

Adaptive educational technologies for overcoming the psycho-emotional barriers of higher education students in conditions of uncertainty

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ABSTRACT

Aim: To analyze the changes in the psycho-emotional state of participants in the educational process in Ukraine under wartime conditions and to identify effective educational technologies for overcoming psycho-emotional barriers.

Materials and Methods: The research applies both quantitative and qualitative analyses of data collected through surveys of 269 students and 100 faculty members at higher education institutions (totally, 369 respondents). The study is grounded in an interdisciplinary approach that combines psychological, pedagogical and sociological methods.

Results: The most common issues were anxiety, fear, and emotional exhaustion (222 individuals [60,2 %]). Problems with stress resilience were noted by 96 respondents (26,0 %), and traumatic wartime experiences were a challenge for 60 respondents (16,3 %). Feelings of physical danger were noted by 58 people (15,7 %). Misinformation and the information war were mentioned by 50 respondents (13,5 %). A total of 27 respondents (7,3 %) were forced to change their place of study, 12 (3,3 %) reported experiencing bullying, and 9 (2,4 %) reported discrimination based on origin or views. It has been found that the use of educational technologies such as trauma-informed approaches, coaching, mentoring, and mediation contributes to reducing stress levels and supporting psychological well-being.

Conclusions: In times of crisis, the educational process should focus not only on achieving academic outcomes but also on maintaining the psycho-emotional health of all participants. An integrated approach to learning, including adaptive educational technologies aimed at overcoming psycho-emotional barriers of higher education students, ensures the sustainability of the educational environment.

KEY WORDS: higher education, psycho-emotional barriers, educational technologies

Wiad Lek. 2025;78(6):1071-1077. doi: 10.36740/WLek/207367 DOI

INTRODUCTION

Modern education is significantly affected by global crises, including pandemics, armed conflicts, economic instability, and technological transformations. These factors create conditions of uncertainty that impact the psycho-emotional state of higher education students, complicate the learning process, and lower students' motivation and adaptability [1]. During the full-scale Russian invasion, the problems faced by participants in the educational process in Ukraine intensified, sometimes taking on threatening proportions [2].

One of the key strategies for overcoming psycho-emotional barriers is the implementation of adaptive educational technologies aimed at creating a safe learning environment, developing stress resilience, and increasing students' emotional intelligence. The use of coaching, mentoring, and mediation practices, as well as the principles of trauma-informed education and

awareness-raising about mental health preservation and support, helps to minimize the impact of stressors and foster psychological flexibility among students.

AIM

The purpose of this article is to analyze and summarize modern educational technologies that support overcoming the psycho-emotional barriers of higher education students in uncertain conditions, taking into account the emotional needs of participants in the educational process as identified through the conducted survey.

MATERIALS AND METHODS

The main research tool was an online questionnaire, which included sections aimed at determining the level

of psycho-emotional stress, students' adaptation mechanisms, and the effectiveness of various educational technologies in overcoming psychological barriers. Participants in the survey included individuals from higher education institutions in major Ukrainian cities — Kyiv, Kharkiv, Lviv and Kherson — totaling 369 respondents, of whom 269 were students and 100 were faculty members, administrators, and support staff, categorized as other participants in the educational process.

ETHICS

The authors adhered to the Ethical Principles for Medical Research Involving Human Subjects outlined in the World Medical Association's Declaration of Helsinki and current Ukrainian regulations. The study protocol was approved by the local ethics committee. Participation in the survey was voluntary and anonymous.

RESULTS

A study conducted by the authors in autumn 2024 confirmed a significant deterioration in the psycho-emotional state of respondents from higher education institutions. The most common response to the question "How has your psycho-emotional state changed since the beginning of the full-scale invasion?" was "worsened," selected by 169 individuals (45,8 %). This indicates that nearly half of the respondents experienced negative changes in their psycho-emotional condition related to general stress and emotional strain. One in four survey participants (94 respondents [25,5 %]) chose "significantly worsened," confirming major psychological changes due to future uncertainty and increased stress factors. The response "hard to say" was selected by 73 respondents [19,8 %], suggesting that some participants may not be able to identify the impact of the war on their psycho-emotional state, possibly due to adaptation to conditions that have become familiar. The least common response was "no change," chosen by only 33 respondents (8,9 %). This indicates that only a small proportion of respondents did not feel any change in their emotional state, which may reflect psychological stability or an inability to perceive the effects of martial law. Overall, 71,3 % of respondents (the sum of "worsened" and "significantly worsened") reported a negative impact of the war on their psycho-emotional state, pointing to deep emotional distress in the educational environment under conditions of full-scale war.

Differences in responses between educators and students highlight varying levels of stress and adaptation, shaped by their roles and workload. Students more

frequently experience uncertainty: 22,7 % selected "hard to say," indicating challenges in self-reflection. Educators and administrators emphasized a decline in emotional well-being (87 %), pointing to greater stress and responsibility. In a climate of uncertainty, the educational process cannot focus solely on academic outcomes. It is essential to support the psycho-emotional well-being of all participants. Education and, more specifically, the implementation of adaptive educational technologies should help overcome psycho-emotional barriers and preserve mental health. The integration of psychological support into the educational process not only enhances learning but also facilitates adaptation to change, ensuring resilience and comfort during wartime.

The identification of adaptive educational technologies that can effectively help overcome the psycho-emotional barriers of higher education students must be based on reliable empirical data. Therefore, let us analyze the results of the survey. Respondents' answers to the question "What psycho-emotional difficulties have you encountered at your educational institution during the war?" indicate a significant impact of the war on their well-being and the learning process (Fig. 1).

The most common issues were anxiety, fear, and emotional exhaustion (222 individuals [60,2 %]). A high level of stress was accompanied by uncertainty about the future (189 individuals [51,2 %]). A major challenge was the change in the learning format, which complicated adaptation for 150 respondents (40,7 %). A total of 102 people (27,6 %) faced difficulties due to a lack of resources (computers, internet access, educational materials), indicating limited access to education. Problems with stress resilience were noted by 96 respondents (26,0 %), financial difficulties by 86 (23,3 %), and traumatic wartime experiences were a challenge for 60 respondents (16,3 %). Feelings of physical danger were noted by 58 people (15,7 %). Misinformation and the information war were mentioned by 50 respondents (13,5 %), and conflicts in the educational environment by 41 (11,1 %). A total of 27 respondents (7,3 %) were forced to change their place of study, 12 (3,3 %) reported experiencing bullying, and 9 (2,4 %) reported discrimination based on origin or views.

A comparative analysis of the survey responses from students and other participants in the educational process revealed key differences in the perception of psycho-emotional difficulties during the war. The most widespread problems in both groups were anxiety, fear, and emotional exhaustion (62,8 % of students and 53 % of educators and administrators), as well as uncertainty about the future (47,6 % and 61 %, respectively). The

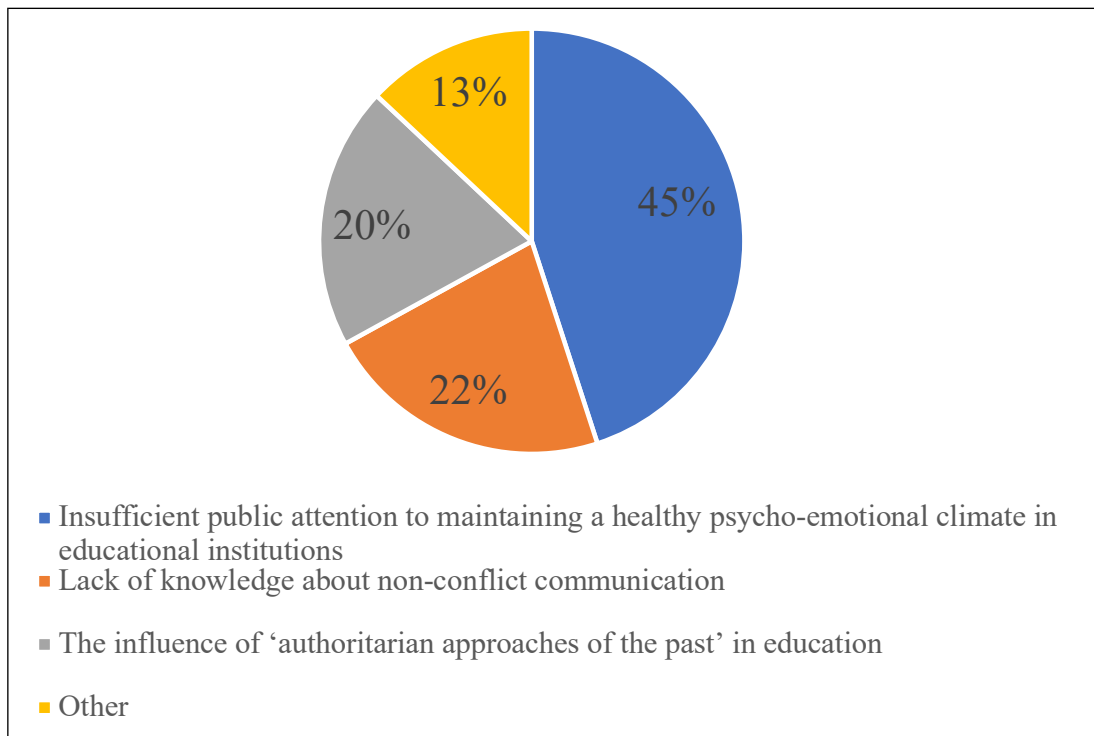


Fig. 1. The respondents' answers to the question «What psycho-emotional difficulties have you encountered at your educational institution during the war?» (%)

transition to online learning hindered adaptation for 36,8 % of students and 51 % of educators, indicating higher stress levels among adults due to the responsibility of organizing the learning process. Students were more likely to mention traumatic experiences, the impact of the information war, and bullying, while educators emphasized physical safety and anxiety about the future. Financial difficulties affected both groups almost equally. Discrimination based on ethnicity or political views was reported by few respondents, but more frequently mentioned by educators (4 % compared to 1,9 %).

High levels of stress and psycho-emotional tension among participants in the educational process affect their interaction, potentially causing conflicts and making conflict resolution more difficult. Survey participants noted that the most common approach was finding a compromise between conflicting parties, selected by 163 respondents (44,2 %). A significant portion (153 people [41,5 %]) also reported resolving conflicts through cooperation and joint problem-solving. However, some respondents indicated less constructive conflict resolution strategies. Specifically, 51 individuals (13,8 %) noted that conflicts remain unresolved, becoming "frozen conflicts." A total of 45 respondents (12,2 %) mentioned resolution through withdrawal of one of the parties, and 39 individuals (10,6 %) reported adapting to the conflict situation. The least common response was continued competition until one side wins, selected by only 15 respondents (4,1 %). Additionally, 40 respondents (10,8 %) noted other ways of resolving

conflicts, which may include unique approaches or combinations of several methods. Overall, the results show that the vast majority of respondents (over 85 %) identified some mechanisms for resolving conflicts; however, a share of situations remains unresolved or is addressed through less optimal means.

A tense psycho-emotional environment in educational institutions is shaped by various factors, including both individual characteristics of participants and socio-economic conditions. The analysis of responses among educators allows us to identify the main causes of such an environment (Fig. 2).

The most frequently cited reason was a lack of societal attention to supporting a healthy psycho-emotional climate in educational institutions (45 %), indicating an overall underestimation of the impact of mental health on the quality of education. Other significant factors included a lack of knowledge about non-confrontational communication (22 %) and the continued influence of "authoritarian approaches from the past" in education, where the learning process is associated with punishment (20 %). A separate group of respondents (13 %) identified additional factors, with war and martial law being the dominant ones. Financial difficulties, national instability, increased administrative workload, and the declining social status of educators were also mentioned, all of which particularly affect the psychological climate in universities. The low level of psychological culture in society and insufficient attention to the emotional well-being of both students and educators further complicate the situation.

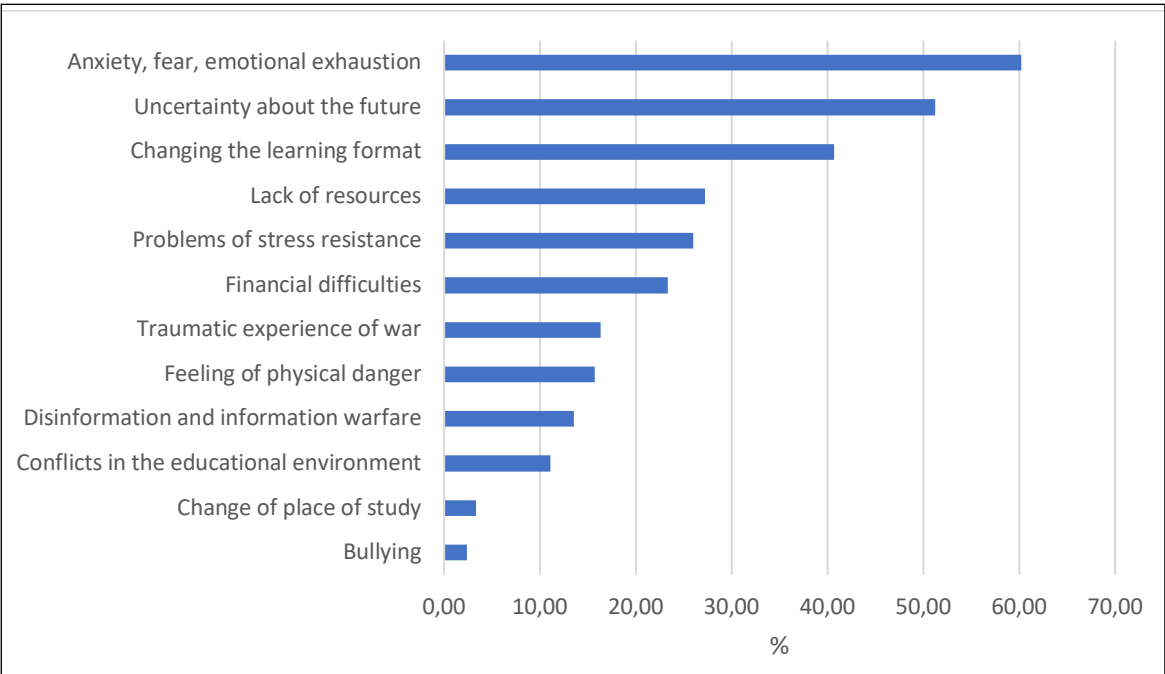


Fig. 2. The respondents’ answers to the question «In your opinion, what is the MAIN cause of the tense psycho-emotional environment in Ukrainian higher education institutions?» (%)

Thus, the causes of psycho-emotional tension are multidimensional, encompassing both individual and systemic aspects. In addition to the war, sociocultural factors and the need to raise awareness about psychological well-being play a significant role. The results highlight the necessity of support measures, including psychological assistance, adaptation programs, and tools for overcoming psycho-emotional barriers. This calls for a comprehensive approach to reforming the educational environment, taking into account the psychological needs of all participants in the educational process.

DISCUSSION

In times of war, ensuring the psycho-emotional well-being of students becomes especially important. Modern educational technologies must not only support the learning process but also help overcome psycho-emotional barriers in crisis conditions. In this context, adaptive educational technologies are particularly effective as tools for adaptive learning. The adaptability of these technologies is reflected in various technological aspects: consideration of the nature of psycho-emotional issues, appropriate psychological and pedagogical support, selection of relevant content, defining individual learning trajectories, and reducing conflict potential.

One of the key technological approaches to addressing students’ psycho-emotional well-being is trauma-informed education (TIE). Trauma-informed education

acknowledges the effects of traumatic experiences on learners and ensures a safe and supportive learning environment. It is based on an understanding of how trauma influences learning, behavior, and mental health, and it involves the use of relevant pedagogical strategies. Its core principles include recognizing trauma and its impact on student development, learning, and behavior [3]; creating a safe environment that prevents re-traumatization and supports a sense of security [4]; building skills in self-regulation and resilience [5]; emphasizing interaction among educators, students, families, and other stakeholders [6]; and ensuring flexibility, adaptability, and personalization of the learning process to accommodate the needs of students with trauma experiences [7]. Practical aspects of implementing TIE include training educators to recognize the effects of trauma and respond appropriately [8], using methods of positive pedagogy to support students’ mental well-being [9], and integrating TIE into higher education programs, especially in medical and social disciplines [10].

Coaching and mentoring, as adaptive educational technologies, play a significant role in overcoming the psycho-emotional challenges of students by supporting their adaptation, developing stress resilience, and improving emotional well-being. Mentoring is an effective tool for helping students adapt to the learning environment, fostering emotional stability, and building self-confidence [11]. Coaching and mentoring programs improve students’ ability to self-regulate and

manage stress while developing adaptation and critical thinking skills, which are essential for academic and professional success. Mentorship programs significantly improve students' psychological well-being and reduce anxiety levels [12]. Interaction with educators helps students not only cope with stress but also find effective strategies for preventing it, which is particularly important under high academic pressure. Mentorship also contributes to academic achievement by helping students overcome challenges and stay motivated, fostering independence, problem-solving abilities, and sound decision-making [13].

Special attention should be given to partnership-based communication as one of the technologies for conflict resolution, which also plays a key role in creating a safe educational environment. In emotionally tense environments, conflicts may arise between participants in the educational process, requiring effective regulation mechanisms. Studies confirm that training students and educators in effective communication skills helps reduce the level of conflict in educational institutions [14]. Conflicts in educational settings are inevitable due to diverse opinions, cultural differences, and individual characteristics of students. However, proper conflict resolution strategies can significantly enhance the quality of interaction between students and educators [15].

Mediation is an effective technology for the constructive resolution of conflicts, involving a neutral third party to facilitate understanding between the conflicting sides. Research shows that the use of mediation in educational institutions significantly reduces levels of aggression, improves social interaction, and fosters a culture of peaceful cooperation [16]. The application of mediation in education enables: the development of constructive conflict-resolution skills among students; increased levels of trust and mutual understanding among participants in the educational process; reduction of stress and emotional tension within the educational environment; and the promotion of a culture of dialogue and non-violent communication. Studies show that students who undergo specialized training in communication and conflict management demonstrate higher levels of self-regulation and more effective strategies for resolving conflicts [17, 18]. Such programs include: role-playing and conflict situation simulations, where students learn to analyze problematic scenarios, find compromises, and practice resolution techniques in a safe setting, contributing to the development of active listening and empathy [19]; training in non-violent communication methods that help express feelings and needs without aggression, reducing conflict levels and improving mutual understanding [15, 20]; mediation

programs that foster a culture of dialogue and peaceful dispute resolution, particularly through "peer-to-peer" initiatives; and emotional intelligence development programs that help individuals better understand their own experiences and manage impulsive reactions [21]. The implementation of these programs not only reduces conflict levels but also improves the overall atmosphere, academic performance, and contributes to the development of socially responsible individuals.

Studies show that educators with mediation and effective communication skills are more capable of fostering a healthy emotional climate [22]. Key strategies teachers can employ include creating an open and trusting atmosphere, using non-violent communication, and conducting communication training for students. The main benefits of mediation include transforming many conflict situations, developing responsibility and social competence, and strengthening trust among educational stakeholders. Students who participate in mediation programs develop better skills in constructive conflict resolution and exhibit lower levels of aggression and anxiety [23].

Another important area of focus is *raising students' awareness of mental health*. Research shows that targeted awareness campaigns and educational programs can significantly reduce the stigma surrounding mental disorders among students and increase their willingness to seek help [24]. Conducting awareness campaigns, webinars, and training sessions promotes a better understanding of stress coping mechanisms and adaptation to change — particularly relevant in conditions of high academic workload [25]. Including self-regulation and emotional literacy courses in academic programs is also an effective tool for supporting students' psychological resilience, with studies confirming positive changes in emotional well-being following such modules [26].

CONCLUSIONS





The results of the study confirmed that the psycho-emotional state of participants in the educational process in Ukraine has significantly deteriorated under wartime conditions. Most respondents reported elevated levels of stress, anxiety, emotional awareness, and uncertainty about the future. Educational technologies play a crucial role in overcoming psycho-emotional barriers by contributing to the creation of a safe learning environment and supporting the psychological well-being of students. The use of adaptive educational technologies — including trauma-informed approaches, coaching, mentoring, mediation, and others — helps to minimize the negative effects of stressors.

Awareness-raising campaigns focused on mental health can help reduce stigma and increase willingness to seek help. Therefore, in conditions of uncertainty, the educational process must focus not only on academic outcomes but also on preserving the psycho-emotional well-being of both students and educators.

There is a need to develop preventive methodologies and corresponding models for overcoming trauma and psycho-emotional barriers among all participants in the educational process, taking into account the multi-faceted nature of the core objectives of higher education.

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The research was carried out within the framework of the scientific topic of the Department of Education and Psychological and Pedagogical Sciences of Borys Grinchenko Kyiv Metropolitan University «Innovation in the Development of Higher Pedagogical Education in the Interdisciplinary Dimension» (state registration № 0121U000123; term: 2021–2026).

CONFLICT OF INTEREST




























The Authors declare no conflict of interest

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 – Work concept and design,  – Data collection and analysis,  – Responsibility for statistical analysis,  – Writing the article,  – Critical review,  – Final approval of the article

RECEIVED: 12.02.2025

ACCEPTED: 02.06.2025

