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ТЕХНОЛОГІЯ ХАКАТОНУ ЯК НЕВІД'ЄМНА ЧАСТИНА ДИСТАНЦІЙНОГО НАВЧАННЯ В УМОВАХ ВІЙНИ

HACKATHON TECHNOLOGY AS AN INTEGRAL PART OF DISTANCE LEARNING IN TIME OF WAR

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ABSTRACT

The article examines the features of a hackathon in the light of pedagogical discourse as an integral part of distance learning in conditions of war. It is noted that in the modern world, where the application of innovative technologies has become a common practice, the educational process is no exception, as it requires the continuous integration of modern methodologies. The goal of higher education institutions is to prepare competitive specialists capable of solving complex problems in non-standard situations.

Thanks to these hackathons, learners have the opportunity for continuous professional development through creative and scientific self-realization, even in an online mode. The article analyzes the hackathon as a new method of project-based learning, noting that this technique is specifically aimed at developing the necessary soft skills in higher education students, motivating them to actively use information and communication technologies, and fostering teamwork skills. The article analyzes and summarizes the works of scholars dealing with the issues of project-based learning and proposes generalized rules for organizing hackathons, taking into account the requirements for future specialists.

The study also proposes conditions for using pedagogical hackathons in the educational process, which enhances the effectiveness of independent learning and the development of skills in learners, necessary for further professional development and acquisition of essential skills in professional activities. The conclusions contain recommendations and advice on organizing the necessary educational conditions for implementing hackathons in the learning process, creating a creative environment that fosters the development of creativity, creative skills, and critical thinking in learners, especially during a state of war, when distance learning becomes the only possible form of education.

Key words: *hackathon, educational process, modern methodologies, application, project-based learning.*

In the modern world, the term «hackathon» has become so popular that it has long exceeded its initial meaning. As noted by V. Kyrychenko and V. Necherda, originally «created in the programming environment, the term «hackathon» (from English «hack» and «marathon») was used for a certain period of time to denote a forum of IT specialists, whose goal was to develop a complete software product in a short period of time. However, today the hackathon has expanded its scope and has become a platform for joint solutions by stakeholder teams of various socially significant issues» [1, c. 157].

However, in the contemporary scientific and pedagogical discourse, researches related to the use of hackathons in English language learning sessions are still inadequately represented. Therefore, without a doubt, this work is relevant and holds prospects for further research in this direction.

Therefore, the aim of our article is to explore and analyze specifically the pedagogical hackathon as an effective tool of distance learning during the war, which is a combination of theoretical and practical components aimed at enabling learners to master critical thinking, public speaking skills, and the ability to work with and analyze large volumes of informational resources and sources despite the circumstances.

Simultaneously with the advantages of distance learning (the modern level of computer technology and diverse software provides wide opportunities for enhancing the effectiveness of education), there are several drawbacks. The use of computer technologies during war significantly complicates the situation because distance learning requires access to the internet, adequate technical equipment (computer, laptop, tablet, smartphone, etc.) for all participants in the educational process, as well as educators' proficiency in distance education technologies. Therefore, when planning the use of modern technologies in the educational process, it is crucial to consider challenges such as the need for self-discipline and ensuring students have the necessary technical resources and free access to the internet. If all these factors are taken into account, educators can confidently apply innovative methodologies in their lessons, including hackathons.

Encouraging and motivating learners to engage in scientific activities is particularly relevant and necessary during times of war, despite the circumstances and difficulties they and their teachers currently face. The research activities of learners are an important component of developing highly qualified specialists, so the main task facing modern Ukrainian educators is to help learners cope with challenging research problems and research methods, with the aim of enhancing their research competencies. Therefore, research methodologies utilizing hackathons in the scientific work process are quite relevant.

Considering the current situation in Ukraine, distance learning with the usage of different digital tools appears to be practically the only viable format

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of education. The use of various interactive methods and evolving innovative technologies, developed alongside modern advancements, aids in this. As asserted by Brittany Ann Kos, «with the fast expansion of the use of digital platforms for education into many diverse groups and purposes, more and more issues are coming up that must be researched on and provide solutions. Hackathons provide an appropriate way to quickly take up the challenges and gain further insight into them with wider participation and innovative approaches of wider community in education technology arena. Hackathons at higher education institutional levels have been developed since early 2000 and have recently been growing rapidly. These hackathons are often handled by students with minimal institutional support» [2].

In our opinion, the use of hackathons in the educational process will help learners skillfully apply their acquired theoretical knowledge in practice using various innovative technologies and digital tools through skills in independent research and the ability to correctly analyze the obtained material. By replenishing and expanding their knowledge in the realm of science, learners will more quickly acquire the skills to apply theoretical material in practice. Indeed, the creative and scientific self-realization of learners is an important component of the cultural and educational space of the university.

The modern educational process is now inconceivable without the use of internet resources, the involvement of interactive forms of learning, podcasts, presentations, etc., and it is precisely this that stimulates and interests contemporary learners in their studies. Students are most interested in the use of new approaches and forms of conducting classes that offer a wealth of opportunities for scientific activity and creativity, namely hackathons, debates, briefings, and interviews.

Analyzing previous teaching experience, we conclude that it is now impossible to form the professional competence of modern learners using only traditional forms of work (lectures, question-and-answer format seminars, test tasks), which are solely focused on the transfer of academic knowledge, skills, and abilities.

The overview of recent works by foreign scholars (B. Calderhead, D. Groen, M. Lionaite, A. Stoltzfus) indicates that hackathons are increasingly being used in the educational process as an important tool for «developing professionally-oriented communicative competence in students majoring in language specialties, the necessity of integrated foreign language teaching in higher education language institutions, etc.» [3]. Domestic researchers such as O. Dolhova, L. Kalinina, V. Kyrychenko, V. Necherda, V. Papizhuk etc. have also devoted their works to exploring the pedagogical potential of educational hackathons.

So, nowadays hackathons have become an integral part of the educational process, driving creativity and pushing the boundaries of

technology. They provide a platform for rapid prototyping, experimentation, and learning while addressing real-world problems. Hackathon technology, which often involves collaborative problem-solving, creativity, and rapid prototyping, can be applied in various ways to enhance English language teaching and learning. This technology can be used to develop innovative language learning methods. It is important for educators to engage learners through interactive lessons, quizzes, and gamification. Thus this technology can cater to different language proficiency levels and learning styles.

V. Shvyrka in her work «Educational Hackathon as a Technology for Developing Soft Skills in Higher Education Learners», points out that «one of the main advantages of using hackathons is the stimulation of creativity and innovation. Participation in hackathons allows higher education learners to go beyond the boundaries of the curriculum and bring their own ideas to life. This promotes the development of independence, critical thinking, and problem-solving skills in students» [4].

So hackathons are very effective and useful especially during the period of distance learning, because they are organized to build virtual language labs where students can practice speaking, listening, and interacting in English. These labs may incorporate speech recognition technology and virtual reality (VR) for immersive language experiences.

As emphasized by O. Dolhova in her research «Hackathons as an Innovative Form of STEM Education: The Practical Experience of Student Self-Government Leaders», «foreign scholars argue that participation in hackathons contributes to participants gaining valuable experience and improves motivation for self-education and self-improvement. In their opinion, conducting hackathons strengthens the social community by fostering social responsibility, awareness of issues and best practices for addressing them, and also creates opportunities for accessing useful informational resources» [5, c. 182-183].

Using this technology, teachers have the great opportunity to involve students (learners) into working on projects including videos, articles, and interactive exercises that help learners with pronunciation, grammar correction, and conversational practice. These activities can provide instant feedback but should be adapted to individual learners' needs.

As V. Kyrychenko and V. Necherda note, «the spread of the hackathon technology in various spheres, from business to education, demonstrates the exceptional effectiveness of the hackathon as a means of solving tasks in a dynamic environment. The value of this technology is determined by its very essence as a team event for the collective solution of a practical task or the creation of a certain project within a limited time (from one to several days)» [1, c. 159]. According to O. Dolgova, «the time limitation encourages participants to immediately focus only on the important functionality.

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That's why the hackathon... is a unique experience of teamwork, allowing participants to learn to interact effectively under the constant pressure of time constraints» [5, c. 181].

This perspective highlights the value of hackathons in educational settings. They provide a platform for students to engage in intensive, collaborative problem-solving, simulating real-world conditions where time constraints and the need for efficient teamwork are paramount. This approach not only enhances technical and intellectual skills but also fosters essential soft skills like communication, time management, and collaborative problem-solving, which are crucial in professional environments.

So, we can say that the use of hackathons has long gone beyond the range of 'IT technology and programming', actively evolving into the concept of 'educational' or 'pedagogical' hackathon. However, certain rules and instructions for using hackathons in the educational process have also emerged:

1. The most important aspect is to engage, motivate, and involve educational seekers (academic group, course, etc.) in the process.
2. An important point is the involvement of all participants in the process without exception, distributing roles and tasks according to the abilities and skills of the learners. In this, a significant role should be played by the teacher, instructor, mentor, as the effectiveness and success of the entire project depends on this.
3. Proper allocation of time for problem setting, material search, processing, analysis, and compilation.
4. Proper incentives for teams regarding the successful publication of their work results and further self-development.

All factors confirm that educational hackathons effectively influence the development of critical thinking skills in learners, the ability to collaborate in teams, and solve problems collectively (the ability, by analyzing multiple problem-solving options, to find the most correct one). It contributes to the socialization of learners and the unveiling of their creative potential.

Analyzing recent research on hackathons in the educational field (O. Dolhova, V. Necherda, L. Kalinina, V. Kyrychenko, V. Papizhuk, V. Shvyryka), we can talk about «two main types – internal, which is conducted within one educational institution, and external, where participants come from different educational institutions. Both types can have different formats: online, offline, or a mixed format» [3, c. 39]. In our classes, we have repeatedly used internal hackathons for learning English. In general, the algorithm for implementing an educational hackathon in classes is as follows:

Team Formation: Participants typically form teams where each member contributes their unique skills and knowledge. In the case of educational hackathons, teams may consist of teachers, students, educational technology developers, and other interested individuals.

Problem Definition: At the beginning of the hackathon, organizers present a problem or topic that participants will work on. In the context of education, these could be challenges related to teaching methods, access to education, technology integration, and so on.

Intensive Work: Participants work on developing solutions during a specified time, which can range from one day to several days. This includes brainstorming, planning, designing, and implementing ideas.

Mentor Support: Mentors, often experienced professionals in the field, are often present at hackathons to provide advice and guidance to participants.

Project Presentations: At the end of the event, teams present their projects or solutions to a jury or audience. This may involve demonstrating prototypes, giving presentations, or engaging in discussions.

Evaluation and Awards: A jury consisting of experts in the relevant field assesses projects based on various criteria such as innovativeness, practicality, impact, technical implementation, etc. The best projects may be rewarded with prizes or recognition.

Networking and Idea Exchange: Hackathons also provide an excellent opportunity for networking and idea exchange among participants, mentors, and organizers.

In the context of educational hackathons, the main focus is on addressing issues in the field of education, developing new educational approaches, tools, or resources that can enhance the quality and accessibility of education. This may include the development of educational programs, digital tools, teaching methodologies, and more.

There are also a lot of language learning games simulations that can be used in educational process and help students immerse in English language contexts. These games are always designed to teach vocabulary, grammar, and cultural understanding.

We are sure that during distance learning teachers can organize online language challenges or competitions where students can participate in hackathon-style events to solve language-related problems. This can foster collaboration and friendly competition among learners.

Another efficient activity in the context of hackathon technology is the creation of language learning chatbots that can allow learners to practice conversational English. These chatbots can engage in dialogues, answer questions, and simulate real-world conversations.

Thus the modern world demands a high-level technological education to ensure an individual's competitiveness in the job market. This has led to the need to search for new methods and means of education that would help students acquire not only theoretical knowledge but also practical skills necessary for successful adaptation in contemporary society. One such method is the use of hackathons in the educational process, which

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provides students with the opportunity to work in teams on real projects, solve problems, and develop practical skills essential for their future careers.

So in time of war or when traditional classroom teaching is not possible, hackathon technology can be used to develop and support remote English language teaching platforms, ensuring access to education even in challenging circumstances. When implementing hackathon technology in English language teaching, it is crucial to consider the needs and preferences of the learners and to maintain a focus on effective pedagogy.

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АНОТАЦІЯ

У статті розглянуті особливості хакатону у світлі педагогічного дискурсу як невід'ємної частини дистанційного навчання в умовах війни. Зазначено, що в сучасному світі, коли застосування інноваційних технологій стають звичайною практикою, освітній процес не є винятком, тому що вимагає постійного залучення сучасних методик.

Саме завдяки їм здобувачі мають можливість безперервного професійного розвитку через творчу та наукову самореалізацію навіть в онлайн режимі. У статті проаналізовані та узагальнені роботи вчених, що займаються проблемами проектного навчання, запропоновані узагальнені правила організації хакатонів з урахуванням вимог до майбутніх фахівців. Незважаючи на доволі велику кількість робіт на цю тематику, у статті наголошується, що використання хакатонів як методу навчання стає дедалі поширенішим серед викладачів і здобувачів, адже в умовах війни українські здобувачі не завжди мають змогу доєднуватися до занять вчасно, а працювати над проєктами, запропонованими викладачами, працювати у команді, бути відповідальним за конкретні завдання, активно долучатися до дискусій на платформах і в чатах, коли у них є можливість і доступ до інтернету, вони завжди мають змогу, тому хакатон і є одним з найкращих засобів навчання та розвитку здобувачів у сучасних українських реаліях.

Проаналізувавши сучасні дослідження, авторка статті також узагальнила, компілювала та універсалізувала умови використання педагогічних хакатонів в освітньому процесі, що дозволяє підвищити результативність самостійного навчання та формування навичок у здобувачів, необхідних для подальшого професійного розвитку та набуття необхідних навичок у професійній діяльності. Висновки містять рекомендації та поради щодо організації необхідних освітніх умов для впровадження хакатонів у навчальний процес, створення креативного середовища, що сприяє розвитку у здобувачів креативності, творчих навичок та критичного мислення, особливо під час військового стану, коли дистанційне навчання стає єдино можливим видом навчання.

Ключові слова: *хакатон, освітній процес, сучасні методики, застосування, проектне навчання.*

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