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Theoretical and Methodological Aspects of Psychological and Pedagogical Mechanisms of Developing Resilience in Higher Education Students in Conditions of Armed Conflict in Ukraine

Abstract: The article substantiates the relevance of the study in view of the increasing impact of crisis factors on the mental state of young people and the need to ensure their psychological stability as a resource for professional development and restoration of society. The purpose of the work is a theoretical and experimental study of the level of resilience of students, as well as the definition of effective psychological and pedagogical approaches to its development. The article analyzes scientific approaches to understanding the phenomenon of resilience, defines it as a dynamic psychological resource that provides adaptation, restoration and personal growth in conditions of stress. To study the level of resilience and its relationship with psychotraumatic experience, the Connor–Davidson Resilience Scale, standardized methods for assessing the level of anxiety, depression, and symptoms of posttraumatic stress disorder, and the author's questionnaire for identifying the subjective experience of experiencing psychotraumatic events and assessing one's own resources for overcoming stress were used. The results showed an insufficient level of resilience in students, which led to the development and implementation of a psychological and pedagogical program for its development. The implementation of the program contributed to a statistically significant increase in the level of resilience, a decrease in anxiety, and an improvement in the psychological well-being of students in the experimental group. It was established that the effectiveness of organizational and methodological support for the development of resilience in students is a complex activity that should be carried out at the stages and levels of the educational process of a higher education institution. It is recommended to use the possibilities of the variable component of educational programs of the educational institution, optimize the developmental and educational opportunities of academic disciplines of the social and humanitarian cycle in terms of developing the resilience of students; form the readiness of teachers for relevant activities, create a safe environment, pedagogical monitoring of the effectiveness of the process of developing resilience and forecast its promising directions. It is emphasized that the development of resilience is an important condition for the formation of psychologically stable, adaptive and competitive specialists in modern conditions.

Keywords: traumatic events, resilience, psychotraumatic experience, post-traumatic growth.

Introduction

The problem of the psychological resilience of the individual under conditions of stressful and traumatic events is one of the central issues in the contemporary humanities and social sciences. Military conflicts, social crises, disasters and other extreme situations have a significant impact on an individual's mental well-being. Under such conditions, particular importance is attached to the need to study the conditions for maintaining the stability of mental reactions and human behaviour (*Ungar et al., 2008*), as well as the mechanisms involved in the development of personal formations that enable individuals to actively resist the effects of negative lived experience and remain psychologically stable, or resilient (*Yi et al., 2020*).

Given the high probability of traumatic impact on the individual, as well as the known toxic consequences of trauma for health and everyday functioning, the study of the theoretical and methodological foundations of the psychological mechanisms of resilience formation in people who have experienced traumatic events is a critically important area of research. Of particular significance is the need to investigate the development of resilience among students who are currently receiving education under the conditions of the armed conflict between Russia and Ukraine. The study of this issue is a critically necessary factor in ensuring students' academic success and psychosocial well-being, especially under conditions of prolonged instability.

The relevance of the problem is determined by the fact that young people constitute the basis of society's future professional potential, on which the recovery and development of the country in the post-crisis period will depend. At the same time, a high level of resilience acts as an important resource that enables individuals not only to overcome the consequences of trauma, but also to maintain an active life position, professional motivation and readiness for responsible activity.

The object of the present study is the process of developing resilience among higher education students who have experienced psychotraumatic events under conditions of martial law and forced distance learning.

The aim of the study is to provide a theoretical analysis and experimental investigation of the level of resilience development among students who have experienced traumatic events, as well as to substantiate and identify effective approaches to developing students' resilience as a resource for their psychological stability and academic success.

To achieve this aim, the following objectives have been identified: to analyse scholarly approaches to understanding the phenomenon of resilience; to outline the specific features of students' psychotraumatic experience in the context of military action; to determine the factors influencing the formation of resilience under conditions of distance learning; to investigate the level of resilience formation among students in experimental and control groups; and to substantiate effective ways of developing resilience.

The theoretical framework of the study is based on the works of researchers devoted to the problems of resilience, psychotrauma, stress resistance, post-traumatic growth, personality adaptation under crisis conditions and related issues.

The results of the study are addressed to scholars, lecturers at higher education institutions, practising psychologists, and all specialists working with young people under conditions of increased psycho-emotional stress and wartime challenges.

Methods

The methodological basis of the study is a comprehensive approach that combines theoretical, empirical and statistical methods aimed at exploring the psychological and pedagogical mechanisms of resilience development among students.

At the theoretical level, analysis, synthesis, comparison and generalisation of scholarly sources on the issues of resilience, psychotrauma and post-traumatic growth were applied. This made it possible to define the essence of the concept of “resilience” as an individual’s capacity for adaptation, recovery and development after stressful events, as well as to conceptualise it as a dynamic process and psychological resource (*Potapov, 2023; Muzychko, 2024*).

A theoretical and methodological analysis of the psychological and pedagogical mechanisms of resilience development was also conducted, with particular attention to cognitive-behavioural, emotional-regulatory and social-support factors (*Rozova & Khanetska, 2025*).

To assess the level of resilience and its relationship with psychotraumatic experience, the Connor–Davidson Resilience Scale was used (*Connor & Davidson, 2003*). This instrument makes it possible to evaluate an individual’s capacity for adaptation under conditions of stress and recovery after traumatic events (*Kolishchak & Filchuk, 2025*). In addition, standardised methods were applied to assess levels of anxiety, depression and symptoms of post-traumatic stress disorder, including the LEC-5, IES-R, PHQ-9 and GAD-7. These instruments enabled a comprehensive investigation of the consequences of psychotraumatic events (*Sodolevska, 2025*).

An author-designed questionnaire was also developed to identify students’ subjective experience of psychotraumatic events and to assess their perceived resources for coping with stress. The questionnaire was used to clarify individual features of students’ responses to stressful situations and to analyse behavioural strategies for overcoming difficulties. Its development was informed by theoretical and empirical approaches to resilience, coping, adaptation and the consequences of traumatic experience (*Bonanno, 2004; Connor & Davidson, 2003; Folkman & Lazarus, 1980; Luthar et al., 2000; Ungar, 2011*).

The analysis of the obtained results was performed using descriptive statistics, including mean values and standard deviations; correlation analysis, including Pearson’s and Spearman’s correlation coefficients; Student’s t-test for comparing samples; and regression analysis to determine the influence of resilience on psychological state (*Petiak & Melnychuk, 2025*).

These methods made it possible to identify statistically significant relationships between the level of resilience and indicators of the psycho-emotional state of students (*Sodolevska, 2025*).

Literature Review

Contemporary studies on the impact of traumatic events on individuals show that, worldwide, more than 70% of respondents have experienced at least one traumatic event during their lifetime, while almost one-third of survey participants reported exposure to four or more traumatic events (*Benjet et al., 2016*).

An analysis of the scholarly literature indicates that the neurotoxic effects of such experiences have far-reaching consequences. These effects range from impaired neurocompetence (*Teicher et al., 2016*) and psychopathology, including post-traumatic stress disorder (PTSD) and depression (*McLaughlin et al., 2013*), to adverse physical outcomes operating at both molecular (*Esteves et al., 2020*) and systemic levels (*Southwick et al., 2014*).

In contemporary research, there has been a marked increase in scholarly interest in the resilience of students, particularly in the context of experiencing psychotraumatic events and functioning under conditions of martial law. This is determined by the need to identify effective mechanisms for supporting the psychological stability and adaptive potential of student youth.

At the same time, despite the considerable number of studies devoted to this issue, a number of aspects remain insufficiently explored. These include, in particular, the specific features of resilience formation under conditions of prolonged distance learning, the influence of a constant threat to safety on educational motivation, and the effectiveness of psychological and pedagogical interventions in crisis situations.

The psychological mechanisms of resilience formation in individuals who have experienced trauma possess specific features, without the identification and consideration of which it is impossible to determine the effectiveness of particular psychological and pedagogical influences, to plan effective strategies, or to evaluate their outcomes. One of the key concepts in this regard is “traumatic experience”, which in psychological science and clinical practice is understood as the experience of exposure to events or circumstances perceived by an individual as extremely threatening to their physical safety, life or psychological integrity, and as exceeding their current adaptive and regulatory resources. As a result of such experience, persistent changes may occur in emotional functioning, cognitive processes, behaviour and interpersonal interaction (*Shapar, 2007*).

At the same time, the contemporary scholarly approach emphasises the dual nature of this phenomenon. On the one hand, it includes an objective dimension, namely the characteristics of the event as potentially dangerous, such as actual or threatened death, serious injury or violence. On the other hand, it includes a subjective dimension, namely the individual’s specific appraisal of the event and their capacity to adapt to it (*Esteves et al., 2020*).

With regard to the review of contemporary scholarly literature on the development of resilience among students who have experienced psychotraumatic events, it is appropriate to structure the analysis according to several interrelated areas: theoretical approaches to understanding resilience, the impact of war-related psychotrauma on personality, and psychological and pedagogical mechanisms of resilience development within the educational environment.

The first area is represented by studies that reveal the essence of resilience as a multidimensional and dynamic characteristic of the individual. In contemporary scholarship, resilience is viewed as the capacity for adaptation under conditions of stress and crisis, formed through the interaction of individual, social and environmental factors (*Masten, 2014; Ungar, 2012*). These studies emphasise the multilevel nature of resilience, which encompasses personal, interpersonal and institutional levels (*Windle, 2011*). Particular attention is paid to the phenomenon of educational resilience, understood as the ability of students to achieve academic outcomes despite adverse circumstances (*Martin & Marsh, 2006*).

The second area covers studies of the impact of psychotraumatic events, in particular war, on the mental state and development of the individual. Researchers have shown that prolonged

exposure to military conflict increases the risk of developing post-traumatic stress disorder, anxiety and depressive states, and also has a negative effect on cognitive processes and learning capacity (*Betancourt et al., 2013; Charlson et al., 2019*). At the same time, scholars emphasise that social support, access to psychological assistance and a stable educational environment contribute to overcoming the consequences of trauma and to the formation of resilience (*Tol et al., 2013*).

The third area of research is connected with the study of psychological and pedagogical mechanisms for developing resilience within the educational process. Contemporary studies stress the role of educational institutions as environments that can function as resources for support, stabilisation and personal development under crisis conditions (*Theron et al., 2015*). Important mechanisms include the development of self-regulation skills, the formation of adaptive coping strategies, the creation of a safe psychological climate and the implementation of specialised psychosocial support programmes (*Joyce et al., 2018*). In the context of distance learning, the problem of combining academic requirements with psycho-emotional challenges becomes particularly relevant, requiring the adaptation of pedagogical approaches to conditions of uncertainty.

A separate group of studies is devoted to the factors of resilience among young people who have experienced traumatic events. Key factors include the development of hardiness, the presence of supportive social relationships, involvement in the educational process and the formation of meaning-in-life orientations (*Gilligan, 2000; Lutbar et al., 2000*). In this context, the need for a comprehensive approach to supporting students is emphasised.

Thus, the analysis of contemporary sources indicates growing scholarly interest in the problem of resilience under conditions of psychotraumatic events. At the same time, it reveals the insufficient development of issues related to holistic psychological and pedagogical mechanisms for fostering resilience among higher education students under conditions of distance learning and wartime challenges.

Results

For students enrolled at universities located in eastern Ukraine, particularly in Kharkiv, resilience functions not only as an individual psychological characteristic, but also as a complex capacity for adaptation, self-regulation and the maintenance of motivation to learn despite extreme circumstances.

In this context, the study of psychological and pedagogical mechanisms for developing resilience among students who have experienced psychotraumatic events, as well as the development and implementation of effective psychological and pedagogical technologies for fostering resilience in the educational process of higher education institutions through educational practices, psychological and pedagogical support, and the creation of a safe digital educational environment, becomes a necessary condition not only for preserving the student body, but also for restoring students' personal potential and capacity for professional development.

Psychotraumatic experience, particularly under conditions of military action, may significantly affect an individual's capacity for learning, professional formation and social integration. It has been established that psychological trauma is an individual's response to events perceived as threatening to a person's physical or psychological integrity. Such events may lead to the development of mental disorders, including post-traumatic stress disorder, anxiety disorders and

depressive states (*American Psychiatric Association, 2013*). However, responses to trauma are not identical for all individuals. Some people demonstrate the capacity to preserve stability and gradually restore psychological equilibrium. This capacity forms the basis of the phenomenon of resilience.

Further theoretical and methodological inquiry made it possible to analyse and substantiate the need for the formation and development of the phenomenon of post-traumatic growth.

In contemporary psychological science, the concept of post-traumatic growth is understood as positive qualitative changes in personality that arise as a result of experiencing severe life crises and psychotraumatic events. Unlike resilience, which implies the preservation of relative functional stability, post-traumatic growth reflects transformational processes that lead to the rethinking of life values, the strengthening of internal resources and the formation of new meanings (*Tedeschi & Calhoun, 2004*).

According to the classical definition, post-traumatic growth is manifested in an increased appreciation of life, improved interpersonal relationships, awareness of one's own strength, the discovery of new possibilities and spiritual development (*Tedeschi & Calhoun, 1996*). Researchers emphasise that this phenomenon is not an automatic consequence of trauma, but is formed through active cognitive processing of the lived experience, in particular through reflection, the search for meaning and the integration of traumatic events into the individual's life narrative (*Calhoun & Tedeschi, 2006*).

Contemporary studies also emphasise the role of the social context in the formation of post-traumatic growth. Support from significant others, a safe environment and access to psychological assistance contribute to a deeper understanding of traumatic experience and to its transformation into a developmental resource (*Zoellner & Maercker, 2006*).

In the educational environment, this is particularly important for students who have experienced wartime events, since the creation of conditions for reflection, support and self-expression may contribute not only to overcoming the negative consequences of trauma, but also to personal growth.

Thus, post-traumatic growth is an important theoretical and practical construct that makes it possible to consider the consequences of psychotraumatic events not only in terms of loss and maladaptation, but also as a potential for personal development, which is of particular significance under contemporary social challenges.

In addition, research demonstrates that the social environment plays a key role in the formation of resilience. The presence of supportive social relationships contributes to reducing stress levels and increasing an individual's psychological safety. Stable interpersonal relationships also enhance the individual's capacity to recover after traumatic events.

The educational environment plays a particularly important role as a space of safety, support and development, in which the lecturer acts as a facilitator of the process of resilience development.

Thus, the theoretical and methodological analysis of the concept of "resilience" has demonstrated the importance of this personal formation as a complex multicomponent system in which cognitive, emotional, meaning-related and social processes mutually complement one another and ensure an individual's capacity not only to adapt to the consequences of crisis, but also to use crisis experience for personal development. Therefore, there is a need to develop and implement effective psychological and pedagogical mechanisms for fostering resilience among

students who have experienced psychotraumatic events within the educational process of higher education institutions.

At the initial stage, within the activities of the psychological service of the State Biotechnological University, 50 students aged between 18 and 23 took part in a study of the level of resilience development.

The participants were divided into two groups: an experimental group (EG), consisting of 25 participants, and a control group (CG), also consisting of 25 participants. The groups were equivalent in terms of age, gender and initial indicators.

A number of assessments were conducted in each group, namely:

- determining the level of resilience using a resilience scale, which made it possible to assess the individual's capacity for adaptation under conditions of stress and recovery after traumatic events (*Kolishchak & Filchuk, 2025*);
- assessing levels of anxiety, depression and symptoms of post-traumatic stress disorder using the LEC-5, IES-R, PHQ-9 and GAD-7 instruments, which enabled a comprehensive investigation of the consequences of psychotraumatic events (*Sodolevska, 2026*);
- identifying, through an author-designed questionnaire, the level of subjective experience of psychotraumatic events and assessing students' own resources for coping with stress. The questionnaire was used to clarify individual features of students' responses to stressful situations and to analyse behavioural strategies for overcoming difficulties (*Bonanno, 2004; Connor & Davidson, 2003; Folkman & Lazarus, 1980; Luthar et al., 2000; Ungar, 2011*).

The obtained results confirmed that the level of resilience development in both the control and experimental groups was insufficient, indicating the need to develop a programme for fostering resilience among students who had experienced traumatic events. Therefore, as a pilot project, a Programme for the Development of Students' Resilience was designed and implemented within the activities of a permanent psychological and pedagogical seminar organised by the university's psychological service. The programme consisted of two blocks: a theoretical block and a practical block, which included sessions with elements of training. Meetings were held once a week in a distance format. The control group did not participate in the programme. After completion of the programme, repeated diagnostics were conducted and the results were compared.

As a result of the conducted experiment, statistically significant changes were identified in the level of resilience among students in the experimental group.

The comparative analysis showed that, after the implementation of the psychological and pedagogical programme, the mean resilience score in the experimental group increased from $M = 52.3$ to $M = 68.3$ ($p < .01$).

No significant changes were found in the control group ($M = 53.0 \rightarrow 54.2$; $p > .05$).

A decrease in the level of anxiety was also recorded among students in the experimental group ($\Delta = -5.4$), whereas changes in the control group were minimal ($\Delta = -0.9$). Indicators of psychological well-being in the experimental group increased by 21.6 points, indicating positive dynamics in adaptive processes. Correlation analysis revealed an inverse relationship between resilience and anxiety ($r < 0$), as well as a direct relationship between resilience and psychological well-being ($r > 0$).

The obtained data indicated an increase in the level of resilience in the experimental group, a decrease in anxiety and an improvement in psychological well-being. In the control group, the

changes were not statistically significant. This confirmed the need for activities aimed at developing and implementing psychological and pedagogical technology for fostering resilience among higher education students within the educational process, as well as for providing organisational and methodological support for this process.

The development of resilience is an important task of contemporary education not only in the context of overcoming the consequences of psychotraumatic events, but also as a universal condition for the harmonious personal and professional formation of students.

Under conditions of rapid social change, growing uncertainty and increased requirements for the adaptability of specialists, resilience functions as a key competence that ensures the capacity for self-regulation, effective stress management, the preservation of learning motivation and the achievement of long-term goals. Its development contributes to the formation of flexible thinking, responsibility, the capacity for lifelong learning and constructive interaction with others.

Thus, the integration of psychological and pedagogical mechanisms for developing resilience into the educational process is strategically important not only for supporting vulnerable categories of students, but also for training competitive, psychologically stable and socially active specialists capable of acting effectively under the constant challenges of the modern world.

In the course of the study, it was established that the effectiveness of organisational and methodological support for the development of students' resilience depends on comprehensive activity carried out at different stages and levels of the educational process of a higher education institution. This includes the use of the opportunities provided by the variable component of educational programmes; the optimisation of the developmental and educational potential of disciplines within the social and humanitarian cycle for fostering students' resilience; the formation of lecturers' readiness and preparedness for such activity; the creation of a safe environment; pedagogical monitoring of the effectiveness of the resilience development process; and forecasting its prospective directions.

Thus, investing in the development of the psychological stability of student youth is a strategically important task, since it is directly related to the training of competitive, adaptive and socially responsible specialists.

Discussion

The obtained data are consistent with contemporary theoretical approaches that consider resilience as a dynamic system of an individual's adaptive resources.

The increase in the level of resilience in the experimental group indicates the effectiveness and necessity of the relevant psychological and pedagogical activity. The identified patterns demonstrate that psychotraumatic experience not only reduces adaptability, but may also activate processes of post-traumatic growth, provided that appropriate psychological support is available.

The main research problem remains the insufficient development of long-term psychological and pedagogical technologies for fostering resilience within the educational environment of higher education institutions.

A limitation of the present study is also the relatively small sample size and the short duration of the intervention, which do not allow the stability of the observed effects to be fully assessed in the long term.

Further research on this problem may focus on studying the mechanisms of resilience development in different social and cultural contexts, as well as on a more in-depth examination of individual differences in the manifestation of these phenomena, the mechanisms of their formation, and the factors that facilitate or hinder personal adaptation.

It is also relevant to investigate the role of cognitive strategies, emotional regulation, social and spiritual resources in different age and professional groups, as well as to study the long-term effects of post-traumatic growth on quality of life and psychological health.

In addition, the development of psychological support programmes aimed at strengthening personal resilience and stimulating positive changes after crisis events is of considerable interest.

Particular importance should be attached to the integration of resilience development programmes into the higher education system as a component of psychological and pedagogical support for students within the activities of psychological services at educational institutions, as well as within the variable component of educational and professional programmes in different specialities.

A promising direction is also the study of digital interventions, including online training courses, mobile applications and related tools, aimed at increasing students' psychological resilience. Further research should also test the effectiveness of psychological and pedagogical mechanisms for developing resilience, including the implementation of psychological interventions such as cognitive-behavioural techniques, mindfulness practices, elements of positive psychotherapy, and group psychological support training.

Conclusion

Thus, the conducted study confirmed the relevance of the problem of developing resilience among students who have experienced psychotraumatic events under the conditions of contemporary social and wartime challenges. Resilience is considered as a dynamic multidimensional construct that includes the capacity for adaptation, recovery after stress, emotional self-regulation, cognitive reappraisal of experience, and the use of personal and social resources.

It was established that the initial level of resilience among students was insufficient, which substantiates the need to introduce targeted psychological and pedagogical programmes. The implemented resilience development programme under conditions of distance learning demonstrated its effectiveness and ensured positive dynamics in the indicators of the experimental group.

After the implementation of the programme, a statistically significant increase in the level of resilience was recorded ($p < .01$), along with a decrease in anxiety levels and an increase in indicators of psychological well-being. No significant changes were identified in the control group. An inverse relationship was established between resilience and anxiety, as well as a direct relationship between resilience and psychological well-being.

The obtained results indicate the effectiveness of a comprehensive psychological and pedagogical approach that combines educational, training-based and supportive components, and also provides for the creation of a safe educational environment and the preparation of academic staff to work with students who have experienced psychotrauma.

The prospects for further research are associated with improving the organisational and methodological support for resilience development and expanding psychological and pedagogical support programmes in higher education institutions.

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Conflict of Interest

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