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USE OF DIGITAL TOOLS IN UPBRINGING OF MODERN ADOLESCENTS

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INTRODUCTION

In the modern educational space, the digital competence of a teacher is considered as an integral characteristic of his professional activity, which includes knowledge, skills, abilities and value orientations necessary for the effective use of information and communication technologies (ICT) in working with education seekers. It provides the teacher's ability not only to appropriately apply digital tools, but also to determine their educational potential and critically assess the possibilities of observing ethical and legal norms during pedagogical interaction.

According to researcher O. Vorobyova, "the structural components of digital competence include: the ability to search, select, analyze and critically evaluate information; the ability to logically structure tasks and use digital environments to solve them; knowledge of the rules of safe work on the Internet, compliance with copyright and intellectual property standards; effective use of digital platforms for interaction with education seekers, adolescents in particular"[1].

Modern adolescents, as children of the digital age, are mainly individualists, interested in computer games. They are able to multitask and perform complex creative tasks and process large amounts of information, therefore, have specific needs in the organization of education. Ukrainian researchers consider a teenager as an active participant in such activities that would "influence the development of his interests, encourage him to construct social relationships, the material and spiritual world on the basis of his own ideal of the future. This is possible only on condition that such activities are creative, shared with peers and approved by adolescent groups"[2]. Therefore, to educate a teenager, it is necessary to create an information and developmental environment that would contribute to his

[1] Воробйова О. Використання сучасних цифрових технологій в освітньому просторі. *Інноваційні трансформації в сучасній освіті: виклики, реалії, стратегії* : зб. матеріалів IV Всеукр. відкр. наук.-практ. онлайн-форуму, м. Київ, 27 жовт. 2022 р. / Національний центр «Мала академія наук України». Київ, 2022. С. 260–264.

[2] Бедлінський О. І., Бедлінський В. О. Психологічні особливості організації провідної діяльності підлітків: навч. посіб. Суми: СумДПУ ім. А. С. Макаренка, 2011. 136 с.

moral and ethical growth, encourage him to obtain new knowledge and develop team work skills.

The introduction of digital tools, in our opinion, will contribute to achieving higher results in educating teenagers, as it will assist to arouse the attention of teenagers with emotionally significant visual incentives (interesting, graphically presented facts, eloquent examples, jokes related to the topic); use the capabilities of a multi-sensory environment (animation, videos, scribing, various devices); form in them the skills of selecting and summarizing information from Internet resources, self-monitoring of their educational and social activity, reflection of their own achievements and prospects.

The relevance of the resarch is due to the need to improve the digital competence of teachers and integrate new digital tools into the educational process. This is due to the general trend of digitalization of the interaction between teachers and education seekers, the search for ways to increase its efficiency and compliance with modern challenges of social development.

In this context, it is important to analyze the potential of digital platforms and tools in order to modernize educational methods or techniques, as these resources are constantly developing, improving and opening up new opportunities for implementing educational influences.

1. Educational potential of digital tools in working with adolescents, purpose and methods of research

Educational and scientific institutions of Ukraine pay significant attention to the digitalization of education, in particular:

– The National Academy of Educational Sciences of Ukraine prepared a scientific report to the general meeting of the National Academy of Pedagogical Sciences of Ukraine "Scientific and methodological support for the digitalization of education in Ukraine: state, problems, prospects"[3], which analyzed global trends in digitalization: intensive development of technologies such as augmented and virtual reality, artificial intelligence, robotics, blockchain, media education, cloud-based environment, gamification, interdisciplinarity, etc.; digitalization of education was identified as a strategic direction for the development of the educational system of Ukraine;

[3] Кремень В. Г., Биков В. Ю., Ляшенко О. І., Литвинова С. Г., Луговий В. І., Мальований Ю. І., Пінчук О. П., Топузов О. М. Науково-методичне забезпечення цифровізації освіти україни: стан, проблеми, перспективи. *Науково-методичне забезпечення цифровізації освіти України: стан, проблеми, перспективи* : Наукова доповідь загальним зборам НАПН України, 18-19 листопада 2022 р. *Вісник Національної академії педагогічних наук України.* 2022. № 4 (2). С. 1–49. https://doi.org/10.37472/v.naes.2022.4223.

– scientists of the Institute of Problems on Education of the National Academy of Educational Sciences of Ukraine elaborated the "Concept of Education of Children and Youth in the Digital Space"[4], which the main messages of are: preservation of physical, mental, social and spiritual health of education seekers; creation of a safe digital space; use of the health-saving potential of family media education; elaboration of ways to counteract technological and marketing influences; upbringing of a culture of behavior in the digital educational space; development of digital competence of pedagogical workers; digital modernization of scientific and methodological support of educational activities;

– Borys Grinchenko Kyiv Metropolitan University prepared a collective monograph based on the results of research within the framework of the implementation of the international project "Modernization of Higher Pedagogical Education with the Use of Innovative Teaching Tools" (MOPED) of the EU Erasmus+ KA2 program (Cooperation for the Development of Innovations and the Exchange of Successful Practices) "Modernization of Education in the Digital Dimension"[5]. It focuses on the necessity to improve the quality and competitiveness of education and the associated high level of digital competence of the educator. The team of authors offers the main ways to implement innovative approaches and digital technologies in the educational process in the context of the transformation of education;

– The Institute for Digitalization of Education of the National Academy of Pedagogical Sciences of Ukraine presented the monograph "Digital Transformation of Open Scientific and Educational Environments"[6], which presents the results of its own research concerning the informatization of education, covering international approaches to digitalization, ways of developing national educational systems, designing a cloud-oriented environment, using open electronic resources and social networks;

– Mykhailo Dragomanov Ukrainian State University prepared a monograph "Digital Transformation of Education: Theoretical and Methodological Principles", which "considers the main theoretical and methodological principles of digital transformation, in particular, such aspects as the development of digital educational environments, the adaptation of curricula to the needs of a digital society, as well as the role

[4] Концепція виховання дітей та молоді в цифровому просторі / Кремень В. Г., Сисоєва С. О., Бех І. Д. та ін. Національна академія педагогічних наук України, 2021. 52 с.

[5] Модернізація освіти в цифровому вимірі: монографія / за наук. ред. Н. Морзе, О. Буйницької. К. : Київ. ун-т ім. Б. Грінченка, 2021. 300 с.

[6] Цифрова трансформація відкритих науково-освітніх середовищ : монографія / Ін-т цифровізації освіти НАПН України ; [колектив авторів ; ред. О. М. Спірін, О. П. Пінчук]. Київ, 2024. 308 с.

of digital competence as a key component of the professional training of future teachers"[7].

Ukrainian scientists are researching the theoretical and practical principles of implementing digital technologies and their role in the development of the personality of the student. Scientist I. Kucherak considers the impact of digital technologies on the educational process in the context of the development of competencies necessary for the successful self-realization of education seekers, and emphasizes that the integration of digital tools into the educational process not only optimizes educational activities, but also creates conditions for the development of motivation to develop critical thinking, acquire communicative leadership skills, and abilities for self-learning and self-development[8].

We support the opinion of researcher M. Dub, who emphasizes the importance of "not only mastering technologies, but also the ability to adapt to changes, work in a team, think critically and creatively to solve problems"[9]. These processes require constant improvement of teachers' digital competence, since it is digitalization that provides effective tools for solving the problems posed in the conditions of mixed learning. As other modern researchers note[10] [11], digital technologies ensure effective communication between participants in the educational process, increase its flexibility and adaptability, which is of particular importance in the conditions of distance and mixed learning. At the same time, it is important to maintain a balance between the use of digital tools and live interpersonal communication, because it forms socio-emotional competencies and contributes to the comprehensive development of the personality.

The research of scientist S. Virotchenko focuses on the phenomenon of digital transformation of education, comparing the Ukrainian experience with the practices of the Baltic countries. The author emphasizes the

[7] Цифрова трансформація освіти: теоретико-методичні засади : монографія / за заг. ред. В. П. Сергієнка; за наук. ред. Н. П. Франчук. Київ : Вид-во УДУ імені Михайла Драгоманова, 2024. 382 с.

[8] Кучерак І. Цифровізація та її вплив на освітній простір в контексті формування ключових компетентностей. *Інноваційна педагогіка*. 2020. № 22(2). С. 91–94. http://www.innovpedagogy.od.ua/archives/2020/22/part_2/22.pdf.

[9] Дуб М. Цифровізація та її вплив на освітній простір у контексті формування ключових компетентностей. *Науковий вісник КаУ ім. А. Волошина.* 2024. № 7. С. 63–69. URL : Stattia-Tsyfrovizatsiia-ta-ii-vplyv-.pdf

[10] Цифрові технології в освіті: сучасний досвід, проблеми та перспективи : монографія / Т. А. Васильєва та ін. ; за заг. ред. д-рки екон. наук, проф. Т. А. Васильєвої, д-ра екон. наук, проф. Ю. М. Петрушенка. Суми : Сумський державний університет, 2022. 150 с.

[11] Віротченко С. Цифрова трансформація в освіті: теоретичні концепції та порівняльний аналіз досвіду України та країн Балтії. *Науковий журнал «Педагогіка».* № 2024. № 93. С. 9–13. URL : https://www.pedagogy-journal.kpu.zp.ua/archive/2024/93/4.pdf

importance of digital tools for the development of digital skills of teachers and education seekers, as well as for ensuring the flexibility and adaptability of the educational environment[11]. The current experience of using digital technologies in educational institutions is summarized in a collective monograph edited by T. Vasilyeva and Yu. Petrushenko, and the problems and prospects of their use are outlined. The authors emphasize the importance of interactive teaching methods and distance platforms for increasing the efficiency of the educational process[12]. Gamification as a means of diversifying the educational process is studied by scientists V. Necherda and others[13]. The authors consider gamification as a set of various tools and mechanics that contribute to the significant enrichment of the educational process with entertainment, educational, upbringing, motivational, and socio-communicative components.

Special attention is paid to the ethical aspects associated with the use of tools based on artificial intelligence. They open up new opportunities for creating educational content, personalizing the educational process and supporting inclusiveness, but at the same time they generate risks of academic dishonesty and reducing motivation for independent learning. As I. Shparyk emphasizes, the digital transformation of education should be accompanied by the development of clear ethical norms and rules for the use of AI, which involves the information enlightenment of education seekers and the adjustment of the educational environment in order to stimulate original thinking and creativity[14]. I. Shparyk's research also examines the conceptual foundations of the digital transformation of education in European and American discourse[14]. Special attention is paid to the problems of intensification of the educational process in connection with the need for mandatory balancing of technological innovations with ethical principles and values.

In the context of the rapid spread of digital technologies, the importance of developing critical thinking as one of the key educational competencies is growing. In this regard, the scientist M. Karmazina notes that "media consumption … depends on the level of development of critical thinking of an individual who is able to recognize useful and harmful (even dangerous)

[12] Цифрові технології в освіті: сучасний досвід, проблеми та перспективи : монографія / Т. А. Васильєва та ін. ; за заг. ред. д-рки екон. наук, проф. Т. А. Васильєвої, д-ра екон. наук, проф. Ю. М. Петрушенка. Суми : Сумський державний університет, 2022. 150 с.

[13] Necherda V., Bezruk K., Petrochko Zh., Kyrychenko V., Denysiuk O. Gamification as a means of forming socially successful personality of a teenager. *«E-learning». E-learning & Artificial Intelligence (AI).* Katowice–Cieszyn: University of Silesia in Katowice, 2023. V. 15. Pp. 173–185.

[14] Шпарик О. Концептуальні засади цифрової трансформації освіти: європейський та американський дискурс. *Український Педагогічний журнал*. 2021. № 4. С. 65–76. https://doi.org/10.32405/2411-1317-2021-4-65-76.

information, skillfully use available network data for their own purposes, making balanced and effective decisions"[15]. We support the opinion of researchers O. Savchuk and I. Yegorova, who recognize that "the integration of … digital technologies into the educational process contributes to the development of critical thinking"[16]. Therefore, education seekers must learn not only to effectively use digital tools, but also to critically assess the quality of the information received, understand its origin and reliability. This is especially true for content created with the assistance of AI, which can be convincing, but contain factual errors. The role of the teacher is to form the skills of analysis, verification of information and the development of research abilities of adolescents.

At the present stage, the rapid development of new technologies creates broad opportunities for the application of various models and platforms, in particular, the Ministry of Education of Ukraine elaborated the project "Instructive and methodological recommendations for the introduction and use of artificial intelligence technologies in secondary education institutions", which summarizes the typology of AI systems in education. According to the employees of the Ministry of Digital Transformation, free platforms presented in table[17] may be appropriate tools for use in the educational process (**Table 1*).

The above digital platforms contain a wide range of opportunities for adolescents to develop the necessary qualities and skills for successful socialization and professional self-realization.

These resources contribute not only to the assimilation of the material, but also to the formation of 21st century skills – from organizing self-study, information search skills to self-presentation skills and the ability to adapt to change. Provided that they are used pedagogically soundly, digital tools become an effective means of supporting individual development, motivation and emotional well-being of education seekers.

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[15] Кармазіна М. В. Психологічні особливості зв'язку рівня критичного мислення та особливостей медіаспоживання. *Science and society: modern trends in a changing world :* Proceedings of the 2nd International scientific and practical conference. MDPC Publishing. Vienna, Austria. 2024. Pp. 397–401.

[16] Савчук О. Д., Єгорова І. В. Цифровізація та розвиток критичного мислення в освітньому процесі. *Science and society: modern trends in a changing world* : Proceedings of the 2nd International scientific and practical conference. MDPC Publishing. Vienna, Austria. 2024. Pp. 334–338.

[17] Інструктивно методичні рекомендації щодо запровадження та використання технологій штучного інтелекту в закладах загальної середньої освіти. Проєкт / Міністерство освіти і науки України; Міністерство цифрової трансформації України. 2024. URL : https://mon.gov.ua/static-objects/mon/sites/1/news/2024/05/21/Instruktyvno.metodychni.rekomendatsiyi.shchodo.SHI.v.ZZSO-22.05.2024.pdf

Table 1

AI platforms for use in the educational process

Platform	Possibilities of use in education	Educational effect and advantages
Gemini	Generation of texts, explanations, tasks, ideas, integration with Google Workspace	Powerful multilingual model, convenient for research and writing
ChatGPT та Copilot	Supporting pupils in research, writing, reflection, and idea generation	Development of critical thinking, speech skills, independence
Claude	Deep explanations, text analysis, ethical discussions, educational content generation	Formation of critical thinking, logic, ethical reasoning
Diffit	Creating differentiated texts, questions, dictionaries, graphic organizers from any source	Accessibility of content for students with different levels of preparation, support for inclusion
Gamma	Text-based presentation generation, style adaptation, interactive elements	Rapid creation of visual content, development of self-presentation and creativity
Ideogram	Generating text on images, creating posters, visual titles	Development of visual literacy, creativity, design thinking
Clipdrop	Background removal, image enhancement, scene generation	Preparation of visual content, presentations, projects
Vizcom	Transforming sketches into realistic images, design ideas	Visualization of STEM ideas, presentation, development of spatial thinking
Freepik AI	Generation of graphics, icons, templates, presentations	Rapid creation of educational materials, development of aesthetic taste
Miro AI	Mental maps, timelines, joint work, idea generation	Knowledge structuring, teamwork development, planning
MyLens AI	Data visualization: mental maps, flowcharts, timelines	Formation of systems thinking, analytics, and research skills
Vidnoz AI	Creating videos with avatars, voice acting, translation, subtitles	Development of self-presentation, language practice, creative thinking
MagicSchool	Generation of lesson plans, tests, IDP, letters to parents, differentiation, adaptation of materials	Save time, reduce workload, personalize learning

Table 1 (continuance)

Suno	Music generation based on text request	Emotional literacy, creativity, musical expression
Voicechanger	Voice change, character voice acting	Theater projects, language practice, imagination development
Audioatlas	Visualization of sounds, geography of audio	Cross-curricular connections (geography + music), development of auditory perception
Ghola.ai	Creating personalized AI avatars for communication	Development of communication, emotional stability, role-playing games
D-ID	Animated avatars with voicy acting text	Self-presentation, language practice, creating educational videos
Chattube.io	AI assistant for analyzing YouTube videos	Critical thinking, reflection, working with video content
Mizou	AI-generation of educational quizzes, exercises, interactive tasks	Differentiation, gamification, development of logic and attention
SchoolAI	Comprehensive educational assistant for teachers: lesson plans, assessment, adaptation	Personalize learning, save time, support inclusion
Harpa	AI-automation of search, site analysis, report creation	Research activities, information literacy, analytical thinking
Perplexity	AI search engine with explanations and sources	Academic integrity, development of information search and verification skills
Consensus	Search for scientific articles with summary of results	Scientific thinking, working with sources, preparation for external independent evaluation and research
Slidesgo	Presentation templates for Google Slides and PowerPoint	Visualization of ideas, self-presentation, development of aesthetic taste
Grammarl	Proofreading, text generation, style recommendations	Writing improvement, language literacy, academic integrity

Thus, an analysis of scientific publications in recent years demonstrates a gradual shift in the focus of research from general issues of the use of digital tools to more specific aspects of their implementation: the impact on the development of critical thinking, the formation of self-presentation skills,

the use of gamification tools and artificial intelligence to model the individual educational or educational trajectory of education seekers' development, etc.

The purpose of our research is to substantiate and analyze the capabilities of modern digital tools to increase the effectiveness of educating adolescents – education seekers of modern institutions of general secondary and extracurricular education in Ukraine.

Analysis of digital tools (platforms for distance learning, interactive services, gamified resources, artificial intelligence) will allow us to get acquainted with the key differences and advantages of each of them, which will contribute to: optimizing educational interaction; increasing the digital competence of teachers and pupils; developing critical thinking, self-reflection and motivation; supporting the educational and professional self-realization of education seekers; creating the prerequisites for their successful integration into the digital society.

The purpose is to solve a set of research tasks, including:

– studying the capabilities of modern digital tools and educational platforms to promote the formation of life success of education seekers;

– comparing the functional capabilities of various digital services and determining their impact in the educational process;

– outlining the key advantages of using digital technologies to optimize educational activities, increase the motivation of education seekers and ensure their self-realization;

– systematization of practical recommendations for integrating digital resources into the practice of educational interaction, taking into account the individual characteristics of pupils and the conditions of the modern educational environment.

The research used a set of methods inherent in psychological and pedagogical research: analysis and generalization of scientific literature (study of the theoretical foundations of digital competence of teachers and students); comparative analysis of digital platforms (Google Meet, Zoom, Microsoft Teams, Webex, Kahoot, Wordwall, Quizlet, etc.) to identify their educational capabilities and advantages; systematization and classification of digital tools according to functional characteristics (platforms for communication, testing, interactive exercises, presentations, AI tools); method of pedagogical forecasting (outlining the prospects for the use of artificial intelligence and interactive tools in educating adolescents).

2. Results of the research concerning use of digital tools in the education of modern adolescents

The study of psychological and pedagogical sources and observations of mass educational practice give grounds to assert that educational institutions are working at the effectiveness of organizing pedagogical interaction in the conditions of a mixed format of the educational process, selecting modern instrumental support for this.

Many teachers organize interaction with adolescents using digital platforms offered by educational institutions or popular messengers such as Viber, WhatsApp, Facebook or Telegram. At the same time, to organize productive educational work, a teacher often needs additional digital tools that will assist implement specific tasks in martial law conditions, take into account individual characteristics and make interaction more productive[18].

The main platforms for organizing distance learning are:

– ***Google Meet*** – a component of the Google Workspace for Education ecosystem, which is widely used in educational institutions to organize online classes, consultations and collective events. Its functionality is focused on providing stable video communication, interactive interaction and integration with other Google digital services.

Google Meet provides high-quality video and audio communication in real time with a high level of stability and security; the ability to demonstrate the screen (presentations, documents, videos), which adds visualization to the educational material; access to interactive tools: chat, the "Raise your hand" function, reactions, surveys.

The advantage of Google Meet is its accessibility from any device (computer, tablet, smartphone), which makes communication flexible and secure: data encryption, access control, setting participant rights. The platform has an intuitive interface that does not require special training.

In the educational process, Google Meet is actively used for:

• conducting lessons and group classes in a remote format;

• organizing parent meetings and pedagogical councils;

• ensuring dialogic and polylogue interaction;

• creating interactive educational events (online quizzes, discussions, project presentations).

– ***Zoom*** is one of the most popular platforms for online learning; supports large groups of participants, has the functions of recording classes, creating "rooms for group work", interactive whiteboards.

[18] Близнюк Т. Цифрові інструменти для онлайн і офлайн навчання: навчально-методичний посібник. Івано-Франківськ : Прикарпатський національний університет імені Василя Стефаника, 2021. 64 с.

Zoom is a universal tool for organizing the educational process, which combines ease of use, wide functionality and scalability. Its functionality allows you to organize both individual consultations and group meetings with a large number of participants (in particular, in Ukraine, the Ministry of Education and Science of Ukraine, together with Zoom, have provided educational institutions with free and expanded access to Zoom Meetings for Education since 2022).

The main features of Zoom for education are high-quality video and audio communication, recording classes in MP4 (video) and a separate M4A audio track, saving chat for later use; demonstration of the screen with the ability to comment and work together at materials; Breakout Rooms feature – creating small groups to complete tasks within a single conference; interactive tools: chat, reactions, polls, integration with whiteboards for collaborative work; mobile accessibility – the ability to connect from tablets and smartphones, which makes learning more flexible; integration with Google and Outlook calendars, which simplifies event planning.

– ***Microsoft Teams*** – integrated with Microsoft 365 services; allows you to combine video conferencing with electronic document management, collaborative work at files and calendar planning, provides the ability to chat and make calls, and also enables secure work with your files.

In the educational process, the platform can be used to organize group work and project activities with the ability to jointly edit materials; conduct teacher councils, methodological associations and parent meetings in a remote format; track the activity of education seekers, task completion and level of involvement; supporting social-emotional learning through interactive tools and a safe environment for communication.

The advantage of Microsoft Teams is: creating virtual classrooms where each group of pupils can have their own space for communication; using interactive tools: surveys, chats, discussion channels, which contribute to the active involvement of education seekers; ensuring inclusivity, which includes support for translation, subtitles, adaptive features for learners with special educational needs; ensuring access and control.

– ***Cisco Webex*** (https://www.webex.com) is a modern platform with a high level of security for organizing video conferences, webinars and online meetings, which provides high quality of communication, stability of work, recording and the ability to organize large conferences.

In the educational process, Cisco Webex can be used for conducting distance learning, methodological meetings, trainings and consultations, which promotes effective communication between teachers, education seekers and parents. The platform supports interactive functions such as

screen sharing, chat, voice and video communication, as well as the ability to record sessions for later viewing.

Cisco Webex allows you to organize group work, project activities and discussions in real time, which contributes to the development of team interaction and active involvement of education seekers.

The advantages of Cisco Webex are: high quality of video and audio communication, even with an unstable Internet connection; the ability to create virtual rooms for different groups and projects; event planning and reminder functions; integration with calendars and e-mail; support for recording and archiving sessions; tools for surveys, voting and discussions that promote active participation of participants.

In the context of systematic educational work with adolescents, it is worth using platforms that assist to develop tests and interactive exercises:

- ***Blooket*** (https://www.blooket.com) – an interactive educational platform that combines elements of game learning and testing, aimed at increasing the motivation of education seekers through gamification of the educational process. The platform allows you to create a variety of educational games, quizzes and tasks that can be adapted to specific educational goals and topics. The platform promotes the active involvement of students in the process of communication, the development of critical thinking, speed reaction and teamwork.

– ***Classtime*** (https://classtime.com/uk) – the platform positions itself as a "teacher's assistant that enriches your lesson with instant visualization of the level of understanding and progress of the entire class in real time"[19]. The platform promotes the implementation of formative assessment, which allows teachers to quickly receive feedback and analyze the needs of education seekers.

In the educational process, Classtime is used for visualization, gamification of learning, monitoring the progress of education seekers in real time, as well as to stimulate active participation and self-reflection. Teachers can quickly create tasks, conduct thematic surveys, analyze results and provide individual recommendations.

– ***Kahoot*** (https://www.kahoot.com) is an interactive platform for creating educational games, quizzes and surveys, which promotes the active involvement of education seekers through gamification of the educational process. Teachers can quickly create various tasks using multimedia (test) elements, which makes learning dynamic and motivating. Participation of education seekers in quizzes allows you to quickly check knowledge in real time, organize team competitions, and improve speed reaction.

[19] Classtime як інструмент взаємодії викладача та студентів. *Classtime*. URL: https://www.classtime.com/blog/microlearning-testuvannya-v-universytetah/

The platform allows you to view and analyze the results, graphs and charts that show the percentage of correct answers and other statistical data. Thus, each participant can see themselves in the rating in relation to other participants and feel the competition, which contributes to the formation of the desire to compete for the championship next time[20].

It is worth noting that the test result is stored in the form of a list in the MS Excel table and the teacher has the opportunity to conduct detailed monitoring of the results of pupils' achievements.

– ***Wordwall*** (https://wordwall.net/uk) is a digital service for creating interactive educational materials, which has more than 30 types of activities (quizzes, matching pairs, flashcards, entering an answer, spinning the wheel, completing a sentence, group sorting and much more) that promote active learning. The platform allows teachers to create materials using an artificial intelligence content generator or adapt their own content or to specific learning goals and levels of education seekers.

The platform provides the opportunity to play exercises together with pupils on the classroom screen or play on their own devices and track their results; activity customization allows you to easily adjust the game rules and visual effects or switch your own content to a completely different activity with one click of the mouse[21].

Platforms for creating tests and interactive exercises, such as Blooket, Classtime, Kahoot! or Wordwall, play an important role in forming subject competencies, developing critical thinking and increasing the motivation of education seekers. They allow you to implement the principles of gamification, provide feedback and create conditions for self-testing and reflection.

However, for better results in the development of systems thinking, visualization of interaction and the formation of personal qualities, it is advisable to involve interactive cards. This tool allows education seekers to structure information, establish logical connections between concepts, and present their own ideas in a visually understandable form. Interactive cards are digital educational elements that combine text, images, audio and gamification for active learning. They contribute to the development of memory, critical thinking, self-reflection and motivation for learning in adolescents.

To create interactive cards, you should use:

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[20] Безрук К. Формування соціальної успішності підлітків у діяльності учнівського самоврядування : дис. доктора філософії : 011. Київ, 2023. 284 с. URL : https://ipv.org.ua/wp-content/uploads/2023/12/Na-sayt-Dysertatsiia_Bezruk.pdf

[21] Лисогор Л., Берендєєв С., Косенчук Ю. Використання електронних освітніх матеріалів у освітньому процесі: сучасні підходи і технології Нової української школи. Випуск 1 : Навчально-методичний посібник. Київ, 2023. 117 с.

– ***Interacty*** (https://interacty.me/uk) is a modern digital tool for creating interactive content, which is actively used in education for gamification of the educational process, development of motivation in adolescents. The platform offers a wide range of games, tests, quizzes, exercises for playing on a computer, mobile phone, in an enlarged format or in the classroom, thanks to which you can get feedback, ratings, team competitions that stimulate emotional engagement and self-reflection.

– ***Quizlet*** (https://quizlet.com/uk) is a platform that allows you to easily create your own cards, study cards of education seekers or find the ones you need among millions of cards of other pupils. It has a mobile application and the ability to use different types of memorization[22].

The platform "has the following advantages: automatic assessment of answers; the ability to use timers; gamified elements to increase the involvement of education seekers; a large database of ready-made tests; saving results and analyzing success"[23].

While creating interactive games, we recommend using:

– ***Baamboozle*** (https://www.baamboozle.com) – an online platform for creating interactive games, quizzes and team competitions, which does not require individual devices for each pupil. It is ideal for working with an entire class from one screen, which makes it convenient for face-to-face, distance and mixed learning. The capabilities provided by the platform include: a database of over 3 million ready-made games created by teachers from all over the world; a custom game editor that makes it easy to create questions, add images, and choose a game format; organizing a team game: pupils play in teams, which promotes cooperation and communication, and a device-free mode which the game is played in from one screen, which is convenient for class work.

– ***LearningApps*** (https://learningapps.org) – is a platform for supporting educational processes in educational institutions of various types. The platform offers a large database of tasks developed by teachers in all subjects of the school curriculum. Each of the resources can be used in your lesson, modified to suit your own needs, or developed into a similar or completely different learning module. The Learningapps service provides the ability to obtain code to place interactive tasks on a website or blog page of teachers or education seekers[24].

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[22] Сервіси для інтерактивних дистанційних уроків. *TeachHub : Незалежна Освітня Корпорація.* URL: https://teach-hub.com/servisy-dlia-interaktyvnykh-dystantsiynykh-urokiv/

[23] Ляшенко О. 6 платформ для створення тестів на урок. *JustClass*. 2025. URL: https://justclass.com.ua/blog/6-platform-dlya-stvorennya-testiv-na-urok/

[24] Катола Т. *Сервіси створення інтерактивних вправ.* На Урок : освітній проєкт. 2021. URL: https://naurok.com.ua/servisi-stvorennya-interaktivnih-vprav-218617.html (дата звернення: 05.01.2026).

– ***Gynzy*** (https://www.gynzy.com/uk) – allows you to organize class activities, increase education seeker engagement and create lessons effectively. The platform involves the use of an interactive whiteboard, which turns the classroom into a dynamic learning space, allowing you to add text, images, video, audio and visual elements. The tasks available in the database include energizers, logical tasks, brain breaks that stimulate motivation and emotional well-being of education seekers. Timers, random number generators, pupil selection are provided for organizing class activities, and various quizzes and questionnaires allow you to assess knowledge in real time, forming self-reflection and responsibility skills.

In the process of educating adolescents, an important role is played by the development of self-presentation skills, visualization of ideas and structured presentation of information, which can be implemented while creating digital presentations – as a means of self-expression, reflection, teamwork and public speaking. The PechaKucha method is best suited for this. This is a dynamic presentation format consisting of 20 slides, shown for 20 seconds, with a total duration of the presentation of 6 minutes and 40 seconds. It helps pupils to develop self-presentation skills, concise thinking, visualization of ideas, and confidence in public speaking.

The following platforms can be used to apply the PechaKucha method:

– ***Canva*** (https://www.canva.com/) is a graphic design service. The graphic editor provides access to a built-in library of templates, photos, illustrations, and fonts. The platform allows you to create both images for publication on the Internet and layouts for printed products[25].

The platform allows you to create a presentation of 20 slides using templates with a minimum of text, set up automatic slide changes every 20 seconds (via video format or timer), add images, icons, and color accents for visual accompaniment of the story.

– ***Gamma*** (https://gamma.app/uk) is an innovative online tool for creating presentations, documents and web pages, which is ideal for implementing the PechaKucha method due to its speed, visual appeal and support for automation.

The platform has the ability to create a presentation using artificial intelligence – the platform itself structures the slides according to the entered topic; set up an automatic slide show or export to Google Slides/PowerPoint for manual timer setting; add interactive elements or visual accents. This platform is especially useful for education seekers who want to quickly create an effective presentation without spending a lot of time for design.

[25] Катола Т. *Сервіси створення інтерактивних вправ.* На Урок : освітній проєкт. 2021. URL: https://naurok.com.ua/servisi-stvorennya-interaktivnih-vprav-218617.html (дата звернення: 05.01.2026).

After mastering traditional digital tools: test platforms, interactive exercises, cards and presentations – the next step is to use *digital tools based on artificial intelligence (AI).* These tools not only automate routine tasks, but also open up new opportunities for self-learning, creativity and personal development.

AI platforms are able to adapt to the individual needs of a teenager, generate content, analyze data, offer recommendations and create conditions for deep reflection. Their use contributes to the formation of skills necessary for the successful integration of a teenager into the digital society – from information literacy to emotional resilience and self-presentation.

The conducted research of the use of digital tools in the upbringing of teenagers allows us to identify key trends that determine the directions of further development of the educational space in the context of digital transformation and social challenges. One of the most important changes is the transformation of the role of the teacher: from a traditional carrier of knowledge to a facilitator of pedagogical interaction, who helps education seekers to navigate among various digital resources, choose the optimal tools to achieve educational and educational goals, and develop key life-creating abilities, which include meaningfulness of life, resilience, purposefulness, plasticity (tolerance for uncertainty, desire for self-development, creativity, and reflexivity. Each of them performs a special function in the process of life-creation, while closely interacting with others[26].

CONCLUSIONS

We are convinced that one of the key advantages of digital tools is their potential for personalizing the educational process by implementing individual educational and upbringing trajectories. Traditional models usually have difficulty taking into account the diversity of learning styles and individual needs of education seekers. In contrast, digital tools (Classtime, Kahoot, Wordwall, Quizlet) and adaptive AI-based systems allow building individual learning trajectories, analyzing typical errors and offering tasks to overcome them. This approach ensures flexibility and adaptability of the educational process, and also has a positive impact on the motivation and self-reflection of adolescents.

At the same time, the effective implementation of digital technologies in the educational process requires a systemic and institutionally supported approach. Often, digitalization initiatives remain fragmented, relying on the enthusiasm of individual teachers. To ensure the stability and effectiveness

[26] Большакова А. М. Розвиток життєтворчих здібностей як фактор подолання суб'єктивної вичерпаності особистісного потенціалу. *Теорія і практика сучасної психології. Педагогічна та вікова психологія*. 2018. № 2. С. 103–108.

of changes, support from educational institutions is necessary: regular improvement of teachers' digital competence, proper technical support, adaptation of curricula, creation of repositories of digital materials and methodological recommendations.

Thus, digital tools in educational activities open up new opportunities in educating adolescents, in particular, the development of their life-creating abilities, increasing motivation for learning and life success. Their effective use requires teachers to adopt new approaches to planning, organizing and evaluating the educational process, as well as systematic support from methodological services and educational institutions. Successful integration of digital technologies is possible only if a balance is maintained between innovations and pedagogical expediency, ethical responsibility and lively human communication.

The effectiveness of digital technologies in educating adolescents depends on the level of digital competence of teachers, their ability to critically evaluate the value and semantic content and integrate tools into educational and training activities.

Therefore, digital tools, provided they are used pedagogically, become not only a means of optimizing the educational process, but also a factor in the formation of a multifaceted personality of a teenager, his readiness for self-realization and integration into a modern digital society.

SUMMARY

The article researched the problem of using digital tools as a factor in educating teenagers in the conditions of the modern educational space of Ukraine. The purpose of the research is to analyze and generalize the capabilities of modern digital tools to increase the effectiveness of educating teenagers. The tasks include: studying the functional capabilities of digital tools and platforms; determining their impact on the educational process; systematizing practical recommendations for enriching educational interaction with digital resources.

The research methodology includes analysis and generalization of scientific literature, comparative analysis of digital platforms, classification of tools by functional characteristics, and pedagogical forecasting.

The authors emphasize the relevance of the research, due to the processes of digitalization of education, the need to integrate new tools and find ways to increase the efficiency of educational interaction, and focus on the digital competence of a teacher as an integral characteristic of his professional activity, which includes knowledge, skills, abilities and value orientations necessary for the effective implementation of digital tools in the educational process.

The research summarized the views of modern scientists concerning the importance of digital transformation of education and notes the role of digital platforms (Google Meet, Zoom, Microsoft Teams, Cisco Webex) and interactive services (Kahoot, Wordwall, Quizlet, Blooket, Classtime) in educating adolescents.

The results demonstrated that the use of digital technologies contributes to the optimization of educational activities, support for the self-realization of adolescents and the creation of prerequisites for their successful integration into the digital society.

References

1. Бедлінський О. І., Бедлінський В. О. Психологічні особливості організації провідної діяльності підлітків: навч. посіб. Суми : СумДПУ ім. А. С. Макаренка, 2011. 136 с.
2. Безрук К. Формування соціальної успішності підлітків у діяльності учнівського самоврядування : дис. доктора філософії : 011. Київ, 2023. 284 с. URL : https://ipv.org.ua/wp-content/uploads/2023/12/Na-sayt-Dysertatsiia_Bezruk.pdf
3. Близнюк Т. Цифрові інструменти для онлайн і офлайн навчання: навчально-методичний посібник. Івано-Франківськ : Прикарпатський національний університет імені Василя Стефаника, 2021. 64 с
4. Большакова А. М. Розвиток життєтворчих здібностей як фактор подолання суб'єктивної вичерпаності особистісного потенціалу. *Теорія і практика сучасної психології. Педагогічна та вікова психологія*. 2018. № 2. С. 103–108.
5. Віротченко С. Цифрова трансформація в освіті: теоретичні концепції та порівняльний аналіз досвіду України та країн Балтії. *Науковий журнал «Педагогіка».* № 2024. № 93. С. 9–13. URL : https://www.pedagogy-journal.kpu.zp.ua/archive/2024/93/4.pdf
6. Воробйова О. Використання сучасних цифрових технологій в освітньому просторі. *Інноваційні трансформації в сучасній освіті: виклики, реалії, стратегії* : зб. матеріалів IV Всеукр. відкр. наук.-практ. онлайн-форуму, м. Київ, 27 жовт. 2022 р. / Національний центр «Мала академія наук України». Київ, 2022. С. 260–264.
7. Дуб М. Цифровізація та її вплив на освітній простір у контексті формування ключових компетентностей. *Науковий вісник КаУ ім. А. Волошина.* 2024. № 7. С. 63–69. URL : Stattia-Tsyfrovizatsiia-ta-ii-vplyv-.pdf
8. Інструктивно методичні рекомендації щодо запровадження та використання технологій штучного інтелекту в закладах загальної середньої освіти. Проєкт / Міністерство освіти і науки України; Міністерство цифрової трансформації України. 2024. URL : https://mon.gov.ua/static-

objects/mon/sites/1/news/2024/05/21/Instruktyvno.metodychni.rekomendatsiyi.shchodo.SHI.v.ZZSO-22.05.2024.pdf

9. Кармазіна М. В. Психологічні особливості зв'язку рівня критичного мислення та особливостей медіаспоживання. *Science and society: modern trends in a changing world :* Proceedings of the 2nd International scientific and practical conference. MDPC Publishing. Vienna, Austria. 2024. Pp. 397–401.

10. Катола Т. *Сервіси створення інтерактивних вправ.* На Урок : освітній проєкт. 2021. URL: https://naurok.com.ua/servisi-stvorennya-interaktivnih-vprav-218617.html (дата звернення: 05.01.2026).

11. Концепція виховання дітей та молоді в цифровому просторі / Кремень В. Г., Сисоєва С. О., Бех І. Д. та ін. Національна академія педагогічних наук України, 2021. 52 с.

12. Кремень В. Г., Биков В. Ю., Ляшенко О. І., Литвинова С. Г., Луговий В. І., Мальований Ю. І., Пінчук О. П., Топузов О. М. Науково-методичне забезпечення цифровізації освіти україни: стан, проблеми, перспективи. *Науково-методичне забезпечення цифровізації освіти України: стан, проблеми, перспективи* : Наукова доповідь загальним зборам НАПН України, 18-19 листопада 2022 р. *Вісник Національної академії педагогічних наук України.* 2022. № 4 (2). С. 1–49. https://doi.org/10.37472/v.naes.2022.4223.

13. Кучерак І. Цифровізація та її вплив на освітній простір в контексті формування ключових компетентностей. *Інноваційна педагогіка*. 2020. № 22(2). С. 91–94. http://www.innovpedagogy.od.ua/archives/2020/22/part_2/22.pdf.

14. Лисогор Л., Берендєєв С., Косенчук Ю. Використання електронних освітніх матеріалів у освітньому процесі: сучасні підходи і технології Нової української школи. Випуск 1 : Навчально-методичний посібник. Київ, 2023. 117 с.

15. Ляшенко О. 6 платформ для створення тестів на урок. *JustClass*. 2025. URL: https://justclass.com.ua/blog/6-platform-dlya-stvorennya-testiv-na-urok/

16. Модернізація освіти в цифровому вимірі: монографія / за наук. ред. Н. Морзе, О. Буйницької. К. : Київ. ун-т ім. Б. Грінченка, 2021. 300 с.

17. Савчук О. Д., Єгорова І. В. Цифровізація та розвиток критичного мислення в освітньому процесі. *Science and society: modern trends in a changing world* : Proceedings of the 2nd International scientific and practical conference. MDPC Publishing. Vienna, Austria. 2024. Pp. 334–338.

18. Сервіси для інтерактивних дистанційних уроків. *TeachHub : Незалежна Освітня Корпорація.* URL: https://teach-hub.com/servisy-dlia-interaktyvnykh-dystantsiynykh-urokiv/

19. Цифрова трансформація відкритих науково-освітніх середовищ : монографія / Ін-т цифровізації освіти НАПН України ; [колектив авторів ; ред. О. М. Спірін, О. П. Пінчук]. Київ, 2024. 308 с.

20. Цифрова трансформація освіти: теоретико-методичні засади : монографія / за заг. ред. В. П. Сергієнка; за наук. ред. Н. П. Франчук. Київ : Вид-во УДУ імені Михайла Драгоманова, 2024. 382 с.

21. Цифрові технології в освіті: сучасний досвід, проблеми та перспективи : монографія / Т. А. Васильєва та ін. ; за заг. ред. д-рки екон. наук, проф. Т. А. Васильєвої, д-ра екон. наук, проф. Ю. М. Петрушенка. Суми : Сумський державний університет, 2022. 150 с.

22. Шпарик О. Концептуальні засади цифрової трансформації освіти: європейський та американський дискурс. *Український педагогічний журнал*. 2021. № 4. С. 65–76. https://doi.org/10.32405/2411-1317-2021-4-65-76.

23. Classtime як інструмент взаємодії викладача та студентів. *Classtime.* URL: https://www.classtime.com/blog/microlearning-testuvannya-v-universytetah/

24. Necherda V., Bezruk K., Petrochko Zh., Kyrychenko V., Denysiuk O. Gamification as a means of forming socially successful personality of a teenager. *«E-learning». E-learning & Artificial Intelligence (AI).* Katowice–Cieszyn: University of Silesia in Katowice, 2023. V.15. Pp. 173–185.

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