



Peculiarities of students' academic activity in extreme conditions: Findings of a pilot study

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Abstract. This article presented the findings of a study on students' academic activity in extreme conditions caused by the prolonged war in Ukraine, which has intensified exposure to stress factors. The study aimed to highlight the results of a pilot investigation into the psychological characteristics of students' academic activity in such conditions to develop recommendations for optimising the learning process. Data collection was conducted using a specially designed questionnaire, with questions focusing on the nature of students' academic engagement and their perceptions of their own academic performance. The findings indicated that students were capable of maintaining a high rate of learning, demonstrating diligence in completing tasks, sustaining intrinsic motivation for study, and effectively regulating their actions in stress-inducing conditions. Additionally, challenges encountered in extreme learning conditions were examined, with the most frequently reported difficulties including a sense of tension and burden in the learning process, superficial knowledge acquisition, rapid forgetting of learned material, slow processing of academic information, and a lack of systematic approach in academic activities. It has been established that the assessment of students' academic performance largely depended on the characteristics of their academic activity. High and average grades were mostly associated with positive or mixed academic characteristics, whereas low grades were more frequently accompanied by negative ones. An analysis of the obtained data, along with similar studies, has enabled the identification of potential factors influencing students' academic performance under such conditions. The findings of this study may be utilised to develop effective emergency learning plans, enhance the flexibility of the educational process, implement measures to support students' psychological well-being, and establish a systematic monitoring framework for their welfare during wartime and post-war conditions, as well as in response to other extreme circumstances

Keywords: stressful wartime conditions; knowledge acquisition; nature of academic activity; academic performance; stress

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Introduction

The choice of topic for this research was determined by the geopolitical context in Ukraine, caused by Russian aggression. This situation has created new challenges for the functioning of the education system, including for students, who are under increased stress and threat to life. Therefore, it is crucial to understand the role of not only economic but also psychological resources of society in addressing such challenges. This sets the framework for an in-depth study of the psychological aspects of students' academic activity under martial law. The problem of students' academic activity in extreme conditions has a broader context, as global conflicts, pandemics, natural disasters, and other emergencies constantly create conditions that can affect learning. In such circumstances, there is a growing need for research aimed at analysing how young people adapt to new realities, maintain motivation to learn and sustain the effectiveness of their academic effectiveness, and what difficulties arise along the way.

The significance of the situation, its unpredictability, and uncontrollability, coupled with the threat to students' personal safety, create unique circumstances for studying their psychological reactions, coping strategies, and mechanisms. In the context of war, which threatens both physical and psychological safety, analysing the characteristics and outcomes of learning can reveal the specific impact of armed conflict on students' education and overall psychological resilience. Students' academic activity in extreme conditions is a complex and unique process. Its study requires considering the structure of the activity phenomenon itself. This perspective enables the identification of the most critical aspects to be addressed when developing support programmes for students in challenging circumstances, ensuring the continuity of their learning process and psychological well-being. To date, there is no unified theory or comprehensive research and monographs that would fully describe this type of activity in extreme conditions, including wartime. However, individual studies

shed light on aspects that help to better understand this phenomenon.

A review should begin with studies dedicated to exploring the psychological impact of the COVID-19 pandemic. It created conditions that could be characterised as extreme for many people worldwide, including affecting the nature of academic activity. As S. Wilks *et al.* (2023) and K. Varyvoda (2022) note, the pandemic's negative impact on students' psychological well-being and academic performance was largely due to the sudden shift to a virtual learning environment. Additionally, it was found that students' awareness of COVID-19 generally mitigated the negative impact on their performance and well-being. Further evidence of the pandemic's negative effects on students' mental health is provided by other studies, including those by Italian researchers L. Villani *et al.* (2021). As Italy was the first European country to impose a lockdown due to the pandemic, its students were among the first to adapt to new learning conditions. The researchers found that a significant portion of students exhibited signs of high anxiety and depression. The risk of developing anxiety was associated with being female, fears about the pandemic and its consequences, the inability to participate in university life, and the inability to see a partner. Regarding academic performance, authors K. Mueller *et al.* (2024) found that the average grades of the student sample studied remained unchanged during the COVID-19 pandemic. This is supported by other researchers. For example, E. Lagmay & M. Rodrigo (2022) note that under the influence of extreme conditions caused by the COVID-19 pandemic and weather conditions, the overall activity of students decreased, but this decrease only applied to those activities that did not affect their final grades.

The study of the impact of the COVID-19 pandemic on the characteristics of students' academic activity is part of a broader discourse that considers the impact of extreme conditions and the stress caused by them or stress as such in the context of academic activity and psychological

well-being. Based on a comprehensive review of research over the past 10 years, authors A. Córdova *et al.* (2023) conclude that stress and negative emotional states generally have a negative impact on the learning process. Overall, test anxiety is most often in the spotlight. As shown by the results obtained by J. Cassady & W. Finch (2020), the level of test anxiety is highest in the following cases: when students adhered to a pronounced external or internal goal orientation; when academic tasks had an uncertain outcome; when students used passive learning strategies; when learning strategies were more personally involved.

However, beyond the examination situation, other factors influencing students' psychological well-being are also considered. For instance, M. Mofatteh (2021) conducted a comprehensive literature review to identify risk factors associated with stress, anxiety, and depression among students. The study revealed that the predominant factors in most research were psychological, academic, biological, social, financial, and lifestyle. As evident from this list, factors such as the geopolitical context and war were not the focus of most researchers, at least until recently. Regarding the impact on psychological well-being, researchers G. Chen *et al.* (2024) examined the relationship between life events, coping styles, and subclinical depression among medical students. The results showed that negative life events positively correlated with subclinical depression and negative coping styles and had an inverse correlation with positive coping styles.

In general, activity in extreme conditions has long been the focus of significant research to study the psychological characteristics of certain professions and issues related to professional suitability. This includes professions such as military personnel, firefighters, medical and emergency services, astronauts, and police officers. A review of selected studies highlights key findings in this field. As authors M. Turliuc & A. Balcan (2023) note, the results of a two-stage study conducted over four months on gendarmes showed that perceived operational stress (OpS) and organisational

stress (OrgS) in peacetime have a significant negative impact on psychological well-being (PWB) four months after experiencing stressful situations. Perceived social support plays a significant mediating role in the relationships between OrgS and PWB, as well as between OpS and PWB at both stages of the study. Among coping mechanisms, only self-control (and only at the second stage of the study) acts as a significant mediator in the relationship between OrgS and PWB. These results highlight the increased impact of ordinary stressors, which can occur both at home and at work, on individuals with military experience, as well as the importance of providing effective psychological support methods.

Another study, conducted by T. Craddock & G. Telesco (2021), found that police officers who regularly encounter critical incidents exhibit negative changes in their worldview and perception of others, especially after prolonged exposure to traumatic situations. A correlation was found between years of service, frequency of such incidents, and symptoms of post-traumatic stress. The stigma associated with seeking psychological help, perpetuated by police culture, exacerbates these problems, impacting physical and mental well-being. Changes in lifestyle and even circadian rhythms are common occurrences during life and study in extreme conditions, caused by various factors: from mood swings and nervous system exhaustion leading to difficulty falling asleep, to air raid sirens and nighttime combat. The consequences of such impacts, including on cognitive function, can be traced by studying civilian pilots. Research by S. Yang *et al.* (2024) showed that over 70% of pilots' work schedules disrupt circadian rhythms, and 47.44% of pilots work in highdemand modes. The worst results in cognitive tests were observed during early shifts. Sleep problems, especially before morning shifts, are also common. Given that students' learning typically begins in the morning, these facts require special attention.

When studying the impact of extreme conditions on academic activities, it is impossible

to ignore the phenomenon of the bidirectional psychosomatic connection, as stress and other negative states can not only directly cause changes in cognitive functions but also induce anatomical and physiological changes in the brain, which also affects academic activities characteristics. Authors A. Fassett-Carman *et al.* (2022) also highlight this issue in their study. They found that the perception of a lack of control over dependent (self-induced) stressors is associated with changes in brain structure, specifically with a larger volume of grey matter in the amygdala in girls and a greater thickness of the medial prefrontal cortex in boys. The goal of this article was to establish the characteristics of students' academic activities in extreme conditions and their attitudes towards the results of their own academic activities.

Materials and Methods

The study was conducted in 2023-2024 among first- to fourth-year students at the National University of Life and Environmental Sciences of Ukraine and Irpin Professional College (Kyiv Region, Ukraine). The total number of respondents was 238. All participants were selected using a random sampling method. A survey using a custom-designed Google Form questionnaire was used to conduct the study. The questionnaire consisted of two main sections of questions:

➤ Section 1: Assessment of academic performance. In this section, respondents rated their academic performance on a scale from "high" to "low", which helped determine how students perceive their ability to grasp learning material and apply knowledge under stress.

➤ Section 2: Assessment of academic activity characteristics. This section contained questions that assessed various aspects of students' academic activities, such as the speed of learning material, quality of knowledge, independence, motivation to learn, and the ability to organise cognitively. To analyse these aspects, the parameters identified by G. Clauss (1987) were used, allowing for a deeper understanding of the

psychological aspects of the learning process in extreme situations.

The key indicators of the nature of academic activity included:

1) speed of processing academic information and associated measures of task intensity, strength, and durability of acquired knowledge;

2) thoroughness and associated depth of acquired knowledge;

3) motivation and associated desire, initiative, and activity level;

4) action regulation and associated diligence, independence, and planning;

5) cognitive organisation and associated awareness of learning.

As indicators of attitude towards academic performance, the assessment of the level of one's own academic performance and the comparison of academic success in the current year with the previous academic year were considered.

The study was conducted following the American Psychological Association's principles for human research (APA, 2003). All participants received clear information about the purpose and objectives of the study, as well as the ability to withdraw from participation at any time without giving a reason. Respondents provided consent to participate in the study, confirming their agreement to data processing when submitting the questionnaire. The confidentiality of the collected data was also ensured: respondent data was collected and used only in an anonymised form, and the research results did not contain any personal information.

Quantitative methods were used to analyse the research results, including descriptive statistics and correlation analysis to identify correlations between academic activity and academic performance. Additionally, qualitative analysis and interpretation of the data were carried out, allowing for assumptions to be made about the identified features of students' academic activities.

Results

The research revealed a wide range of perceptions among participants regarding the nature

and outcomes of their own learning. Notably, most participants reported positive responses regarding the speed and related characteristics of their academic activities. However, there was also

a significant percentage of participants who reported slow information processing, tension during learning, and rapid forgetting of the material studied (Fig. 1).

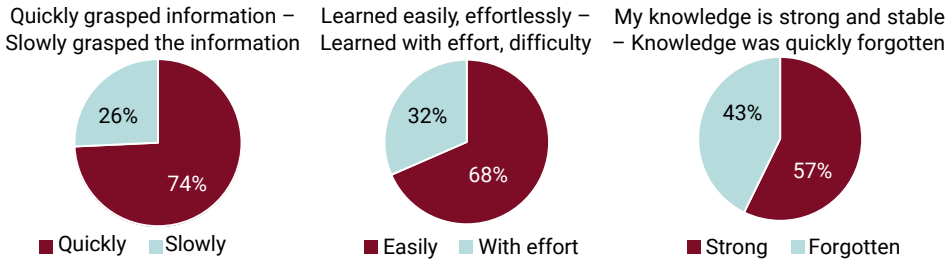


Figure 1. Results of the study on the speed of academic activities among participants

Source: author's development

The indicator of the durability of acquired knowledge is particularly noteworthy, as a significant proportion of participants who reported ease and satisfactory speed of information acquisition also indicated both rapid forgetting of information and, conversely, the strength of knowledge over time. Therefore, these indicators require a more detailed analysis to clarify the

exact relationship, especially when considering the potential onset of stress due to extreme conditions. Almost all participants tried to be conscientious in their studies, but slightly less than half of the participants assessed their knowledge as deep. A significant proportion of participants – more than half – noted the superficiality of the acquired knowledge (Fig. 2).

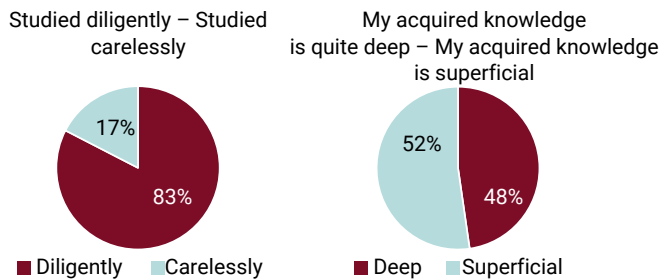


Figure 2. Results of the study on the thoroughness of academic activities among participants

Source: author's development

Despite the desire to study diligently, many students faced difficulties in achieving a deep level of knowledge. The noted superficiality may be a result of insufficient integration of acquired knowledge or a lack of practical application of the material studied. According to researchers K. Alshamrani *et al.* (2021), this underscores the importance of not only theoretical mastery but

also a deep understanding of acquired knowledge and skills, which will help students better learn and apply knowledge in various contexts.

These indicators, like the previous ones, showed a significant difference between the effort exerted, as measured by conscientiousness, and the quality of the knowledge acquired. A significant proportion of respondents indicated that they

studied diligently, yet their knowledge proved to be superficial. This indicates the complexity of the relationship between these indicators, or their mediation by other factors that may reduce the quality of knowledge, even if it was acquired diligently. In particular, the negative impact of stress on cognitive processes and the brain was described in studies by L. Schwabe *et al.* (2022), K. Caudwell *et al.* (2023), and J. Novotný *et al.* (2024).

The neurobiological mechanism by which extreme conditions and stress impact long-term memory and learning ability involves a complex hormonal interaction (Defante *et al.*, 2024). Acute

exposure to a stressor results in the release of large amounts of norepinephrine and cortisol, a glucocorticoid. The interaction between these two agents, particularly in the central nervous system, impairs working memory function and disrupts the attentional functions of the prefrontal cortex, directing attention solely towards threatening stimuli, and thereby hindering the consolidation of information unrelated to the threat. Additionally, a small percentage of participants reported a decreased desire to learn, engaging in academic activities out of a sense of duty, and experiencing lethargy and a decline in activity (Fig. 3).

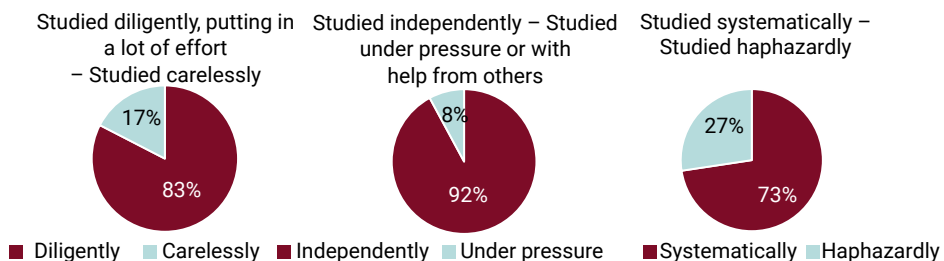


Figure 3. Results of the study on the motivation of academic activities among participants

Source: author's development

Almost all students studied independently, without additional pressure or help from others, and tried to be diligent, with the vast majority adhering to a systematic and planned approach to learning. Differences in the distribution of the indicators studied may also indicate that most respondents were driven by intrinsic motivation, as evidenced by the high percentage of those who reported independence in learning

(Komariah *et al.*, 2024). However, according to researchers R. Ryan & E. Deci (2000), this does not always imply diligence in learning and even less so indicates a systematic approach. A small proportion of respondents, however, combined independence and diligence in learning with a lack of systematicity. At the same time, about a quarter of the respondents reported low motivation to learn (Fig. 4).

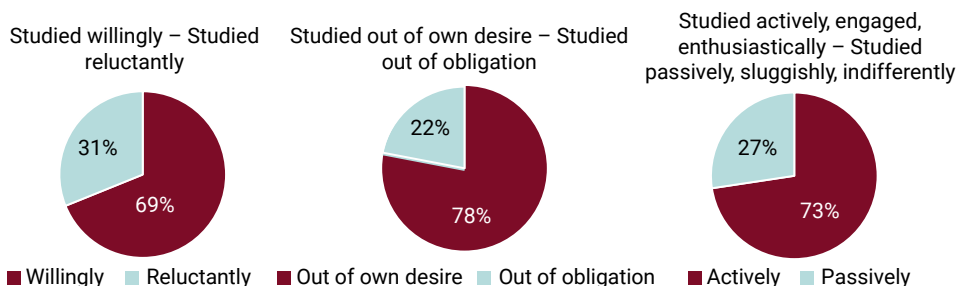


Figure 4. Results of the study on the regulation of academic activities among participants

Source: author's development

The data presented demonstrates the existence of a certain group of students who, despite their independence, did not feel a sufficient level of intrinsic interest in the learning process. According to Z. Alj & A. Bouayad (2024), such a situation can negatively impact learning outcomes, as even independence and diligence do not always compensate for a lack of motivation and systematic approach. These findings complement the previous ones, as they confirm the predominance of intrinsic motivation in learning, as most respondents indicated their independence in learning and their own desire to learn. However, a discrepancy was also noted between the number of those who indicated intrinsic motivation to learn and the desire to learn as such. The number of respondents who indicated learning out of their own desire was significantly higher than the number of those who studied willingly and actively. Therefore, the presence of intrinsic motivation in learning does not necessarily mean a desire to learn actively. The students were able to carry out their academic activities consciously. A certain proportion noted the mechanical nature of their academic activities (Fig. 5).

Studied consciously, with understanding –
Studied mechanically, without understanding;
through trial and error

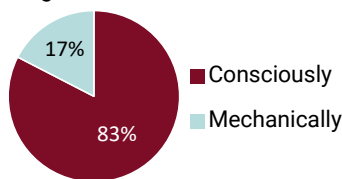


Figure 5. Results of the study on cognitive regulation in academic activities among participants

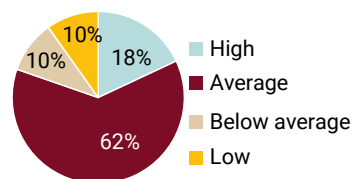
Source: author's development

From an activity-based perspective, actions performed mechanically can no longer be strictly called activities, as this implies conscious effort towards a desired goal. Therefore, mechanical actions are more appropriately termed operations. As E. Fromm (1994) pointed out, such an approach to learning risks leading to a loss of motivation

and the emergence of the phenomenon of “alienation”, as the actions performed during learning lose their personal meaning. In other words, what a student does during learning is not directly connected to their real motives (Längle, 2002). Moreover, while there may be an objective connection between actions and motives, for personal meaning to arise, this connection must also become subjective, it must be conscious.

The obtained data showed that the majority of respondents rated their academic performance as average, about a fifth as high, and approximately the same proportion rated their performance as below average or low. Furthermore, the majority of respondents were those whose academic activities either remained at the same level as before the impact of wartime conditions or even improved slightly; about a fifth were those whose learning activities improved significantly; and a small percentage were those whose academic activities decreased slightly or significantly (Fig. 6).

How do you rate your academic performance over the past year?



How would you rate your academic success over the past year, based on the grades you received, compared to previous years?

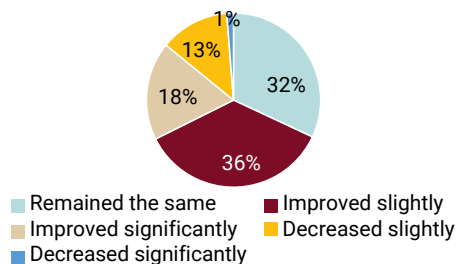


Figure 6. Results of the study on cognitive regulation in academic activities among participants

Source: author's development

The results presented demonstrate that most respondents were driven by intrinsic motivation, yet they predominantly rated their academic performance as average. By summarising the results obtained for the characteristics of academic activities for each participant, three groups of participants were identified: those who noted only positive characteristics of their academic activities; those who noted only negative characteristics of their academic activities; and those who noted both positive and negative characteristics of their academic activities. The largest group was the third one, indicating that most students were aware of both their strengths in learning and the difficulties they faced. Approximately one-fifth of respondents belonged to the group that evaluated their academic activities predominantly positively, which may indicate their high self-organisation, motivation, and adaptability to learning requirements. In contrast, a very small percentage of students noted exclusively negative characteristics of their activities. This may indicate the presence of deeper problems such as chronic stress, low motivation, or significant difficulties in mastering the learning material, which require additional attention and support. Such a distribution highlights the importance of an individual approach when working with students, as each group requires different approaches to improve their academic activities and overall psychological well-being (Fig. 7).

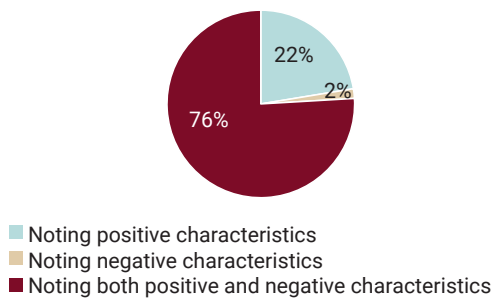


Figure 7. Groups of participants based on the characteristics of academic activities
 Source: author's development

When comparing students' self-assessments of their own learning effectiveness across different courses, no visible trend was observed. In other words, most students, regardless of their year of study, perceived their own diligence and effectiveness in learning as practically the same. However, they noted a moderate to significant decrease in academic achievement when considering the assessment results (Fig. 8).

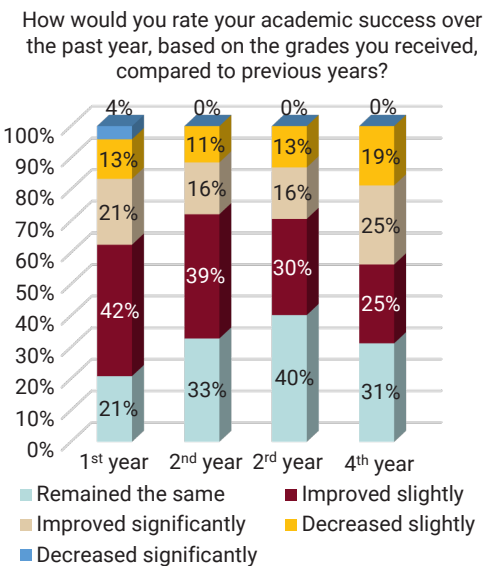
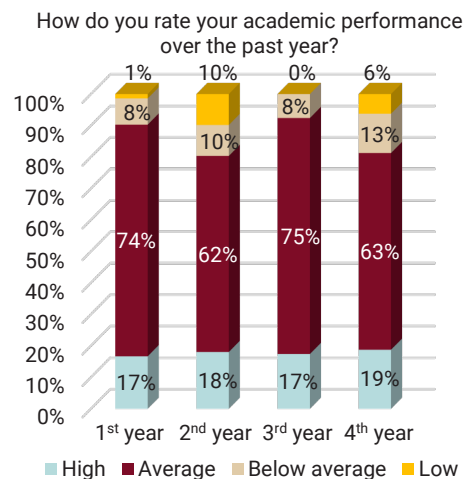


Figure 8. Results of the study on the academic performance of participants
 Source: author's development

The data presented shows that students' perception of their diligence and effectiveness in learning remained stable throughout the study period, regardless of the year of study. However, the actual results, particularly grades, indicated a decrease in academic achievement over time. This may be due to an increase in the complexity of learning tasks in higher years, an increase in the amount of material, or other factors that make it difficult to achieve high results. Despite a subjective feeling of self-efficacy, students may experience difficulties in adapting to new demands, leading to a decrease in academic achievement. This highlights the need not only for independence and perseverance but also for effective support for academic activities at all stages of education.

A comparison of the indicators of students' academic performance and the characteristics of how these performance among students revealed the following:

➤ high and average ratings of academic performance among the respondents correlated with

positive or a combination of positive and negative characteristics of academic activities;

➤ ratings of academic performance below average correlated with a combination of positive and negative characteristics of learning activities;

➤ low ratings of academic performance, unlike those with higher ratings, correlated with a combination of positive and negative characteristics of academic activities;

➤ the maintenance or improvement of academic performance levels under extreme conditions was associated in the respondents with positive or a combination of positive and negative characteristics of their academic activities;

➤ a decrease in the level of academic performance was associated with a more frequent occurrence of negative characteristics of this activity;

➤ respondents who noted only negative characteristics of their academic activities during the period of wartime rated their academic performance as low, as well as significantly decreased, slightly decreased, or remained at the same level (Table 1).

Table 1. Distribution of respondents based on the correlation between indicators of academic performance and the characteristics of academic activities

No.	Group of respondents based on the characteristics of academic activities	Academic performance, %								
		Level of performance				Comparison of performance with previous academic years				
		High	Average	Below average	Low	Remained the same	Improved slightly	Improved significantly	Decreased slightly	Decreased significantly
1	reporting only positive characteristics	67	15	-	13	27	23	27	3	-
2	reporting both positive and negative characteristics of academic activities	33	85	100	37	70	77	73	94	67
3	reporting only negative characteristics of academic activities	-	-	-	50	3	-	-	3	33
Total, %		100	100	100	100	100	100	100	100	100

Source: author's development

A correlation analysis conducted to examine the possible relationship between indicators of the nature of academic activities and their outcomes revealed several moderate correlations. Specifically, it was found that an increase in self-rated academic performance was positively correlated with the speed of learning information ($r = 0.322, p \leq 0.01$), the strength of acquired knowledge ($r = 0.389, p \leq 0.01$), diligence in studying ($r = 0.416, p \leq 0.01$), the quality and depth of acquired knowledge ($r = 0.445, p \leq 0.01$), personal desire to learn ($r = 0.352, p \leq 0.01$), activity in learning ($r = 0.346, p \leq 0.01$), diligence in learning ($r = 0.416, p \leq 0.01$), systematic approach to learning ($r = 0.331, p \leq 0.01$), and a conscious approach to learning ($r = 0.381, p \leq 0.01$).

Thus, students' academic performance ratings are closely related to the nature of their academic activities. High and average grades were typically accompanied by positive or mixed characteristics, while low grades were associated with more frequent negative characteristics. Maintaining or improving academic outcomes under extreme conditions was often associated with positive or mixed characteristics, while a decline in performance was more often associated with negative characteristics. However, most of the correlations were moderate, and there were no strong correlations, suggesting some variability in the relationship between performance and the nature of academic activities.

Discussion

This study has obtained data on the characteristics of students' academic activities under the extreme conditions of martial law. A custom-designed questionnaire was used as a method of data collection. On the one hand, this made the study unique, but on the other hand, it created difficulties in comparing the data with similar studies, as in this context, it was necessary to rely only on individual aspects. Regarding the obtained indicators of the durability of acquired knowledge (57% noted the strength of the acquired knowledge), the study by authors

M. Weggemans *et al.* (2017) is noteworthy. The authors conducted a surprise knowledge test of second-year students to assess the strength of the knowledge they had acquired in their first year. It was found that only 46% of students demonstrated strong knowledge, which is 11% less than in the current study. However, it is necessary to consider the methodological differences between the studies, namely the use of tests and questionnaires, respectively, as well as possible differences in the forms and methods of student learning. Moreover, the research of M. Weggemans *et al.* (2017) does not mention the impact of extreme conditions on students.

In another study conducted by K. Alshamrani *et al.* (2021), a difference was found in the strength of acquired knowledge when using a mixed and passive approach to learning. Thus, the strength of knowledge with a passive approach varied within the range of 47.6-64.1%, while a mixed approach showed higher results (61.5-78.6%). The indicators of the strength of acquired knowledge using a passive approach correspond to the results obtained in the current study. However, K. Alshamrani *et al.* (2021) did not mention that the students' academic activities were accompanied by the influence of extreme conditions. There are also methodological issues related to the fact that in the study by K. Alshamrani *et al.* (2021), different approaches to learning were used, which was not a criterion for differentiating respondents in the current study.

The high level of superficiality of the acquired knowledge (52%), obtained in the current study, can be explained by the probable influence of stress factors caused by extreme conditions. In the study by M. Girotti *et al.* (2024), it was established that in most cases, temporary acute or chronic stress led to a deficit in cognitive flexibility, which affected attention switching, concentration, and analysis of diverse information. A similar nature of stress is associated with a decrease in the time allotted for decision-making and a shift in decisions towards impulsivity, risktaking, and dependence. That is, one can speak of a decrease

in the ability to self-regulate. Also, as a rule, acute stress leads to a deficit in working memory.

The ability to self-regulate is typically associated with ease of acquiring knowledge and skills, and conversely, a reduced ability for behavioural inhibition can lead to frequent distractions and a subjective feeling of difficulty during learning, which hinders the learning process and the durability of knowledge over time. In this context, the results of the current study are interesting: about a third of respondents reported stress in learning and almost half reported superficiality of the acquired knowledge. However, whether the obtained data is a result of a decrease in the ability for behavioural inhibition due to stress requires further study. Since the current study did not involve selecting participants based on the presence of stress or other conditions caused by extreme conditions. The indicators of awareness in learning obtained in the current study (83%) may demonstrate a high level of metacognitive awareness among the respondents, which is closely related to awareness and motivation to learn. In particular, in the study by R. Abdelrahman (2020), the relationship and nature of the influence of metacognitive awareness and motivation on the success of academic activities were investigated, and as a result, no significant differences were found between the gender of students and academic success. However, it was justified that there is a significant difference in metacognitive awareness. Female students demonstrated a higher level of metacognitive knowledge and metacognitive regulation. Furthermore, it was found that intrinsic and extrinsic motivation were essentially independent. However, extrinsic motivation did not suppress intrinsic motivation, and both types showed a slight compatibility in male students. Conversely, in female students, both types of motivation were compatible or even shared. It is worth noting that the study was conducted in an Arab culture, with its inherent views on gender roles.

The non-linear relationship between motivation to learn, effort, and achievement found in the current study requires further investigation.

In this context, the study by H. Wu *et al.* (2020) is interesting, which examined the relationship between the nature of motivation and academic achievement among medical students. It was found that students demonstrated different levels of intrinsic motivation and academic achievement depending on the educational institution. Male students reported higher intrinsic motivation but lower academic achievement than female students. The overall impact of intrinsic motivation on academic achievement was greater than the impact of extrinsic motivation. There were significant indirect effects of intrinsic or extrinsic motivation on academic achievement through engagement in learning. Additionally, both intrinsic and extrinsic motivation predicted self-efficacy; however, the direct impact of self-efficacy on academic achievement was insignificant.

Finally, it is worth noting that the impact and consequences of extreme conditions are not direct, which creates difficulties in identifying the root cause of certain changes in academic activities. For example, in a study by A. Özbay & M. Çelik (2024), the complex influence of psychological resilience, anger, and hostility on life satisfaction and attachment style among students was studied. The initial analysis confirmed that psychological resilience, as well as anger and hostility, partially mediate the relationship between secure and anxious attachment styles and life satisfaction. These determinants of life satisfaction are particularly important in wartime conditions, as aggression causes a natural reaction of anger and hostility towards the aggressor. Also, attachment style is extremely important for first-year students, who usually have a more pronounced need for social support from family and friends, which can affect their academic activities. In another study conducted by A. Cataldo *et al.* (2023), it was argued that online learning, which is forced due to security concerns, creates difficulties due to the mediated influence of sociopsychological factors. It was indicated that online learning can be a source of technostress, as students have to share their family space and time with their

studies. That is, the issue is not online learning as such, but the fact that it is carried out from the home environment. Another conclusion is that the conflict resulting from the difficulties of combining study and family affects academic performance. And, finally, the peculiarities of online learning and the resulting conflict can lead to a decrease in learning motivation.

Conclusions

While pursuing education amidst a country at war, students have demonstrated the ability to maintain a high speed of information acquisition, diligently engage in academic activities, sustain internal motivation and activity within the learning process, and regulate their actions in learning with a conscious approach to their academic activities. This can be explained by the high plasticity of the nervous system in youth, which allows for adaptation to new stressful conditions. Among the student population, there is also a portion that faces various difficulties in academic activities. The most common of these include: superficiality of acquired knowledge (52%), feelings of stress and difficulty in learning (32%), rapid forgetting of acquired information (43%), slow processing of information (26%), and lack of systematicity in academic activities (27%). Such data can be explained by the prolonged influence of war-related stress factors. These difficulties can have a significant impact on students' academic achievement and overall motivation.

Students in extreme conditions have the ability to maintain or even improve their academic performance, feeling that they have acquired new competencies. This can be due to various factors, including a desire for positive change. External circumstances that stimulate students to show initiative and independence also play an important role. Moreover, the desire for change and improvement can serve as a powerful driving force in the learning process, even under stressful conditions. A decrease in academic performance among students in wartime conditions is quite possible and is normal in abnormal

conditions – in times of war. The constant feeling of anxiety, danger, and uncertainty negatively affects the ability to concentrate, memorise information, and effectively participate in the learning process. Under such conditions, a decline in academic performance is not a sign of negligence or weakness on the part of students but rather indicates a deep impact of external circumstances. However, it is important to note that the decline in results is a temporary phenomenon. Additional attention should be paid to a small group of students whose academic activities were accompanied by negative characteristics. They typically exhibit low academic performance and have experienced a decline in academic achievement. The reasons for this may be the experienced stress and trauma resulting from difficult life circumstances such as war, loss of loved ones, forced displacement, or physical danger.

During the analysis, a significant amount of information was collected and systematised, covering the key parameters defined at the stage of setting tasks. While the results reflect both expected trends and unexpected facts that may have an impact on the further development of research on the problem of student academic activities in extreme conditions. Given the limitations of this study, which is descriptive, it should be emphasised that the results require further analysis and expansion. In particular, further research could be directed towards the development and testing of effective psychological interventions and learning strategies aimed at overcoming the identified difficulties: developing stress resilience, improving cognitive functions, optimising memory and information organisation processes, and providing individualised support to students who experience significant difficulties in learning in extreme conditions.

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Conflict of Interest

None.

References

- [1] Abdelrahman, R.M. (2020). Metacognitive awareness and academic motivation and their impact on academic achievement of Ajman University students. *Heliyon*, 6(9), article number e04192. doi: [10.1016/j.heliyon.2020.e04192](https://doi.org/10.1016/j.heliyon.2020.e04192).
- [2] Alj, Z., & Bouayad, A. (2024). Multidimensional determinants of academic performance: Insights from undergraduate students in Moroccan universities. *Journal of Technology and Science Education*, 14(2), 607-621. doi: [10.3926/jotse.2404](https://doi.org/10.3926/jotse.2404).
- [3] Alshamrani, K.M., Khan, M.A., & Alyousif, S. (2021). Assessment of radiological sciences students' and interns' long-term retention of theoretical and practical knowledge: A longitudinal panel study. *Advances in Medical Education and Practice*, 12, 1549-1559. doi: [10.2147/amep.s346802](https://doi.org/10.2147/amep.s346802).
- [4] American Psychological Association (APA). (2003). *Ethical principles of psychologists and code of conduct*. Retrieved from <https://www.apa.org/ethics/code>.
- [5] Cassady, J.C., & Finch, W.H. (2020). Revealing nuanced relationships among cognitive test anxiety, motivation, and self-regulation through curvilinear analyses. *Frontiers in Psychology*, 11, article number 1141. doi: [10.3389/fpsyg.2020.01141](https://doi.org/10.3389/fpsyg.2020.01141).
- [6] Cataldo, A., Bravo-Adasme, N., Araya, P., & Ormeño, V. (2023). Why university students are technostressed with remote classes: Study-Family conflict, satisfaction with university life, and academic performance. *Telematics and Informatics*, 80, article number 101982. doi: [10.1016/j.tele.2023.101982](https://doi.org/10.1016/j.tele.2023.101982).
- [7] Caudwell, K.M., Baldini, S., Calvezzi, G., Graham, A., Jackson, K., Johansson, I., Sines, M., Lim, L.W., & Aquili, L. (2023). Learning bias predicts fear acquisition under stress but not cognitive flexibility. *Physiology & Behavior*, 272, article number 114384. doi: [10.1016/j.physbeh.2023.114384](https://doi.org/10.1016/j.physbeh.2023.114384).
- [8] Chen, G.M., Wang, Y.Y., Li, M., Jia, K.F., Liu, C.Y., Zhang, Y., Cheng, J., Ding, H., & Chen, R. (2024). Mediation role of coping styles on negative life events and subthreshold depression in medical students. *Current Psychology*, 43, 36064-36072. doi: [10.1007/s12144-024-06988-1](https://doi.org/10.1007/s12144-024-06988-1).
- [9] Clauss, G. (1987). *Differential learning psychology: An introduction*. Munich: Hermann Luchterhand Verlag.
- [10] Córdova, A., Caballero-García, A., Drobnic, F., Roche, E., & Noriega, D.C. (2023). Influence of stress and emotions in the learning process: The example of COVID-19 on university students: A narrative review. *Healthcare*, 11(12), article number 1787. doi: [10.3390/healthcare11121787](https://doi.org/10.3390/healthcare11121787).
- [11] Craddock, T.B., & Telesco, G. (2021). Police stress and deleterious outcomes: Efforts towards improving police mental health. *Journal of Police and Criminal Psychology*, 37(1), 173-182. doi: [10.1007/s11896-021-09488-1](https://doi.org/10.1007/s11896-021-09488-1).
- [12] Defante, M.L.R., Monteiro, S.O.N., & Teixeira, L.M. (2024). Neurobiology of the impact of aversive experiences on learning. *Brazilian Medical Students Journal*, 9(13). doi: [10.53843/bms.v9i13.576](https://doi.org/10.53843/bms.v9i13.576).
- [13] Fassett-Carman, A.N., Smolker, H., Hankin, B.L., Snyder, H.R., & Banich, M.T. (2022). Neuroanatomical correlates of perceived stress controllability in adolescents and emerging adults. *Cognitive, Affective, & Behavioral Neuroscience*, 22, 655-671. doi: [10.3758/s13415-022-00985-2](https://doi.org/10.3758/s13415-022-00985-2).
- [14] Fromm, E. (1994). *On being human*. London: Continuum.
- [15] Girotti, M., Bulin, S.E., & Carreno, F.R. (2024). Effects of chronic stress on cognitive function – from neurobiology to intervention. *Neurobiology of Stress*, 33, article number 100670. doi: [10.1016/j.ynstr.2024.100670](https://doi.org/10.1016/j.ynstr.2024.100670).

- [16] Komariah, A., Fiana, M., & Ningsih, R. (2024). Motivation and independence in learning in nursing new students. *Java Nursing Journal*, 2(1), 65-70. doi: [10.61716/jnj.v2i1.35](https://doi.org/10.61716/jnj.v2i1.35).
- [17] Lagmay, E.A.D., & Rodrigo, M.M.T. (2022). The impact of extreme weather on student online learning participation. *Research and Practice in Technology Enhanced Learning*, 17, article number 26. doi: [10.1186/s41039-022-00201-2](https://doi.org/10.1186/s41039-022-00201-2).
- [18] Längle, A. (2002). *Living meaningfully. Logotherapy as a life aid*. Freiburg: Herder.
- [19] Mofatteh, M. (2021). Risk factors associated with stress, anxiety, and depression among university undergraduate students. *AIMS Public Health*, 8(1), 36-65. doi: [10.3934/publichealth.2021004](https://doi.org/10.3934/publichealth.2021004).
- [20] Mueller, K.E., Bellini, S.G., & Patten, E.V. (2024). Didactic program in dietetics (DPD) students' experiences with pandemic learning and expectations for their future education: A descriptive study through a systems lens. *BMC Medical Education*, 24, article number 244. doi: [10.1186/s12909-024-05251-2](https://doi.org/10.1186/s12909-024-05251-2).
- [21] Novotný, J.S., Srt, L., & Stokin, G.B. (2024). Emotion regulation shows an age- and sex-specific moderating effect on the relationship between chronic stress and cognitive performance. *Scientific Reports*, 14, article number 3028. doi: [10.1038/s41598-024-52756-3](https://doi.org/10.1038/s41598-024-52756-3).
- [22] Özbay, A., & Çelik, M. (2024). The mediating role of psychological resilience, anger, and hostility in university students' attachment styles and life satisfaction. *Children and Youth Services Review*, 163, article number 107752. doi: [10.1016/j.childyouth.2024.107752](https://doi.org/10.1016/j.childyouth.2024.107752).
- [23] Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi: [10.1037/0003-066X.55.1.68](https://doi.org/10.1037/0003-066X.55.1.68).
- [24] Schwabe, L., Hermans, E.J., Joëls, M., & Roozendaal, B. (2022). Mechanisms of memory under stress. *Neuron*, 110(9), 1450-1467. doi: [10.1016/j.neuron.2022.02.020](https://doi.org/10.1016/j.neuron.2022.02.020).
- [25] Turliuc, M.N., & Balcan, A.D. (2023). Stress and psychological well-being in military gendarmes. *Social Sciences*, 12(9), article number 517. doi: [10.3390/socsci12090517](https://doi.org/10.3390/socsci12090517).
- [26] Varyvoda, K.S. (2022). Implementing mindfulness interventions in schools: Analysis of health protection potential. *Scientia et Societas*, 1(1), 114-121. doi: [10.31470/2786-6327/2022/1/114-121](https://doi.org/10.31470/2786-6327/2022/1/114-121).
- [27] Villani, L., Pastorino, R., Molinari, E., Anelli, F., Ricciardi, W., Graffigna, G., & Boccia, S. (2021). Impact of the COVID-19 pandemic on psychological well-being of students in an Italian university: A web-based cross-sectional survey. *Globalization and Health*, 17, article number 39. doi: [10.1186/s12992-021-00680-w](https://doi.org/10.1186/s12992-021-00680-w).
- [28] Weggemans, M.M., Custers, E.J.F.M., & ten Cate, O.T.J. (2017). Unprepared retesting of first year knowledge: How much do second year medical students remember? *Medical Science Educator*, 27, 597-605. doi: [10.1007/s40670-017-0431-3](https://doi.org/10.1007/s40670-017-0431-3).
- [29] Wilks, S.M., Archie, B., Perkins, E.L., Smith, C., & McNeil, A. (2023). The impact of the COVID-19 pandemic on the academic performance, level of knowledge, and the health and well-being of students on an HBCU campus. *Journal of Comprehensive Nursing Research and Care*, 8(1), article number 187. doi: [10.33790/jcnrc1100187](https://doi.org/10.33790/jcnrc1100187).
- [30] Wu, H., Li, S., Zheng, J., & Guo, J. (2020). Medical students' motivation and academic performance: The mediating roles of self-efficacy and learning engagement. *Medical Education Online*, 25(1), article number 1742964. doi: [10.1080/10872981.2020.1742964](https://doi.org/10.1080/10872981.2020.1742964).
- [31] Yang, S.X., Cheng, S., Sun, Y., Tang, X., & Huang, Z. (2024). Circadian disruption in civilian airline pilots. *Aerospace Medicine and Human Performance*, 95(7), 381-389. doi: [10.3357/AMHP.6316.2024](https://doi.org/10.3357/AMHP.6316.2024).

Особливості навчальної діяльності студентської молоді в екстремальних умовах: результати пілотажного дослідження

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Анотація. У статті висвітлено результати дослідження навчальної діяльності студентської молоді в екстремальних умовах, зумовлених впливом тривалої війни в Україні, що супроводжуються підвищеним впливом стрес-факторів. Метою роботи було висвітлення результатів пілотажного дослідження психологічних особливостей навчальної діяльності студентів в екстремальних умовах задля розробки рекомендацій щодо оптимізації навчального процесу. Для збору даних було використано авторську анкету, запитання якої були спрямовані на вивчення характеру здійснення навчальної діяльності студентами та ставлення студентів до результативності власної навчальної діяльності. Було виявлено, що студенти здатні зберігати високу швидкість опанування навчального матеріалу, проявляти ретельність у виконанні завдань, підтримувати внутрішню мотивацію до навчання та ефективно регулювати свої дії в стресогенних умовах. Також досліджено труднощі, що виникають під час навчання в екстремальних умовах, серед яких найчастіше проявлялися такі: відчуття напруженості й важкості навчального процесу, поверхневність отриманих знань, швидке забування опанованої інформації, уповільнене опрацювання навчальної інформації, відсутність системності в навчальній діяльності. Встановлено, що оцінка результативності навчальної діяльності студентів значною мірою залежала від особливостей їхньої навчальної діяльності. Високі та середні оцінки здебільшого були пов'язані з позитивними або змішаними характеристиками навчальної діяльності, тоді як низькі оцінки частіше супроводжувались негативними характеристиками. Аналіз отриманих даних та подібних досліджень дозволив узагальнити потенційні чинники, що впливають на результативність навчальної діяльності студентів у таких умовах. Отримана в результаті дослідження інформація може бути використана для розробки ефективних екстрених планів навчання, підвищення гнучкості освітнього процесу, впровадження заходів з підтримки психологічного здоров'я студентів та системного моніторингу їхнього благополуччя в умовах воєнного та повоєнного стану, а також внаслідок впливу екстремальних умов, зумовлених іншими чинниками

Ключові слова: стресові обставини війни; набуття знань; характер навчальної діяльності; результативність навчальної діяльності; стрес