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GENIALLY DIGITAL ESCAPE ROOMS AS A MICRONEARNING TOOL IN THE CONTEXT OF A TRAUMA- INFORMED APPROACH

***Summary.** The article substantiates the feasibility and effectiveness of the trauma-informed approach, the concept of microlearning and gamified digital technologies in the modern space of higher education in Ukraine. The essence of microlearning as a methodological system for managing human cognitive resources, based on the principles of granularity, temporal brevity, reducing mental load and personalization, is detailed. It is determined that the most relevant tool for the practical implementation of these principles is the Genially cloud platform, which provides multi-level interactivity, visual dynamics and wide possibilities for integrating multimedia content. As a practical case, the article presents the structure, functional features and experience of implementing the author's online educational quest "Rescue Mission: Solving the Pedagogical Crisis", developed on the Genially platform within the framework of the international Erasmus+ SAFE LEARN project.*

***Keywords:** higher education, trauma-informed approach, microlearning, Genially, educational escape rooms, gamification, cognitive load, SAFE LEARN project.*

The modern space of higher education in Ukraine operates in conditions of unprecedented challenges caused by a full-scale war, prolonged chronic stress, systemic blackouts and constant air alarms. This complex of extreme factors creates excessive psycho-emotional stress on higher education students, transforming their mental state and reducing adaptation reserves. In conditions where a significant part of the students has direct or indirect traumatic experience, there is an urgent need to restructure didactic models and implement a trauma-informed approach in the educational process of higher education institutions. This approach requires the educational institution not only to transfer knowledge, but also to create a flexible, predictable and psychologically safe environment

that minimizes the risks of retraumatization and supports the mental health of students.

Formulation of the problem. Traditional pedagogical formats, focused on long lectures, monotonous perception of large amounts of information and a rigid system of deadlines, in modern realities demonstrate their inefficiency, and sometimes even destructiveness. Prolonged stress triggers the protective mechanisms of the nervous system (the so-called «reptilian brain»), which leads to a significant deterioration in students' cognitive abilities: there is a pronounced deficit of attention, fragmented perception, a decrease in the volume of working memory and rapid mental fatigue. Instead of stimulating academic success, strict administrative restrictions and cognitive overload only deepen stress, causing apathy, anxiety or frustration in emotionally exhausted students. Thus, we have a contradiction between the available students' cognitive resources and outdated tools for organizing learning that arises rapidly, and this requires the search for new, adaptive didactic solutions.

Analysis of recent studies. The problem of adapting higher education to crisis conditions and integrating innovative didactic tools is in the focus of attention of many modern researchers. The study of scientific discourse allows us to identify three key vectors of research: theoretical and methodological foundations of trauma-informed pedagogy, the didactic potential of microlearning, and the use of gamified digital solutions (in particular, digital educational escape rooms). The problem of adaptation, features, problems and prospects of the trauma-informed approach in education were considered in the studies by S. Buzhynska, T. Holovatenko, F. Linderkamp, I. Marchenko, L. Ponomareva, O. Rogovska, J. Cazale, O. Tashkinova and others [1; 3; 8; 10 etc.]. In particular, T. Holovatenko studied the experience of European countries in implementing trauma-sensitive teaching technologies [3]. Changes were identified at the organizational (providing microqualifications, distance learning) and content (primarily integrated courses) levels. However, it was emphasized that specific methods of the trauma-informed approach in the educational process are still at the stage of implementation and testing for effectiveness.

A. Venet, T. Galtseva, N. Huber, S. Litvynova, S. Sharov, T. Sharova, et al. studied specific methods and techniques of the trauma-informed approach, including the use of ICT, in higher education. [2; 6; 12; 15, etc.]. In this aspect, microlearning is considered in particular detail, since the modern conditions of distance learning provide for exactly this format of the organization of the educational process.

Special attention was paid to quests, in particular escape rooms as an effective pedagogical technology. Their advantages in the educational process in

the context of microlearning, the specifics of structuring, and the methodology of use in higher education have already been studied in the works by N. Didyk, A. Karpyuk, V. Martynyuk, L. Martynyuk, I. Sokol, T. Trofymyuk-Kyrylova, S. Chybyryak, et al. [4; 7; 14, etc.]. We have also already considered escape rooms in our studies, focusing primarily on storylines and possibilities of their application in accordance with the field of knowledge and educational goals [16]. But these studies rather identify promising directions for the development of higher education and further studies, since they provide for gradual implementation, resource development, and observation of their effectiveness in higher education institutions.

Forming the goals of the article. The purpose of the publication is to substantiate and demonstrate the effectiveness of using online quests on the *Genially* platform as a microlearning tool for creating a safe, non-traumatic, and effective educational environment in higher education.

Main part. In the context of the digital transformation of education and the intensification of information flows, traditional educational formats undergo a significant conceptual reconfiguration. One of the most dynamic trends in modern pedagogical science and practice is microlearning.

In the scientific discourse, microlearning is understood as the organization of the educational process with the help of discrete, highly concentrated and relatively short learning units (microdoses). This approach is focused on fragmented, but systematic assimilation of knowledge and the formation of specific competencies without excessive cognitive load on the student. In conditions of constant stress due to the events in Ukraine, uncertainty of conditions and the need to quickly respond to unforeseen circumstances, students, as well as teachers themselves, often cannot concentrate and systematically solve global problems or tasks.

So, unlike macrolearning (traditional lecture courses or multi-module programs), microlearning appeals to the concept of «lifelong learning» and the concept of «just-in-time learning», which allows the integration of educational content directly into a person's daily or professional activities.

The effectiveness of microlearning as a didactic system is determined by a specific set of internal characteristics and methodological principles that separate it from other forms of distance education:

- *flexibility and accessibility* – the ability to access short, targeted content via mobile devices and learning management systems (LMS) at one's own pace and in convenient circumstances;

- *independent and self-regulated learning* – feasible tasks that learners are able to master by concentrating and having certain algorithms of action. In

addition, micromodules are designed as independent elements (modular bricks), from which an individual educational trajectory can be built [2; 11];

- *temporal brevity (shortness of time)* – the duration of a learner's interaction with one educational element usually lasts up to 10 minutes. Such a time limit is consistent with the psychophysiological features of modern information perception («clip thinking») and allows you to keep the focus of attention on peak indicators, minimizing cognitive fatigue;

- *reduction of cognitive load* – microlearning is based on the theory of cognitive load of J. Sweller [see: 5]. Since the volume of human working memory is limited, the portioned presentation of information blocks the overload of the brain's operating system with extraneous data, directing the entire mental resource to the direct processing and structuring of the necessary knowledge here and now;

- *variety of formats* – to ensure maximum efficiency, microlearning involves a wide range of multimedia technologies. Their use provides the optimal ratio of text, visual and audio content.

Because of all these aspects, we consider it advisable to use the online resource *Genially* in the educational process. This is a cloud platform designed to create interactive and animated visual content (presentations, infographics, gamified modules, quizzes and virtual worlds) without code. In addition, it allows you to involve other platforms with practical tasks (*LearningApps*, *Wardwall*, etc.), insert links to external resources (*YouTube*, photo and image repositories, online pages of media and scientific journals, government agencies, etc.), create interactive sheets, presentations, and use gamification to increase motivation and interest in learning.

As for the latter, *Genially* offers a number of ready-made escape rooms of various directions, which can be adapted to your educational needs if necessary. Each type of escape room has its own purpose in accordance with the educational goal [16], a clearly defined plot scheme and a set of tasks, the successful completion of which will allow you to leave the «closed» space of the virtual location.

The structural, content and functional features of educational escape rooms, identified by scientists [4], make them organic microlearning tools. Thus, a traditional educational quest consists of separate rooms, stages or locations. In the context of microlearning, each stage is an autonomous microunit of content (microdose). For example, the player gets to the location (spends 1 min), studies one short infographic, photo or watches a 2-minute video (embedded in the interior of the room), solves a relevant puzzle task based on what he / she heard (usually up to 5 min) and receives the key to the next level. In this way, the overall long quest is broken down into a series of self-contained microlearning sessions.

An example of an escape room that allows to consolidate and deepen the knowledge, skills and abilities of a trauma-informed approach in the educational process can be the developed game «Rescue Mission: Solving the Pedagogical Crisis» (Fig. 1). A trainer or teacher can apply it to train students at the «Master's» level, within the courses «Teaching Methods in Higher Education» and «Technologies of Trauma-Sensitive Learning», at the educational and scientific level, in particular during the preparation of postgraduate students for assistantship practice, as well as teachers of educational institutions of various levels.

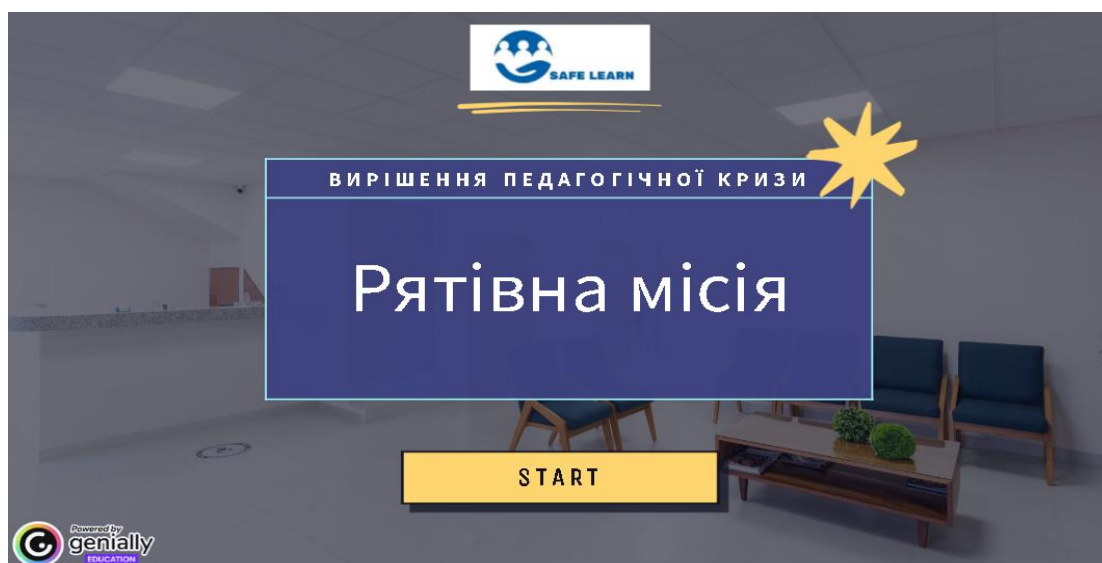


Fig. 1. Title page of the escape room «Rescue Mission: Solving the Pedagogical Crisis» on the *Genially* platform

The escape methodology is design according to Erasmus+ project in the field of higher education (CBHE, KA2) «SAFE LEARN: Supporting Adaptive and Flexible Education for War-Affected Students in Ukraine» for training course «Resilient Teaching».

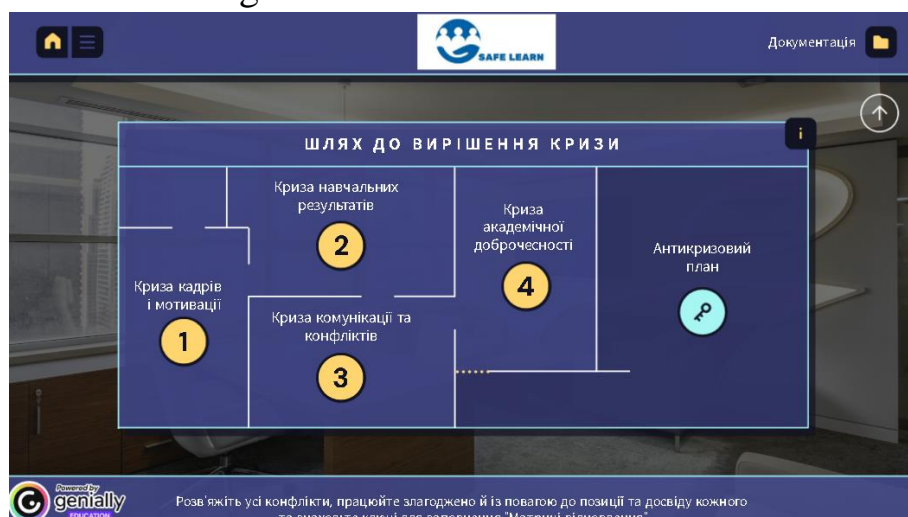


Fig. 2. Mapping of the escape room

Designed for a total of 45-60 minutes, the quest involves passing through separate rooms (Fig. 2), each of which offers a way to solve a distinct pedagogical crisis through tasks of different types. Successful completion of each stage will earn participants a digital or verbal code that lets them move on to the next quest's room. At the same time, in the first room, students receive a document outlining proposed roles, which they can divide as they see fit, along with the rules of conduct and key principles of group work. They can refer to this document at any time, for example, if desired, to redistribute positions in the team during the discussion of the proposed cases.

An escape room presents different types of tasks, such as sorting elements according to their category (carried out using the *LearningApps* platform); establishing correspondences, in particular, between problems related to learning outcomes and methods for solving them (Fig. 3); searching for words; working with video fragments (created using the *Vidnoz* application), etc.

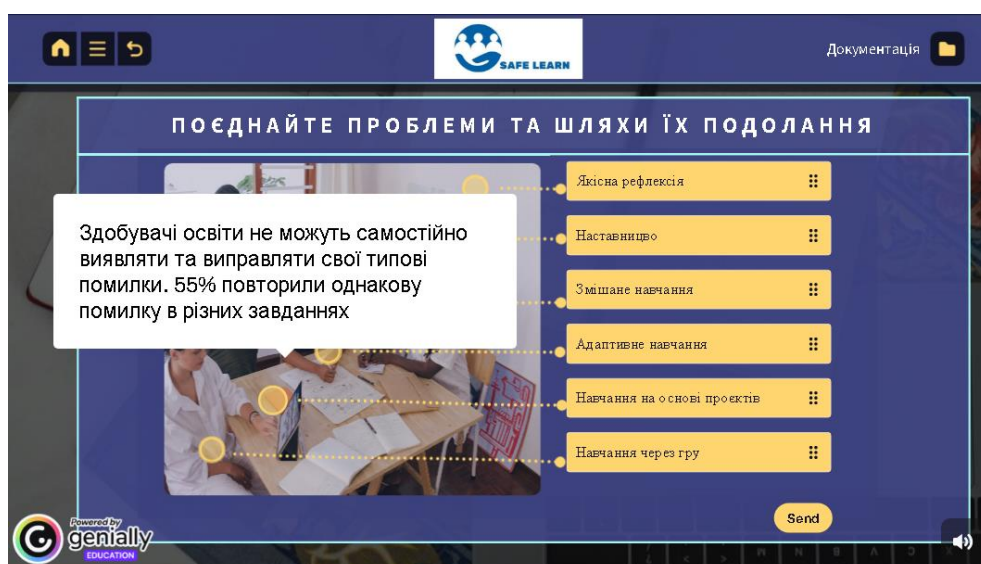


Fig. 3. Exercise to establish correspondence between pedagogical problems and methods for solving them

According to its pedagogical purpose, the escape room «Rescue Mission...» is educational. As the experience of conducting the quest has shown, the microsteps described above help maintain the interest of the participants (What other crises can we invent? What task should we expect now?) and a positive mood, maximally involve everyone in the team in group work, and work through practical cases and tasks to consolidate knowledge, skills, and abilities of trauma-sensitive teaching. This quest can be both part of the lesson and a full-fledged way to organize classroom or extracurricular work.

Conclisions. Thus, a trauma-informed approach to the educational process involves flexibility and adaptability to today's conditions. During a period of crisis and stress for students and teachers, the best approach in trauma-sensitive teaching is the microlearning format.

Microlearning is not just a «shortened version» of traditional learning, but is a customized, methodologically sound system for managing cognitive resources. It serves as a relevant response to the challenges of the information society, optimizing the processes of selection, perception, archiving, and updating knowledge in conditions of time scarcity and stress.

To ensure microlearning, educators use multimedia technologies. Among them, it is worth paying attention to *Genially*. This online resource meets all the needs of microlearning: it provides interactivity, a variety of tasks, quick changes in activities and locations, access to various information sources, and gamification, with the ability for users to move at their own pace and to form their own educational trajectory. An example of this is the escape room «Rescue Mission: Solving the Pedagogical Crisis».

The use of online resources, in particular *Genially*, will allow teachers at higher education institutions to maintain a high level of educational process quality even in conditions of uncertainty and professional challenges.

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Землянська А.В., Шарова Т.М., Легеза Д.Г. Цифрові квест-кімнати Genially як інструмент мікронавчання в контексті травмоінформованого підходу

Анотація. У статті обґрунтовано доцільність та ефективність травмоінформованого підходу, концепції мікронавчання (microlearning) та гейміфікованих цифрових технологій у сучасному просторі вищої освіти України. Деталізовано сутність мікронавчання як методологічно обґрунтованої системи управління когнітивними ресурсами людини, що базується на принципах гранулярності, часової лаконічності, зниження ментального навантаження та персоналізації. Визначено, що найбільш релевантним інструментом для практичної реалізації цих принципів є хмарна платформа Genially, яка забезпечує багаторівневу інтерактивність, візуальну динаміку та широкі можливості інтеграції мультимедійного контенту. Як практичний кейс у статті представлено структуру, функціональні особливості та досвід імплементації авторського навчального онлайн-квесту «Рятівна місія: вирішення педагогічної кризи», розробленого на платформі Genially в межах міжнародного проєкту Erasmus+ SAFE LEARN.

Ключові слова: вища освіта, травмоінформований підхід, мікронавчання, Genially, освітні квест-кімнати, гейміфікація, когнітивне навантаження, проєкт SAFE LEARN.