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Educational Strategy for Personal Safety in Ukraine: A Neurosocial Approach to Using Reflexes and Acquired Competencies

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Abstract: *This article analyzes current approaches to developing safety competencies and instant response skills in future social workers. It offers new didactic conditions and evaluates their effectiveness within Ukraine's higher education institutions. The article aims to verify updated teaching methods based on the simulation of stressful and neutral situations. These methods influence students' self-regulation and motivation to follow a personalized educational path. The article also compares Ukrainian practices with foreign theories related to psychological safety. This comparison helps to identify innovative trends in the interpretation of psychological safety. These trends relate specifically to how personal freedom is understood, how individuals define the boundaries of their psychological space, and how future social workers perceive and experience both immediate and long-term threats. To achieve this, the authors employ an interdisciplinary methodology. This includes subject-typological analysis of existing educational and neuroscientific theories, extrapolating neurophysiological principles to the educational process, and modelling based on newly proposed educational conditions. These models were tested using a quasi-experiment in a Ukrainian university. The evaluation was conducted using statistical analysis and qualitative discussion of results. Data were collected using several methods. These included student self-assessments and measurements of emotional intelligence to capture immediate stress responses. Additionally, experts observed students' educational trajectories. Self-education practices were also analyzed, such as keeping reflective journals and refining individual danger-response protocols. Theoretical methods include subject analysis, as well as typological and comparative analysis of existing theories. The article also applies the extrapolation of neuroscientific approaches to the didactic context of higher education. Experimental methods involve the modelling of educational conditions based on the prior theoretical analysis. These models were verified through student self-observation, expert observation from external specialists, and statistical generalization of the collected assessments. The quasi-experiment demonstrated several key findings. First, it revealed the high effectiveness of reactive techniques for stress and anger perception, such as simulation training with limited reaction time. Second, the study found strong motivational responses to training sequences designed with neuro-reflexive principles. Finally, the experiment showed moderate effectiveness of strategies focused solely on cognitive knowledge acquisition.*

Keywords: *neuro-oriented educational conditions, professional stress response, simulation methods, personal educational path, danger-avoidance protocols, personal journals.*

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Introduction

Currently, research on psychological safety addresses a broad range of issues. One key area of focus is identifying the factors that influence the perception and maintenance of danger. In today's pedagogy, which interacts with technological and natural sciences, there is an increasing recognition of the need to consider multimodal factors in the training of social workers who face social and physical hazards.

These factors are categorized into external and internal influences. External factors include the difficulty (complexity) of the situation, the duration of exposure to stressors, the significance of the consequences of overcoming challenges, and the availability (or lack) of medical assistance. Internal factors, on the other hand, involve sensitivity, anxiety, aggressiveness, intelligence level, personal reactivity, and neuro-profile.

Research relevance

Personal safety competencies are crucial for protecting social workers from potential threats and hazards. These strategies can be informed by neuropsychology, which studies the relationship between the brain and behaviour. By understanding how the brain processes information and responds to various situations, one can develop effective safety strategies based on neuropsychological principles.

The authors of this article have previously analyzed Ukrainian and other post-Soviet research on the socio-psychological aspects of safety. They identified the key features of its manifestation, particularly in fostering a conscious attitude towards life conditions that promote mental balance and development. In this context, the concept of neuropsychological well-being refers to the ideal living conditions and human activities that contribute to a sense of safety.

In broader terms, many scholars define this as a societal awareness in which communities and individuals perceive the quality of life as stable and dependable (Nerubasska & Maksymchuk, 2020; Nerubasska et al., 2020; Palamarchuk et al., 2020). This perception of quality of life creates genuine opportunities to meet the natural and social needs of citizens while instilling confidence in the future (Gerasymova et al., 2019; Maksymchuk et al., 2020a; Maksymchuk et al., 2020b; Melnyk et al., 2019; Onishchuk et al., 2020; Sheremet et al., 2019). It also serves as a foundation for preventing professional deformation (Virna, 2015).

Thus, psychological safety is a critical condition for one's harmonious development. However, research on psychological safety in Ukraine often focuses on it as a social, rather than personal, neuro-subject phenomenon. There is, however, growing hope for a shift towards a more complex interdisciplinary approach in post-Soviet research, integrating sociology, psychology, and neuroscience.

The introduction section will first explore the international context of the issue and outline its relevance. It will then identify existing parallels between Ukrainian psychological traditions and the neuroscientific foundations of personal safety.

According to Freud (1995), one's cultural environment is always under pressure, which obstructs the satisfaction of desires. The most powerful urges, such as sexual and aggressive instincts, face the greatest pressure. This conflict is resolved in the development of the human mind through the "ego," which subdues the "id." The ego's function is to find a balance between the id, the superego, and the demands of the surrounding world.

However, post-Freudian theories, particularly Erikson's concepts (1950) of psychosocial development, have had a significant influence in Ukraine. Advocates of ego psychology introduced the notion of "ego power." It refers to one's ability to confront reality, even in distressing situations, without relying on primitive psychological defences (Korolchuk & Krainiuk, 2017).

As these ideas developed, psychological well-being in Ukraine began to be linked to using mature defences, rather than primitive ones. Ego-psychologists emphasized that not only mature responses are important, but also the ability to have a diverse set of protective mechanisms. A person who reacts to stress habitually is less psychologically well-adjusted than one who uses defences appropriate to the situation. Additionally, proponents of the object relations school argued that a psychologically healthy person can build mature, healthy relationships with others.

Maslow (1942) laid the foundations for understanding the neuropsychological aspects of personal safety and its dynamics over eight decades ago. While he did not use neuroscientific terminology, he recognized that subjective deficits, whether acquired or congenital, form the basis of psychological safety and insecurity. These deficits, along with conditions such as psychasthenia and neuroticism (commonly referred to as insecurity, nervousness, and a lack of a stable personality core), contribute to this foundational concept.

When individuals possess these inherent traits, their subconscious actions are driven by an instinctual desire to discover or restore a sense of

safety. This quest involves a range of defensive and compensatory mechanisms. Such individuals often feel rejected on a subconscious level and consciously experience unhappiness, instability, and inner conflict. They perceive the world and others as threats, reacting by attempting to regain safety in various ways. Paradoxically, in their efforts to reclaim safety, they may unintentionally reinforce or even exacerbate their sense of insecurity – unless a positive external influence steps in to guide them toward a more constructive path (Maslow, 1942).

It is also crucial to find common ground between psychoanalytic theory and a neurobiological understanding of defence mechanisms. Kuznietsova (2005) examined the formation of psychological safety from a scientific perspective and identified it as encompassing different levels: personality, individual, actor, and individuality. Psychological safety at the personality level is maintained by specific protective mechanisms – subconscious, conscious, and superconscious.

Subconscious protections include regression, denial, somatization, substitution, and eroticization. Conscious protections involve isolation, avoidance, fantasy, and intellectualization (rationalization). Superconscious protections include total control, projection, suppression, constructive control, and sublimation.

However, the authors of this article did not find pedagogical methods in the didactic material that directly addressed these scientific concepts. Only a few scholars approach the neurophysiological understanding of personal safety, often relying on general psychological tools. Thus, the psychology of safety can be defined as the state of being free from threats, as well as the emergence, operation, and enhancement of mechanisms that secure one's mental activities. This includes their interactions with others and their environment while engaged in productive activities.

After examining the methodological background, a preliminary conclusion is drawn to substantiate this article's relevance. The Ukrainian scientific space, represented by the authors, has traditionally focused on social, group, and state forms of safety. These include physical safety, as well as energy, ecological, and informational security. Valeological, hygienic, and industrial-technical approaches to human safety have always been dominant in Ukraine.

Accordingly, **this article aims** to analyze the most widely studied concepts of personal safety. It seeks to identify correlations between neurocentric perspectives and the potential applications in today's Ukrainian didactics. Based on this analysis, the article proposes new educational

conditions for developing competencies in future social workers. These conditions are tested in an educational quasi-experiment.

Criteria for selecting literature

The authors of this article followed the principles of multidisciplinarity, prioritization of sources, and international validity. The main criteria for selecting literature were as follows:

- Relevance of the sources to neuropsychological, pedagogical, and socio-cognitive aspects of personal safety.
- The presence of an interdisciplinary approach in the cited works, combining psychological, neurophysiological, and pedagogical perspectives on safety.
- Inclusion of classical theorists and current empirical research.
- Use of studies from internationally recognized databases or authoritative scientific publishers to ensure a high level of objectivity and epistemological weight in the justifications.

Literature review

The first and most fundamental approach to understanding coping attitudes and patterns is neuroscientific. This perspective views initial reactions and coping skills as the result of early neural connections.

Western European scientists, as early as the last century, divided their studies of postnatal and early childhood neuro-programming into various issues related to the immediate environment. These issues range from the psycho-trauma of birth to the destructive influences of early, predominantly spontaneous domestic society.

Key factors influencing neuro-programming in the immediate environment include the presence or absence of older siblings, and peers, and the level of emotional attachment from parents. Ukrainian researchers, however, place particular emphasis on psychological commitment in early childhood-parent relationships, which shape the stability of one's sense of safety. They claim that the stability of this personal experience is, to some extent, independent of situational difficulties.

As noted by Goldberg et al. (1999), a strong sense of responsibility, psychological support, and nurturing parenting create stable positive neural connections in early childhood. These connections are crucial in shaping a child's social-emotional development and can significantly influence their future life success. Similar correlations are found in Ukrainian studies, even

though Ukrainian psychophysiology of early childhood tends to rely more on psychoanalytic traditions. Neuroscientific terminology is gradually replacing metaphorical terms in these discussions.

Recent studies by neuroscientists on psychological safety have been particularly useful for this work. These studies integrate personality (in terms of character, temperament, and neuropsychological profile), sociocultural factors, and factual events that can cause harm. They suggest that examining personal safety requires a deductive approach. The safety of individuals in society is intricately linked to broader societal processes, and the need for safety can drive social transformation.

Thus, personal safety is a socio-cultural phenomenon, rooted in the universal needs and values of a society and connected to its overall quality of life. It can be modelled and predicted using an interdisciplinary psychological and sociological approach. On an individual level, personal safety is manifested in psychological and neurophysiological terms, as well as in sociocultural aspects such as comfort, carefreeness, and personal perspective.

Theories of love and attachment safety present a somewhat contrasting view, as these concepts have often been either separated or confused in various theories. MacDonald (1999) analyzed numerous studies, psychometric assessments, and neuroimaging data on adolescents and students. He concluded that these systems serve different purposes, trigger distinct emotions, have varying prevalence among primates, and show distinct gender differences.

The key point is that each individual's perception of love and affection can have both positive and negative effects on their sense of personal safety. For example, excessive anxiety and overprotection by women can hinder and promote psychological safety, influencing readiness or avoidance of traumatic situations. Thus, love and trust, as two neurophysiological factors of interaction with the world, serve different functions (MacDonald, 1999).

In Western traditions, it is customary not to separate somatic, neurophysiological, and psychological aspects of childhood trauma, which can be either familial or paediatric. Schwebel and Brezausek (2007) argue for the importance of the mesosystem. This system includes factors from one's environment and caregivers, such as doctors and parents, especially during the first three years of life.

Most Western scholars have traditionally studied personal safety factors and mechanisms within the socio-psycho-neuro complex. As Bowlby (2008) emphasized, a sense of safety arises from establishing a secure attachment between parents and children, which he refers to as "good fathering." At the same time, McDonald and Almeida (2004) highlight

parental attachment as a defensive mechanism. They make a distinction between its two components – love and trust – each with different functions and emotional experiences.

In the context of pedagogy, particularly in didactics of competence formation, it is crucial to examine theories closer to educational practice. The existential-humanistic approach holds a unique position among these perspectives. It views psychological safety as the need to fulfil the basic requirement for safety, from physical survival to social self-realization (Batrachenko & Rykhalska, 2009). This approach sees individuals as creators of their fate. They can acquire active life experiences and consciously respond to danger, thereby confronting it.

Thus, personal psychosynthesis of survival patterns is determined by a complex mix of neurophysiological, socio-cultural, and psychological factors.

Assagioli's psychosynthesis (1965) aims to help individuals achieve organic unity. The researcher identifies different levels in this pursuit. At the personal psychosynthesis level, the goal is to help individuals shift from an egocentric, emotionally distorted view of ordinary human existence to an objective, healthy, and rational perspective. In spiritual psychosynthesis, the goal is for individuals to develop the capacity to anticipate and gradually experience a state of consciousness that reflects their true self-awareness. This state is marked by joy, equanimity, inner security, quiet strength, mental clarity, and a profound love for all things (Assagioli, 1965).

Based on an analysis of neuro-oriented, psychological, and pedagogical theories of personal safety, the authors of this article have reached the following conclusions. These can be applied when developing new educational conditions or modifying traditional methods for social worker training programmes in Ukraine:

- Teaching should consider the neuropsychological profile, as well as an individual's experiences and attitudes toward the world. This promotes differentiated training, requiring observation and behaviour journals to track personal trajectories.
- Training must focus not only on resolving production situations cognitively but also on reinforcing new, immediate reactions to stress (the neuro-affective approach).
- General safety competencies and diagnostic markers should integrate the psychosynthesis of conscious (cognitive, knowledge-based,

experiential) and unconscious (reflexive, reactive, neurophysiological) components of the personality.

Research ethics

The authors of the article obtained approval for the quasi-experiment from the ethics committee of a university in Kyiv. Additionally, the students voluntarily consented to participate in the experiment.

International relevance

The international significance of the article lies in the authors' integration of foreign neuropsychological, sociocultural, and pedagogical concepts into the Ukrainian scientific and educational context. This integration results in the creation of new educational models. The article draws on a strong theoretical and methodological foundation (Bowlby, 2008; Erikson, 1950; Freud, 1995; MacDonald, 1999; Maslow, 1942; Schwebel & Brezausek, 2007). This reflects a methodological correlation between classical and current theories of psychological safety, all of which are integrated into a neuroscientific understanding of personality development.

The article also applies these approaches to the practice of preparing future social workers. This ensures a multidisciplinary approach, addressing cognitive, emotional, social, and biopsychological factors of safety. In this way, the article not only contributes to the development of Ukrainian pedagogy but also integrates the Ukrainian research field into the global discussion on personal safety. This discussion is increasingly relevant in the face of rising global social and physical risks.

Methods and materials

The article's main materials include publications by Ukrainian and foreign psychologists, teachers, and neurophysiologists who have researched personal safety. It also draws on their methodological developments for implementation, along with the initial and final data from the educational form-diagnostic experiment.

The didactic materials consist of new and modified educational conditions, developed through the synthesis of pedagogical, psychological, and neurophysiological factors. These factors include external elements such as knowledge, experience, reactions, and reflexes. These will be presented when describing the form-diagnostic experiment conducted with a student sample.

The research sample consists of two academic groups of future social workers from the educational institution where the quasi-experimental study was conducted. The authors selected these already-formed groups and then divided them into experimental and control groups using a blind selection method. The control group (CG) included 32 students, while the experimental group (EG) consisted of 35 students.

The demographic data of the studied population were obtained by assigning one academic group as the control group and the other as the experimental group within the same educational institution. This indicates a non-randomized sample. As a result, the groups were not analyzed at the pre-pedagogical stage. The primary criterion for division was the existence of already-formed and socially integrated academic groups. The experimental and control groups had prior experience in joint learning, socialization, and similar activities.

Theoretical methods of research include subject analysis, as well as typological and comparative analysis of existing theories. Another key method is the extrapolation of neuroscientific approaches to the didactic framework of higher education institutions. The experimental methods used in the study included modelling educational conditions based on preliminary theoretical and methodological analysis. These conditions were then verified through self-observation by students, external observation by specialists, and statistical methods for generalizing the obtained assessments.

The research methodology can be described as conceptually-theoretical. The authors, through an interdisciplinary analysis of neuropsychological, psycho-pedagogical, and socio-cognitive approaches, integrated existing scientific ideas without conducting their own empirical research.

The methodological framework of the article included the following techniques (technologies).

1. To align with the principles of psychosynthesis (the interaction of conscious and unconscious factors), it was decided to select training focused on immediate (within seconds) responses to dangerous or uncertain situations. This was after a theoretical study of the course "Personal Safety of a Social Worker," which became the main method for developing safety competencies and constructive reactions.

2. One of the most common methods for assessing initial and developed personal safety skills and reflexes in the educational process is measuring emotional stress tolerance, which the authors selected for this study. This method was adapted for use in training future social workers. Bar-On et al. (2000) were the first to use this technique on a large scale to evaluate

stress readiness. The Emotional Quotient Inventory (EQ-i) is a self-assessment questionnaire designed to measure emotional intelligence. It consists of several subscales that assess different aspects of emotional intelligence, including stress tolerance. Stress tolerance, the key subscale, measures one's ability to cope with stress and maintain emotional stability in challenging situations.

To determine stress tolerance using the EQ-i, students complete a questionnaire, and their answers are evaluated by a qualified professional and the students themselves. The stress tolerance subscale includes items such as "I can remain calm and focused under pressure" and "I can handle difficult or stressful situations effectively." Students rate their agreement with each item on a five-point scale, ranging from "strongly disagree" to "strongly agree."

The scores on the stress tolerance subscale are then analyzed to assess one's level of stress tolerance. Higher scores indicate greater stress tolerance and a better ability to cope with stress, while lower scores reflect lower tolerance and greater vulnerability to stress.

While the EQ-i provides valuable insights into emotional intelligence and stress tolerance, it is only one tool. It should be used alongside other assessments for a comprehensive understanding of one's stress tolerance. Additionally, the EQ-i should be interpreted by a qualified professional to ensure accurate results and appropriate recommendations. Therefore, in addition to this scale, the authors also used external observation to assess students' reactions to stressful situations during simulation tasks.

Data collection methods

The data collection methods were based on a multi-component approach, integrating self-assessment, external expert observation, and students' journal-based self-observation. The authors used a questionnaire adapted from the EQ-i, focusing on stress tolerance. This allowed tracking individual reactivity to stressful situations. Additionally, students' immediate reactions during simulation training were observed by qualified experts.

Students also kept journals, where they reflected on changes in their behaviour and refined their personal danger avoidance strategies. This provided in-depth qualitative data for further analysis.

Data analysis methods combined quantitative and qualitative approaches. The quantitative analysis involved comparing self-assessment results and expert evaluations between the control and experimental groups. This was followed by calculating average scores and observing comparative dynamics. The qualitative analysis focused on interpreting students' journal

entries and analyzing their self-regulation strategies for overcoming dangers, with consideration of sociocultural and neuropsychological factors.

In this way, the study combined quasi-experimental, self-observational, and expert-analytical techniques. This approach allowed one not only to evaluate the effectiveness of educational interventions but also to explore the underlying mechanisms of personal transformation under stress.

The data collection period spanned from September 2022 to June 2023. This timeframe enabled the authors to track the development of students' safety competencies. The process involved the gradual implementation of new educational conditions, along with systematic self-assessment and expert observation. This approach was essential for ensuring the validity of the experimental results.

Research model

The procedure for the experimental formation and verification of safety competencies and reactions involved four stages. First, the authors developed a theoretical and methodological framework for the formation and verification process, based on analyzing relevant educational and neuro-oriented approaches. Second, a propaedeutic diagnostic was conducted to assess the initial readiness of the experiment participants (control and experimental groups). The third stage involved the educational process, which took place over two semesters. Finally, the post-experimental verification of competencies and reactions was carried out in both groups, followed by an evaluation and discussion. These stages are summarized in Table 1 below.

Table 1. Experimental study procedure

Stage	Procedure	Evidence
Development of the author's methodology	It was carried out through theoretical and methodological analysis of relevant research, compared with the author's pedagogical experience.	Resulted in new or modified educational conditions that required didactic implementation and verification of effectiveness.
Propaedeutic diagnostics	Conducted through an extensive author-driven check of the initial safety competencies and reactions in the experimental (EG) and control groups (CG).	Expressed as scores on each subscale (see Table 3).
Implementation of new educational conditions	Took place in the experimental group.	Routinely implemented over two semesters, with ongoing assessments and observations.
Verification of results	Verified through self-assessment using an adapted emotional intelligence questionnaire focused on stress, as well as expert evaluations.	A one-time evaluation at the end of the experiment, expressed as scores for each subscale.
Discussion of the results	Conducted through a theoretical comparison of results with outcomes from pedagogical and neuropsychological research.	Author's comparative-typological and extrapolated neuropedagogical discourse.

Source: the authors' own conception

At the start of the form-diagnostic experiment, the authors assessed the initial level of readiness to handle multimodal dangers, such as psychological stability and the ability to avoid physical harm. Subsequently, they compared these results with those obtained after two semesters of training in new educational conditions.

Based on their experience and the theoretical and methodological sources reviewed in the introduction, the authors developed a teaching methodology centred around simulations. This methodology incorporated pedagogical and neuropsychological aspects.

The educational process involved two parallel activities: 1) *simulation* (students addressed multimodal hazards and stressful situations) and 2) *self-monitoring* (students tracked their successes and failures). In the self-monitoring process, students kept a journal in which they recorded their current reactions, skills, and changes over time, continuously refining their safety protocols.

The new educational conditions were based on the authors' hazard simulation technique. This technique used multimedia to present neutral and stressful situations, which students resolved quickly. The process began with a brief theoretical course, after which students practised using a computer simulator. The simulator displayed random situations (neutral and stressful), and students responded within a short time frame.

During these simulations, instructors observed each student's behaviour and reactions to safety threats, evaluating their decision-making processes. In addition, students engaged in self-assessment. They used a self-assessment questionnaire to evaluate their safety skills, kept a journal, and improved their personal safety protocol based on their baseline (see Table 2).

Table 2. Basic safety protocol (step-by-step methodology)

Stage	Explanation
General situation assessment	Before entering a potentially dangerous situation, social workers must assess the environment to determine the level of risk. This includes identifying potential threats and evaluating the behaviour of those involved. A clear assessment helps to determine the best course of action to maintain safety.
Improving situational awareness	Situational awareness refers to the ability to perceive and understand the environment, including potential risks. Social workers must know their surroundings and observe the behaviour of people around them. Early identification of potential threats enables proactive safety measures.
Establishing psychological boundaries	Social workers must establish clear boundaries with clients to maintain a safe and professional relationship. This includes defining limits on physical contact, maintaining personal space, and setting expectations for behaviour. These boundaries are vital for both safety and professionalism.
De-escalation of the situation	If a situation becomes tense or potentially

	dangerous, social workers should use personal de-escalation techniques to calm the situation. This involves active listening, empathizing with the other person's perspective, and avoiding confrontational language or behaviour.
Developing and refining contingency plan	Social workers should have an emergency plan in place. This could include strategies such as avoidance, mutual aid, or protocols for contacting law enforcement. Refining the plan based on experience and new knowledge ensures its effectiveness in real situations.
Developing a support system	In situations where social workers feel threatened or uncomfortable, they should seek support from peers or supervisors. A solid support system is essential for managing stress and maintaining emotional well-being.
Self-regulation	Social workers should practice self-regulation to cope with the emotional demands of their work. This can involve activities such as exercise, mindfulness, journaling, or hobbies to help manage stress and maintain emotional balance.

Source: the authors' own conception

Results

The following table presents two types of results: initial and final, for both the control and experimental groups. These results are separated into internal diagnostics (self-assessment) and external diagnostics (evaluation by teachers and experts).

Table 3. Comparative results of self-assessment: Competencies and safety reactions (average score)

Aspect-component of assessment	Control group (32 students)		Experimental group (35 students)	
	Initial average	Final average	Initial average	Final average
Knowledge level	3.5	4.5	3.4	4.6
Ability to act in stressful conditions	3.2	4.1	3.2	4.2
Reaction to uncertainty	3.0	3,9	3.1	4.6
Reaction to a defined stressful situation	3.2	4.1	3.2	4.3
Ability to self-regulate	3.5	3.9	3.4	4.5
Ability for self-assessment	3.0	4.0	3.0	4.2
Need for self-improvement (keeping a journal/protocol)	2.9	3.3	3.0	4.3

Source: the authors' own conception

Table 3 shows that the initial indicators in both groups are within a margin of error (≥ 0.2), meaning they can be considered similar. The main finding, which was somewhat unexpected, is that the greatest positive change in the EG occurred not in cognitive and conscious abilities, but in reactive and reflexive skills. Additionally, there was significant improvement in students' need and ability for self-regulation and self-improvement.

This suggests that the development of constructive professional reflexes and reactions encourages students to enhance their intentions. This is reflected in their use of journals, protocols, and external signs of self-efficacy, self-development, and self-improvement while acquiring safety competencies.

An examination of the individual journals and protocols, which were updated by each student, revealed that coping strategies vary. These variations depend on individual experiences, social and cultural backgrounds, and personal neuropsychological characteristics.

The study identifies two main types of coping strategies: emotion-focused coping and problem-focused coping. Emotion-focused coping is characterized by spontaneous reactions to immediate situations, while problem-focused coping involves actively seeking solutions to stressors.

Coping strategies also differ in the degree of interaction with the stressor. For instance, nearly 35% of personal coping strategies for stress or threats were related to avoiding the stressor altogether.

Individual differences, such as personality traits, self-efficacy, and social support, also affect coping strategies among future social workers. Students with high self-efficacy tended to prefer problem-focused strategies,

while those with low self-efficacy leaned toward situational or task-specific strategies.

Further analysis of the individual protocols indicated that cultural factors influence coping strategies as well. For example, students from collectivist cultures were more likely to seek support from family and friends, whereas those from individualistic cultures preferred independent coping strategies.

Overall, the personal coping strategies of future social workers differ based on a range of neuropsychological, social, and cultural factors. Understanding these differences is essential for developing effective interventions to support the mental health and well-being of sociology students.

Discussion

This article builds upon the authors' previous research, which views coping behaviour as a component of the psychology of safety. It emphasizes personal conduct shaped by the resources available in a specific situation (Lazorko, 2017). Today, internal neurophysiological resources have not been prioritized; instead, the focus has been on balancing the use of external opportunities with internal mobilization potential. The neurophysiological foundation of this potential includes instinctive behaviours such as affective reactions, sudden physical mobilization through neuro-humoral surges, and rapid intuitive decision-making.

The present study provides additional insight into managing current dangers, such as local conflicts, pandemics, and social stress. It also addresses threats specific to certain professions or activities (Savitsky et al., 2020). The developed methodology continues the Ukrainian tradition of psycho-pedagogical training. These methods have a preventive and optimistic focus, aiming not merely to avoid danger, but to optimize and utilize existing resources and conditions.

This approach can be traced back to the works of Hegel (1977) and his followers, who explored the dialectic between potential and actuality (Rosen, 1984). With the advancement of science, the study of personality psychology, particularly consciousness and self-awareness as key resources, has become increasingly important.

The findings suggest alignment with early 20th-century Western research on the personal and neuro-subjective dimensions of coping. These earlier studies explored spontaneous, unconventional decision-making under uncertainty, often involving rapid insights and time pressure, regardless of the specific social context (Kahneman & Tversky, 2000).

A discussion of the specific results reveals a marked divergence between the acquisition of knowledge and the development of reflexive skills within the simulation-based training. Initial scores in the CG and the EG fell within the margin of statistical error, meaning they can be considered similar. However, self-assessment by students tended to overestimate their safety skills and response capabilities, whereas external assessments were more objective.

Interestingly, the knowledge component showed almost the same improvement in both groups. In contrast, the reflexive component showed the most significant growth in the EG under the new educational conditions. As noted by Keitel et al. (2011), physiological stress sensitivity decreases in medical university students during practice, as verified by neurophysiological and endocrinological data.

An additional unexpected result was the variety and individuality of daily journals and hazard-coping protocols refined by students throughout the training process. These journals demonstrated a range of professional coping styles under stress and a multimodal nature of coping strategies. This supports the idea that socially oriented deontology is influenced by a student's temperament, character, and neuropsychological profile.

In current scientific discourse, the authors of this article found comparable studies. These studies highlight the effectiveness of personalized teaching approaches. They are more effective than general instruction in developing stress and hazard coping skills (Alharbi et al., 2020).

The authors expected that competence and constructive reactions would increase through a holistic neuropedagogical approach. They anticipated that the reactive and proactive components would harmonize as much as possible. However, proactivity was more evident in the EG, not in academic knowledge but in an increased motivation for self-improvement. The authors observed that this growing need for self-improvement manifested in a stronger desire to improve personal stress tolerance protocols. Additionally, students in the EG were more likely to keep journals.

This aspect relates to the self-formation of students' personal and professional psychological space. Ukrainian scholars in current personality theories view this psychological space through the concept of one's "ego." It regulates and limits behaviour according to the principle of reality, in contrast to the principle of satisfaction. Maksymenko (2016) further elaborates on the profound concept of the inner realm of personal freedom, referred to as vital energy. This vital energy serves as the foundation for one's capacity for independent action, the freedom to choose one's unique path, and the unrestricted development of one's personality.

The authors' experiment confirmed that personal space clearly defines what is "self" and what is "not self," marking the birth of subjectivity. Furthermore, personal space shapes one's identity, enabling them to self-determine and actively choose ways to express themselves and affirm their identity, without violating personal freedom. This supports the view of Evans & Howard (1973), who suggested that individuals develop methods for equitable engagement with the social landscape through a personal psychological filter and boundary, long before neuroscience was fully developed.

Such personal space allows for the selective acceptance of external influences while protecting from destructive ones. It also fosters personal responsibility, encourages constructive social interaction, and acts as a condition for societal integration.

Conclusions

The general theoretical conclusion of this article is that personal safety primarily depends on early neuroconnections, which can be explained psychoanalytically. It is also largely influenced by environmental conditions and circumstances, both directly and indirectly. Directly, environmental conditions present a real danger. Indirectly, they are refracted through internal factors and personality traits. Didactic principles should incorporate the neuroscientific foundation of personal safety. The perception of threats at the individual level is shaped by a subjective sense of one's safety and vulnerability.

Sensitivity to threats is an important personal trait, manifested in psychological features such as sensitivity, anxiety, and aggressiveness. These traits are often linked to the invasion of personal psychological space. Psychological space includes physical, social, and psychological elements to which an individual relates, such as personal space, possessions, social connections, and beliefs. These elements become significant in psychological situations when the individual initiates self-defence, using both physical and psychological resources.

When comparing current Ukrainian practices for building stress resistance with Western research, two main aspects stand out. First, genetic parallels are evident, as Ukrainian approaches reflect the influence of well-known figures such as Assagioli (1965), Freud (1995), Maslow (1942), and Wernerfelt (1984). Second, epistemological parallels are observed with current neuroscientific theories, which tend to favour interpretive and psychodiagnostic methodologies.

Regarding the second task of this study, the conclusion is as follows: the development and modification of educational conditions for effectively forming safety competencies and constructive reactions in future social workers require the psychosynthetic didactic implementation of conscious factors. These include knowledge, experience, and situation analysis. Additionally, it involves addressing unconscious reactions, which includes training in quick responses to stress and danger.

Quasi-experimental testing of the effectiveness of the new educational conditions has shown that changing the proposed educational conditions had little effect on knowledge and theoretical methods for dealing with dangerous situations. The most sensitive area in simulation training was personal reactivity and sensitivity to situations of uncertainty or danger in the professional work of a social worker. Significant dynamics in this area increased motivation to develop and improve personal strategies for avoiding or overcoming danger. This also led to the development of a personal protocol for managing stress and danger.

These results highlight the need for further integration of neuro-oriented experiences into traditional didactics for training social workers exposed to social and/or physical danger. A comparison of statistical indicators with expected competency standards in the quasi-experiment showed that neuropsychological modules correlate more strongly with safety competencies and constructive reactions (average overall readiness score). In contrast, didactic modules, such as protocol decision-making and rational search, showed a weaker correlation.

The authors' contribution to the article lies in their exploration of new perspectives and methodologies for improving education and personal safety. They propose a novel concept for integrating reflective and competency-based mechanisms into social worker training, based on neuropsychological and socio-cognitive principles.

Their critical stance involves rethinking the classical models of personal adaptation proposed by Bowlby (2008), Erikson (1950) and Freud (1995). They approach these models through the lens of current neuroscientific views on safety as a multidimensional cognitive-affective process.

The authors argue that the traditional linear approach to shaping safe behaviour is inadequate in the face of ever-changing risks. They advocate for dynamic, neuro-socially oriented modelling of behavioural strategies.

Furthermore, the authors not only present this idea theoretically but also support it with a methodological analysis of factors found in the works

of Schwebel and Brezausek (2007) on child safety and risks. This strengthens their position and contributes significantly to the modernization of the Ukrainian system of professional education for social workers.

Research limitations

Despite the obvious value and potential of integrating neuro-social models into personal safety development, the scope of this research is primarily limited by its conceptual and theoretical nature. Additionally, there is a lack of empirical verification of the proposed models across different cultural contexts. The international significance of the findings could become more comprehensive if the authors, or their colleagues, contribute to the universality of the developed strategy. This could be achieved through a comparative analysis of how safe behaviour is formed in different societies – a promising area for future research.

The inclusion of authoritative theories, such as Bowlby's psychoanalytic attachment theory (2003) and Maslow's theory of needs (1942), provides a solid foundation for global scientific discourse. However, these theories require further empirical testing to ensure the practical validity of the results across various educational systems. Therefore, the international relevance of this work lies more in the potential of its ideas than in its completed validation.

Such research will support the integration of post-totalitarian countries into the international scientific community. The findings may be of interest to comparative psychologists and specialists in the typology of the humanities. On a factual level, the article demonstrates this significance by presenting both contractual and general provisions related to personal safety.

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