently develop their knowledge throughout their lives, since the time needed to successfully assimilate the necessary information is limited. Therefore, it is necessary to find and implement ways to optimize the educational process in schools: reinforcement lessons. Using innovative teaching methods to support students' cognitive and intellectual development. and develop the communication skills and abilities necessary for effective learning [3].

Research Methodology

The main types of digital technologies include mobile learning, cloud computing, online courses, gaming, and online assignments. Mobile learning technologies are gaining popularity in the education sector. The continuous development of digital learning technologies is the ultimate goal of business education, enabling students to develop competitive value and become qualified professionals. Therefore, the main role of teachers is to use digital technologies in the learning process, taking into account the individual capabilities of students. The modern labor market requires training for skilled workers and creates new requirements for the use of innovative technologies in education. We are currently looking for graduates with a background in digital technologies. One of the main goals of educational institutions is to provide students not only with theoretical knowledge, but also with the skills to use information technology, to independently receive and analyze information [4].

Universities should increasingly use digital technologies and modern textbooks and learning media based on technology. Digital educational technologies are a new approach to conducting educational lessons using electronic systems. The use of digital technologies is aimed at improving the quality and efficiency of the educational process and the successful socialization of school-aged children. Many researchers believe that the development of digital technologies in the education system is the result of reducing workload and developing independent learning. Therefore, digital educational technologies are actively used to support and improve the quality of education, ensure mutual cooperation between teachers and students, and quickly eliminate students' knowledge deficits [5].

The possibilities of digital technology for student learning include:

- Good flexibility when performing activities and learning materials;
- Increasing children's activities in school;
- Personalizing the learning process;
- Increasing the visibility of the materials;
- Direct feedback to the teacher;
- School children can see the results immediately after completing the activity.

Scientists believe that since digital technology is an important part of social life, learners are expected to use various electronic devices in their lives, and their use in the learning process will be easier. It will help you understand information better and process content more easily. Digital technology improves the quality of education by meeting the individual needs of each learner by decentralizing the educational process and setting goals according to the level of education. The use of digital tools allows students to participate in the learning process, moving from passive perception to active action when trying to complete a task [6].

Development of intellectual abilities of school children

Information and communication technology has the ability to influence the thinking process. Creativity, communication skills and humanitarian socialization are solutions to the problems of intellectual development of children in elementary school, high school, and college. Intelligence is understood as a relatively stable structure of human mental abilities. The ability of schoolchildren to

solve various problems and successfully adapt to the digital society plays a key role in the development of their intellectual abilities [7]. There are different types of intelligence - linguistic, logical-mathematical, spatial, interpersonal and others - each of which is used in certain educational and life situations [8]. In the process of learning using digital technologies, children develop important skills: recognizing and analyzing objects, observing and recording their characteristics, making changes and recording results. Digital tools help schoolchildren develop the ability to analyze cause-and-effect relationships, strategically plan their actions several steps ahead, and develop plans and strategies to achieve goals. Such mental operations as observation, classification, comparison, analysis and synthesis become more effective when using digital platforms and software [9]. An important aspect of intellectual development is the ability to highlight details and combine them into a holistic idea of the object or phenomenon being studied. Digital technologies allow students to practice abstraction, concretization and generalization, which helps them better absorb educational material and develop creative thinking.Aggregation facilitates the development of concepts and laws: classification according to any characteristics. This allows larger objects to be grouped into smaller groups or larger compositions. Abstraction is understood as a mental activity that allows abstract thinking about objects and phenomena in another place. Concreteness allows us to move from speculative symbols and properties to specific properties of a particular object. This can lead to thinking that deviates from reality [10]. Active learning tools and methods are used in modern teaching technologies. This includes the use of information and communication technologies. Promotes the development of students' thinking skills. Preschoolers and kindergarteners can think concretely based on visual images and concepts. Give students specific examples. The teacher understands the general properties and features of objects and phenomena. The essence and main characteristics of these concepts consist of a gradual transition from visual-figurative thinking to verbal-logical thinking [11].Although the thinking of preschool and preschool children is related to concrete reality and direct observation and is based on certain logical principles, abstract and formal logical thinking as early childhood education develops raises some problems. They will be given the opportunity to think. Psychological functions analyze and think about one's behavior. And prepare an action plan. Progressive and complex psychological activities promote the development of children's intelligence. The use of images, programs and simulation environments promotes the development of visual thinking and imagination [12]. Figure 1 below shows an exercise that promotes thinking.

Figure 1. Development of thinking in children of primary school age

The lack of cardiac activity further complicates the learning process. Children are encouraged to recognize relationships between information, explore problem structures, and use principles and theories to evaluate new scenarios. The development of logical thinking is supported by activities aimed at solving children's psychological problems. These are logic games, pattern-finding exercises, mathematical problems, logical puzzles [13]. An excerpt from such exercises is presented in Figure 2 below.

Figure 2. Using interactive whiteboards at school

In addition, children are invited to participate in play-related activities, where they imagine and act out play stories on their own. Ways to develop effective visual thinking include assembling pictures using puzzles. Let's try to build structures using cubes and Lego blocks. Introduction of information and communication technologies in education, extracurricular, extracurricular and independent activities of school-age children [14]:

- Allow students to carry out an individual learning path, adjusting the learning process depending on the content, amount and speed of absorption of the learning material.
- Helps to speed up and optimize the learning process.
- Activate students' cognitive activity when using modern application programs with interactive, modeling, communication and multimedia capabilities.
- Increase students' activity and spontaneity during lessons.
- Increase engagement by conveying information in various graphic, audio and video formats.
- Improve the quality of learning results, since it allows repeated practice of acquired skills in realistic situations and use of acquired knowledge in a playful way in new situations.
- Create conditions for forming appropriate self-esteem in students through computer management of learning outcomes.
- Provides favorable conditions for learning and self-development without direct contact between the teacher and the child.
- Increases comfort.
- Improves information and communication skills of students.

Computer technology engages cognitive processes and fosters creativity in young children. Leveraging computer tools for enhancing children's intellectual capacities not only ensures the successful completion of educational objectives but also bolsters cognitive skills and overall personal growth. It cultivates the ability to foresee outcomes of actions and form strategies for effective problem-solving [15]. Techniques and approaches in computer-based education for young learners encompass utilizing multimedia, interactive tools, and e-learning resources, including educational games. Creating educational projects with Logo programming languages like Pervo Logo and Logomir is part of this educational methodology. International internet-based education utilizing hypertext and hypermedia technologies, telecommunications initiatives, research tasks employing computer tools, virtual learning environments, exhibitions, museums, and libraries all contribute to enriching the educational experience. Furthermore, the illustration of knowledge acquisition through auditory means with headphones is depicted in Figure 3 below. Moreover, innovative training systems, along with robotics design and programming, present rich educational resources. Presently, there is a notable integration of e-learning components and technologies within formal education systems [16]. The formulation of educational curricula for young learners hinges on a fundamental pedagogical tenet that emphasizes the incorporation of playful elements to varying extents. This underscores the significance of gaming as a pivotal mode of interaction for children with computing

devices [17]. The visual representation in Figure 4 highlights the importance of presenting educational content in a game format to enhance students' understanding of the material.

Figure 3.Using a laptop to solve tasks

Figure 4.Using an interactive whiteboard in additional education classes

Presently, there is a significant focus on educational tools driven by computers that facilitate a playful approach to learning. This emphasis stems primarily from state mandates and the evolving educational needs of students in both junior and senior school levels. Interactive educational games serve as vehicles for fostering learning processes. Engaging students with computer games in lessons aids in cultivating their motivation to explore new concepts, fosters self-reliance in mastering fresh material, and enhances the development of specific skills and competencies. The digitalization of education has reshaped the paradigms of nurturing and educating primary and secondary school children. The pivotal role played by computers in enhancing the intellectual capacities of preschool and primary school children is now widely acknowledged. While computers offer extensive potential for both gaming and learning, their impact on a child is profound. However, it is crucial to acknowledge that optimal results in the intellectual development of primary and secondary school children can only be achieved through the harmonious interplay between teachers, students, and computers. The efficacy of computer-based educational games and developmental programs hinges on the objectives set by educators, the strategies employed to attain these goals, and the methodologies integrated into instructional practices. Consequently, educators who lead classes within computer-based learning environments play a critical role, with their pedagogical acumen, professional attributes, and adeptness in selecting appropriate computer applications for organizing lessons crucial in fostering the intellectual growth of school-aged children[18].

Results of the study

The studies discussed in the article delve into the digital landscape around young schoolchildren, both at home and in educational settings. The research is based on information obtained from surveys conducted among teachers, academics, parents and students. The main objectives include analyzing the digital environment within families and kindergartens (including access to devices, usage patterns, types of content, levels of adult digital literacy), examining the similarities and differences between home and educational environments in terms of digital socialization, children's digital literacy and the exploitation of digital technologies to develop schoolchildren's intellectual abilities.

The authors of the study came to the following findings and conclusions:

- The home digital environment of preschool children has varying degrees of intensity depending on the age of the children. Children generally have access to several devices with various functionalities, while parents demonstrate relatively high levels of computer literacy. Screen time content often includes educational content that does not always match the age and psychological profile of the child. Almost half of parents do not actively monitor their children's use of gadgets and TV.

- In preschool institutions, the digital environment is mainly designed for adults, used by administrators and teachers of preschools. Software and hardware infrastructure is often of poor quality, which hinders operation and administrative functions. Administrators usually have more

access to devices than caregivers, with most devices being inappropriate for preschool children. Teachers and administrators assess their information and communication technology skills quite positively, but many of them are looking to improve their skills and support children's digital development (a skill that many professionals currently lack) in the future.

- The use of digital devices is limited when it comes to interacting with children, with a sparse distribution of devices intended for children. A small part of teachers focuses on increasing the computer literacy of preschool children. Group-oriented, mainly stationary, technological resources are predominant and serve mainly for educational purposes rather than for leisure activities.

- The integration of digital technology lengthens the educational process, requiring concerted efforts from methodologists and teachers. However, the initiatives taken (or planned) by teachers are often overlooked by parents, who believe that kindergartens have little support for children's digital development. Despite this belief, parents rarely try to improve the situation.

- Parents generally do not consider kindergartens as important agents for children's integration into the digital sphere. Nevertheless, they view teachers' efforts positively, trusting them in the selection of equipment and control over the use of digital technology.

- Teachers display mixed feelings about educational digitalisation: they recognise the potential risks of early digital exposure for children, acknowledge their own skill limitations and struggle with the technical constraints of their schools.

Discussion

Findings and future research directions emerging from the study underscore the benefits of digital technologies in education, notably in customizing the learning experience and tailoring it to individual students. This transformative approach elevates education by prioritizing not only adherence to curricular standards but also the consideration of students' interests and unique abilities. The incorporation of digital educational tools expands students' perspectives and provides fresh avenues for knowledge acquisition in a structured and accessible manner. Advantages encompass reduced administrative burdens, streamlined teaching processes, and enhanced student learning experiences, fostering the development of practical skills. By leveraging digital technologies, education transitions to a new quality benchmark marked by the democratization of knowledge access.

Conclusion

Digital technologies are increasingly becoming indispensable tools for educators in preschool settings, aiding in content structuring, simplifying information retrieval, facilitating the incorporation of multimedia elements like illustrations, audio, video, and animations, and enabling the implementation of personalized teaching approaches. The integration of digital educational tools in early childhood education shifts a child from a passive recipient to an engaged, active participant. It sparks interest even in the most reserved learners, drawing them into the educational process. Modern educators are tasked with harmonizing traditional practices with innovative techniques, blending conventional methodologies with emerging pedagogical trends. While the future trajectory of preschool education remains uncertain, it is evident that preschool institutions are actively engaged in the digital transformations of contemporary society. Subsequent research endeavors could explore avenues such as enhancing educators' proficiency in leveraging digital educational environments and enriching methodological support for utilizing digital technologies to cultivate the intellectual capacities of older preschoolers.

Пайдаланылған дереккөздер тізімі

[1] Блинов В.И. Образовательный процесс в профессиональном образовании: учебное пособие для вузов / В.И. Блинов; под общ. ред. В.И. Блинова. –М.: Издательский дом "Юрайт", 2018. – С.127-135.

[2] Вишневская Г.В. Технологический подход в педагогическом процессе высшей профессиональной школы// ИзвестияПензенскогогосударственногопедагогическогоуниверситетаим. В.Г. Белинского. –2008. –№ 6(10). С.

235-239.https://cyberleninka.ru/article/n/tehnologicheskiy-podhod-v-pedagogicheskom-protsesse-vysshey-professionalnoy-shkoly/viewer

[3] Маркова С.М., Наркозиев А.К. Методы исследования содержания профессионального образования // Вестник Мининского университета. –2019. –№ 7(1). –С. 200-205.https://cyberleninka.ru/article/n/metodika-issledovaniya-soderzhaniya-professionalnogo-obrazovaniya/viewer

[4] Померанцева Н.Г., Сирина Т.А. Особенности формирования иноязычной социокультурной компетенции средствами массовых открытых онлайн-курсов // Азимут научных исследований: педагогика и психология. – 2017. –№ 6(4). –С. 167-170.https://cyberleninka.ru/article/n/osobennosti-formirovaniya-inoyazychnoy-sotsiokulturnoy-kompetentsii-sredstvami-massovyh-otkrytyh-onlayn-kursov/viewer

[5] Зайцев В.С. Современные педагогические технологии: учебное пособие. В 2-х книгах. Книга 1. –Челябинск: ЧГПУ, 2012. –411 с.https://phsreda.com/ru/article/648/discussion_platform

[6] Селевко Г.К. Современные образовательные технологии: учебное пособие / Г.К. Селевко. –М.: Народное образование, 1998. –256 с.https://charko.narod.ru/tekst/an4/1.html

[7] Муравьева Г.Е. Проектирование технологий обучения: учебное пособие для студентов и преподавателей педагогических вузов, слушательниц и преподавателей педагогических курсов повышения квалификации / Г.Е. Муравьева. – Иваново, 2001. – 123 с. https://freereferats.ru/advanced_search_result.php?keywords=01002606681

[8] Борытко Н.М., Соловцова И.А., Байбаков А.М. Педагогические технологии: учебное пособие для студентов педагогических вузов / Н.М. Борытко, И.А. Соловцова, А.М. Байбаков; под ред. Н.М. Борытко. – Волгоград: Изд-во ВГИПКРО, 2006. –59 с.https://zzapomni.com/vgspu-volgograd/borytko-vvedenie-v-pedagogicheskuu-2006-794

[9] Ваганова О.И., Пирогова А.А., Прохорова М.П. Инновационные технологии в инклюзивном образовании // Инновационная экономика: перспективы развития и совершенствования. –2018. –№ 6(32). –С. 36-40.https://cyberleninka.ru/article/n/innovatsionnye-tehnologii-v-inklyuzivnom-obrazovanii/viewer

[10] Маркова С.М., Наркозиев А.К. Методология исследования содержания профессионального образования // Вестник Мининского университета. –2019. –Т. 2. –№ 7(1).https://doi.org/10.26795/2307-1281-2019-7-1-2

[11] Мялкина Е.В. Диагностика качества образования в высшей школе // Вестник Мининского университета. –2019. –Т. 4. –№ 7(3).https://doi.org/10.26795/2307-1281-2019-7-3-4

[12] Мальцева С.М., Ваганова О.И., Алешугина Е.А. Технология разработки электронного учебно-методического комплекса по дисциплине "Педагогические технологии" // Инновации в образовании. –2019. –№ 6. –С. 103-109.http://ripo.by/index.php?id=5555

[13] Ваганова О.И., Ильяшенко Л.К., Белоусова Г.А. Современные технологии профориентации в системе высшего образования // Современные исследования социальных проблем (электронный научный журнал). –2018. –№ 9(5). –С. 45-48.

[14] Макарова Е.Л., Пугач О.И. Особенности разработки и внедрения курсов по образовательной области "математика" в системах дистанционного обучения // Самарский научный вестник. –2016. –№ 2(15). –С. 165-171.https://doi.org/10.17816/snv20162307

[15] Ярмольчук Т.М. Синхронные и асинхронные онлайн-инструменты изучения иностранного языка в процессе профессиональной подготовки специалистов в области информационных технологий // Гуманитарные балканские известия. –2018. –№ 1. –С. 75-79.

[16] Клинков Г.Т. Технологическое и профильное образование в университетах: активные методы // Американский журнал педагогики и образования. –2014. –№ 4(2). –С. 7-15.

[17] Итинсон К.С. Массовые открытые онлайн-курсы и их влияние на высшее образование // Карельский научный журнал. –2019. –№ 3(28). –С. 15-17.https://cyberleninka.ru/article/n/massovye-otkrytye-onlayn-kursy-i-ih-vliyanie-na-vysshee-obrazovanie/viewer

[18] Прохорова М.П., Бушуева В.В., Ваганова О.И. Практико-ориентированные технологии формирования профессиональных компетенций студентов вузов // Проблемы современного педагогического образования. – 2017. –№ 56(8). –С. 193-199.

References

[1] Blinov V.I. (2018)Obrazovatel'nyiprotsess v professional'nomobrazovanii: uchebnoeposobiedlyavuzov [Educational process in professional education: a teaching aid for universities]. V.I. Blinov; pod obshch. red. V.I. Blinova.M.: Izdatel'skiidom "Yurait",127-135. (In Russian)

[2] Vishnevskaya G.V.(2008) Tekhnologicheskii podkhod v pedagogicheskom protsesse vysshei professional'noi shkoly [Technological approach in the pedagogical process of higher professional school].IzvestiyaPenzenskogogosudarstvennogopedagogicheskogouniversitetaim. V.G. Belinskogo. № 6(10). 235-239. (In Russian) https://cyberleninka.ru/article/n/tehnologicheskiy-podhod-v-pedagogicheskom-protsesse-vysshey-professionalnoy-shkoly/viewer

[3] Markova S.M., Narkoziev A.K.(2019) Metody issledovaniya soderzhaniya professional'nogo obrazovaniya [Methods of research of the content of professional education]. VestnikMininskogouniversiteta.№ 7(1). 200-205. (In Russian) https://cyberleninka.ru/article/n/metodika-issledovaniya-soderzhaniya-professionalnogo-obrazovaniya/viewer

[4] Pomerantseva N.G., Sirina T.A.(2017) Osobennosti formirovaniya inoyazychnoy sotsiokul'turnoy kompetentsii sredstvami massovykh otkrytykhonlain-kursov [Features of the formation of foreign language sociocultural competence by means of massive open online courses]. Azimut nauchnykh issledovanii: pedagogika i psikhologiya.№6(4).167-170. (In Russian) https://cyberleninka.ru/article/n/osobennosti-formirovaniya-inoyazychnoy-sotsiokulturnoy-kompetentsii-sredstvami-massovyh-otkrytyh-onlayn-kursov/viewer

[5] Zaitsev V.S. (2012) Sovremennye pedagogicheskie tekhnologii [Modern pedagogical technologies]: uchebnoeposobie. V 2-kh knigakh. Kniga 1. Chelyabinsk: ChGPU.411 p. (In Russian) https://phsreda.com/ru/article/648/discussion_platform

[6] Selevko G.K .(1998) Sovremennye obrazovatel'nye tekhnologii [Modern educational technologies]: uchebnoeposobie. G.K. Selevko. M.: Narodnoe obrazovanie. 256. (In Russian)https://charko.narod.ru/tekst/an4/1.html

[7] Murav'eva G.E. (2001) Proektirovanie tekhnologi obucheniya [Design of learning technologies] Design of learning technologies: uchebnoe posobie dlya studentov iprepodavatelei pedagog icheskikh vuzov, slushatel'nitsi prepodavatelei pedagogicheskikh kursov povysheniya kvalifikatsii G.E. Murav'eva. Ivanovo. 123 p. (In Russian)https://freereferats.ru/advanced_search_result.php?keywords=01002606681

[8] Borytko N.M., Solovtsova I.A., Baibakov A.M. (2006) Pedagogicheskie tekhnologii [Pedagogical technologies]: uchebnoe posobie dlya studentov pedagogicheskik hvuzov. N.M. Borytko, I.A. Solovtsova, A.M. Baibakov; pod red. N.M. Borytko. Volgograd: Izd-vo VGIPKRO. 59 p. (In Russian)https://zzapomni.com/vgspu-volgograd/borytko-vvedenie-v-pedagogicheskuu-2006-794

[9] Vaganova O.I., Pirogova A.A., Prokhorova M.P. (2018) Innovatsionnye tekhnologii v inklyuzivnomobrazovanii [Innovative technologies in inclusive education]. Innovatsionnaya ekonomika: perspektivyrazvitiyaisover shenstvovaniya. № 6(32).36-40. (In Russian) https://cyberleninka.ru/article/n/innovatsionnye-tehnologii-v-inklyuzivnom-obrazovanii/viewer

[10] Markova S.M., Narkoziev A.K. (2019) Metodologiya issledovaniya soderzhaniya professional'nogo obrazovaniya [Methodology of research into the content of professional education]. Vestnik Mininsko gouni versiteta. T. 2. № 7(1). (In Russian) https://doi.org/10.26795/2307-1281-2019-7-1-2

[11] Myalkina E.V. (2019) Diagnostikaka chestva obrazovaniya v vyssheishkole [Diagnostics of the quality of education in higher education]. Vestnik Mininskogo universiteta. T. 4. № 7(3). (In Russian) https://doi.org/10.26795/2307-1281-2019-7-3-4

[12] Mal'tseva S.M., Vaganova O.I., Aleshugina E.A. (2019) Tekhnologiya razrabotki elektronnogouchebno-metodicheskogo kompleksa po discipline "Pedagogicheskie tekhnologii" [Technology of development of electronic educational and methodological complex on the discipline "Pedagogical technologies"]. Innovatsii v obrazovanii. №6.103-109. (In Russian) http://ripo.by/index.php?id=5555

[13] Vaganova O.I., Ilyashenko L.K., Belousova G.A. (2018) Sovremennye tekhnologii proforientatsii v sisteme vysshego obrazovaniya [Modern technologies of career guidance in the system of higher education]. Sovremennye issledovaniya sotsial'nykh problem (elektronnyi nauchnyi zhurnal). № 9(5). 45-48. (In Russian)

[14] Makarova E.L., Pugach O.I. (2016) Osobennosti razrabotki I vnedreniya kursov po obrazovatel'noi oblasti "matematika" v sistemakh distantsionnogo obucheniya [Features of development and implementation of courses in the educational field of "mathematics" in distance learning systems]. Samarskii nauchnyi vestnik,№ 2(15).165-171. (In Russian) https://doi.org/10.17816/snv20162307

[15] Yarmolchuk T.M. (2018) Sinkhronnyei asinkhronnye onlain-instrumenty izucheniya inostrannogo yazyka v protsess eprofessional'noi podgotovki spetsialistov v oblasti informatsionnykh tekhnologii [Synchronous and asynchronous online tools for learning a foreign language in the process of professional training of specialists in the field of information technology]. Gumanitarnyebalkanskieizvestiya. № 1.75-79. (In Russian)

[16] Klinkov G.T. (2014) Tekhnologicheskoe iprofil'noe obrazovanie v universitetakh: aktivnye metody [Technological and specialized education in universities: active methods]/ Amerikanskii zhurnalpeda gogikiiobrazovaniya. № 4(2). 7-15. (In Russian)

[17] Itinson K.S. (2017) Massovy eotkrytye onlain-kursy I ikh vliyanie na vysshee obrazovanie [Massive Open Online Courses and Their Impact on Higher Education]./ Karelskii nauchnyi zhurnal. № 3(28).15-17. (In Russian) https://cyberleninka.ru/article/n/massovye-otkrytye-onlayn-kursy-i-ih-vliyanie-na-vysshee-obrazovanie/viewer

[18] Prokhorova M.P., Bushueva V.V., Vaganova O.I. (2017) Praktiko-orientirovannye tekhnologii formirovaniya professional'nykh kompetentsii studentov vuzov [Practice-oriented technologies for developing professional competencies of university students]. Problemy sovremennogo pedagogicheskogo obrazovaniya. № 56(8).193-199. (In Russian)