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USE OF ELECTRONIC LEARNING AS A TECHNOLOGY FOR STRENGTHENING SOCIAL-PSYCHOLOGICAL SUPPORT FOR UKRAINIAN VETERANS

The object of research is the technology of socio-psychological support for Ukrainian veterans in the process of their reintegration into civilian life through the use of e-learning methods. The research revealed a number of critical shortcomings: insufficient digital literacy among veterans (less than 40%), limited awareness of existing educational platforms (less than 20%), and the lack of an integrated state strategy for using digital tools in the field of social and psychological rehabilitation. One of the most problematic areas is the gap between veterans' needs for professional development (more than 58% want to radically change their specialty or get a first one), social support, and their actual level of access to adapted resources (no one refused the offered training opportunities), which complicates reintegration, reduces motivation for self-development, and exacerbates social isolation. The methods of systematic analysis, literary sources summarization, processing of data from official sources, and a sociological survey of 228 veterans were used. Using a mixed approach made it possible to comprehensively assess the level of awareness, educational needs, and psycho-emotional demands of the target group. The results indicate that veterans are highly interested in developing soft skills (99%), professional retraining, and self-realization. Reserves in the functioning of the support system were identified, in particular, the potential of the Prometheus, Coursera, and Duolingo platforms to provide personalized content. It is because the proposed approach has various features: flexibility, accessibility regardless of dwelling, adaptation to the cultural context, and integration of elements of social and psychological support. This creates conditions for improving the level of veterans' self-regulation, emotional stability, and professional adaptation. Compared to known support models, e-learning technologies provide scalability, rapid implementation, and the possibility of long-term monitoring of the effectiveness of reintegration measures. The increase in the number of veterans who independently wish to engage in education using digital technologies is 90% annually within the framework of the public management and administration program of Odesa Polytechnic. All respondents emphasize receiving socio-psychological support during the learning process.

Keywords: *Ukrainian veterans, e-learning technologies, socio-psychological support, reintegration, soft skills, digital education.*

1. Introduction

Global changes, such as economic crises, military conflicts, pandemics, and other challenges, have a significant impact on people's mental and emotional state, physical health, and emotional well-being. In this context, there is a need to develop effective mechanisms of social and psychological adaptation aimed at reducing stress, increasing resilience to life challenges, and supporting the process of integration into changed social conditions.

The ongoing war in Ukraine, which began in 2014, has created significant new social challenges. According to official data from the Ministry of Veterans Affairs, there are currently 493,550 combatants in Ukraine, including 25,463 residing in the Odesa region [1]. One of the key responsibilities of Ukrainian society is to ensure the successful social reintegration of veterans into civilian life. This requires addressing the consequences of combat, facilitating the transition to new social roles, and removing physical and psychological barriers to adaptation.

According to the study conducted by the Ukrainian Veterans Fund in September 2023, 49% of respondents noticed that their relatives had participated in hostilities in 2014‑2021, and 65% reported that their relatives had participated in hostilities after February 24, 2022. Respondents identified family conflicts, social misunderstanding, employment problems, and the risk of developing addictions as the main difficulties veterans face after returning home. More than 78% of the respondents identified psycho-emotional disorders, difficulties in obtaining medical care, and a lack of inclusive spaces and adapted workplaces for people with disabilities. The inconsistency of military experience with civilian life was noted by 59% of the respondents, while more than 44% mentioned the increased risk of crime among the veterans [2].

To effectively address the problems of social and psychological support, it is necessary to create a system that covers the period of active hostilities and the post-war period. It should include measures to support psychological health, adaptation, and the development of crisis management strategies.

Integrating psychological assistance with social resources is critical to strengthen social cohesion and emotional support. Digital learning platforms play a crucial role in providing social and psychological support to vulnerable groups, including veterans, by enhancing individual resilience.

Adaptation to wartime conditions is a complex process that necessitates profound shifts in values, priorities, and behavioral patterns to ensure survival under extreme circumstances. Equally challenging is the transition back to civilian life following active hostilities, which demands prolonged psychological readjustment. The socio-psychological consequences of participation in armed conflict are frequently enduring and may persist throughout a person's lifetime [3].

The process of transitioning from military to civilian life presents a range of psychosocial challenges for veterans, where socialization and identity reconstruction are central themes. It was emphasized that the level of social group engagement significantly affects veterans' psychological adjustment [4].

The authors exploring the Ukrainian experience showed that professional training and ongoing social support help the veterans and their families adapt to civilian life, especially in post-conflict societies [5].

Thus, the significance of identity, community, and targeted support systems can help to facilitate Ukrainian veterans' successful return to civilian life.

The literature highlights the long-term psychological consequences of military service, including PTSD and moral injury. Studies emphasize the importance of digital education platforms in improving learning engagement and resilience. Digital technologies are especially effective in promoting inquiry-based learning and enabling the veterans to access educational content regardless of geographic constraints. According to [6], individuals navigating adverse conditions are challenged with five fundamental tasks: interpreting the nature and implications of the crisis; actively confronting and mitigating its pressures; preserving supportive connections with significant others and potential sources of assistance; regulating emotional responses and coping with psychological distress; and sustaining a coherent social identity alongside a resilient sense of self-esteem and positive self-image.

To effectively provide psychological support, it is essential to develop an integrated model of psychological assistance capable of addressing applied psychological issues. One such approach involves offering psychological support to mentally healthy individuals during periods of life stress or transitional difficulties [7].

Mental health is a state of well-being when a person can realize their abilities, overcome stress, work effectively, and contribute to the development of the community [8] (World Health Organization, n.d.). That is, to maintain mental health, it is important to interact with the social environment, engage in useful professional and volunteer activities, and realize self-realization [9].

In this context, veterans' mental health is not only a matter of personal well-being, but also an important factor in the social well-being of society.

The authors proposed a sociocultural framework that emphasizes the integration of military and civilian identities, advocating for culturally informed social support systems to mitigate the stress of transition [10]. This perspective was supported through a systematic meta-synthesis, identified family, peer, and veteran community support as key facilitators in navigating the cultural shift from military to civilian environments [11].

Recent qualitative research on the Vet-COACH program for U.S. veterans demonstrated that shared military identity and peer-to-peer coaching can significantly enhance trust, motivation, and engagement in managing chronic health conditions [12]. The famous scientists found that adapting evidence-based interventions for veterans within the VA system improved feasibility and cultural relevance, highlighting the importance of tailoring interventions for unique veteran contexts [13].

This underscores the value of veteran-led, culturally relevant support models that could be integrated into digital learning environments for Ukrainian veterans.

When working with combat veterans, some factors that affect their psychological state should be taken into account, including: individual personal characteristics; specifics of the traumatic experience; presence and nature of childhood trauma; social patterns of behavior, including strategies and life scenarios; nature of the social environment, level of social support and assistance; opportunities for professional self-realization [14].

Understanding the specific aspects of psychological work with veterans requires consideration of the established tiers of psychological health support. These encompass social and psychological assistance and accompaniment, psychological rehabilitation, as well as integrated medical and psychological rehabilitation [15].

Moral injury is associated with symptoms of post-traumatic stress disorder (PTSD). Veterans with more severe moral injuries tend to show more PTSD symptoms, which emphasizes the need for targeted interventions [16]. Adding further depth to this understanding, highlighted that veterans with invisible injuries, such as PTSD and cognitive impairments, face elevated reintegration challenges and lower levels of flourishing [17].

Various experiences during military service, such as combat or witnessing traumatic events, contribute to the onset of moral damage. These factors affect veterans' mental health and well-being, which is important to consider in clinical settings for effective treatment [18].

While individual protective factors such as religiosity, spirituality, and a sense of purpose are often considered beneficial, they may not consistently lead to improved treatment outcomes for veterans with PTSD. The authors [19] found that these factors did not significantly influence therapy completion or benefit once PTSD had developed, underscoring the limitations of relying solely on personal resilience. In response to such gaps, authors adapted the web-based moral elevation program MOVED specifically for veterans, incorporating pilot feedback and expert guidance within the MADI framework [20]. Their work emphasized the importance of refining interventions to address culturally specific needs and preparing them for rigorous efficacy trials. These findings collectively highlighted the necessity of complementing standard evidence-based treatments with culturally responsive, peer-supported approaches. Structured digital learning platforms and veteran-to-veteran support models, in particular, may serve as vital tools for enhancing engagement and bridging deficiencies in individual coping resources.

Examined anger among veterans and service members, investigating its prevalence, underlying predictors, and associations with suicide and violent behavior. Their findings underscore the detrimental impact of unresolved anger on mental health and highlight the critical need to incorporate anger management strategies into interventions aimed at reducing the risk of suicide and violence [21].

In [22], the importance of establishing structured collaborations between military and civilian institutions to enhance the effectiveness of mental health care was emphasized. Such partnerships can be supported with the help of digital learning technologies as a means of providing social and psychological support [22]. These technologies have been shown to enhance student engagement and learning outcomes by enabling repeated practice and delivering timely feedback. According to [23] appropriate digital tools can substantially improve the quality of learning, particularly in large classroom settings.

Various digital tools support inquiry-based learning practices, focusing on increasing student engagement, collaboration, and critical thinking [24]. It should also be noted that various factors, such as socioeconomic status and digital infrastructure, affect students' ability to succeed in online learning environments. Therefore, it is important to address these inequalities to ensure equal educational opportunities for all students [25].

The highlighted importance of educators identifying and addressing social anxiety to foster greater student engagement and achievement in digital learning settings [26]. In this context, veterans may disengage from interventions if their lived experiences are not adequately represented in the instructional content. This aligns with authors who developed and piloted a mental health prevention and referral program for Ukrainian veterans and their families [27]. Created with local stakeholder input, the program trained frontline providers and emphasized cultural relevance. Pilot results suggest the approach is feasible, acceptable, and scalable for broader use in conflict-affected settings.

A notable example is a recent study that examined how suicide risk changes over time among high-risk U.S. Veterans by analyzing clinical notes using Dynamic Topic Modeling (DTM), a natural language processing method. Records from 218 suicide cases and 943 matched controls revealed five key themes: Medication, Intervention, Treatment Goals, Suicide, and Treatment Focus. Notes from cases increasingly emphasized pathology, while controls focused on supportive care. Greater topic fluctuation was seen in suicide cases, suggesting that tracking such changes could improve suicide risk detection [28].

Recent innovations in digital mental health interventions for veterans highlight the value of user-centered design and emerging technologies. A qualitative evaluation demonstrated the effectiveness of incorporating veteran and spouse feedback panels in developing the Path to Better Sleep (PTBS), a digital CBT-I program. Input from these panels significantly enhanced the clarity, usability, and relevance of the content, ensuring the program better addressed veterans' specific needs [29]. Complementing this, conducted a pilot study on self-guided virtual reality mindfulness training for veterans undergoing substance use treatment. The study found the VR-based approach both feasible and well-received, with participants reporting improved mood, reduced negative emotions, and enhanced mindfulness [30].

Analyzing data from 3,740 respondents, the authors found that stress levels were significantly higher among users who were parents, felt unsafe, or experienced isolation. These findings highlight key risk factors and demonstrate how digital tools can quickly deliver psychological support in emergencies. The study underscored the importance of scalable, culturally adapted mental health interventions in crisis settings [31].

Randomized controlled trials were examined to evaluate the effectiveness of computerized psychological interventions (CPIs) for military personnel and veterans, showing that CPIs can help reduce symptoms of PTSD and depression. However, variability in intervention design and outcomes suggests a need for standardized methods and further research to improve their effectiveness. It is important to consider the mediating and moderating effects of digital literacy and life and career knowledge in the relationship between work-integrated learning and graduate (in this case, veteran) employability. These factors affect the ability of graduates to find jobs, emphasizing the importance of integrating digital skills and career knowledge into educational programs [32].

The reviewed sources [10–32] discuss tools for improving psychological well-being, employment, and social reintegration. However, the long-term effects of these tools remain unclear. This is because most studies rely on cross-sectional data**.** Clear causal relationships between the use of digital platforms and improvements in mental health, soft skills, or social adaptation also remain unconfirmed due to the lack of experimental or quasi-experimental designs. A significant gap in the sources is the absence of culturally adapted, trauma-informed, and veteran-specific educational content, particularly in the Ukrainian context. Barriers related to digital literacy, socio-economic inequality, and limited infrastructure are insufficiently considered, even though they critically affect access and outcomes. Finally, little attention is paid to the integration of e-learning technologies into state and local support systems, as well as their impact on broader psychosocial aspects such as resilience, identity reconstruction, and sense of community belonging. The main shortcoming of existing approaches and tools is their inability to address today's wartime challenges. Ukrainian veterans face substantial differences compared to veterans of other countries and conflicts. These differences arise from limited social support, the complexity of trauma, and the specific nature of combat operations.

Thus, *the aim of the research is* to identify patterns and to develop a methodology for engaging Ukrainian veterans in digital learning platforms, with a focus on their level of awareness, usage models, and perceived relevance for retraining and employment aspirations after military service. The research seeks to assess the potential of e-learning technologies in fostering key psychosocial competencies, such as adaptability, emotional resilience, and self-regulation, which contribute to successful reintegration into civilian life and enhance overall quality of life.

2. Materials and Methods

The object of the research is the system of social and psychological support for Ukrainian veterans during their reintegration into civilian life via the use of e-learning technologies

This study followed a three-stage mixed-methods design:

1. A literature review using databases like Google Scholar, Science Direct, and ResearchGate, with keywords including "veterans' socio-psychological support" and "digital learning tools".

2. Analysis of open-source data from national surveys and governmental reports.

3. A survey was conducted within the UK-Ukraine Twinning Grants Scheme project, involving 228 veterans who were asked about their experience and preferences in digital education.

The survey questionnaire comprised five thematic sections: demographic profile, life perspectives, preferred learning formats, awareness of digital tools, and satisfaction with local governance [33].

The target research population consisted of Ukrainian veterans who were mobilized on February 24, 2022, were in the military service earlier, were mobilized since 2014, and are now demobilized, and ATO members who are still at the frontline. Inclusion criteria required that participants be over 18 years of age, have served in the Armed Forces of Ukraine, and be willing to provide informed consent for participation. Veterans currently on active duty at the front were partly excluded unless they were accessible and voluntarily chose to participate while on leave. This selection aimed to ensure that respondents could meaningfully reflect on their experiences, current psychosocial needs, and familiarity with digital learning technologies.

The survey involved 228 veterans, 91.7% of whom were men and 8.3% were women. Among those surveyed, 55.3% of respondents were mobilized on 24 February 2022, 24.1% had served in the military before, 34.6% indicated that they had been mobilized since 2014 and are now demobilized, and 12.3% of participants are still at the front [33].

To study a modern veteran's portrait, were interested in finding out modern veterans' age, gender, marital status, number of children, etc. The age profile of military personnel was as follows: 33.3% were aged 30‑39, 24.1% were aged 40‑50, 19.3% were aged 20–25, 14.5% were aged 26‑30, and 8.3% were aged under 20 or over 60 [33].

Before the war, 9.6% of respondents worked in the public sector, 30.3% were in the military, 14.5% worked in business, and 5.8% were engaged in public activities. The survey showed that approximately 83.8% of the respondents were civilians before the war, most of them working in the public sector. 21.9% of the respondents came from cities of district significance, 27.6% from urban-type settlements, 35.1% from cities of regional significance, and 15.4% from villages in Ukraine. The geography of the respondents' residence included 16 regions. Among the results obtained, the following regions had the highest number of respondents: 30.3% from the Mykolaiv region, 27.6% from the Odesa region, 6.1% from the Lviv region, 4.8% from the Volyn region, 2.2% from the Kirovohrad region, 1.8% from the Dnipropetrovsk region, 1.3% from the Zaporizhzhia region, 1.6% from the Kyiv region,

6.1% from the Kherson region, 1.3% from the Kharkiv region, 1.3% from the Donetsk region, 0.4% from the Rivne region, 0.9% from the Vinnytsia region, 2.6% from the Ivano-Frankivsk region, 2.2% from the Khmelnytsky region, and 0.9% from the Chernihiv region [33].

To analyze the data, the methods of mathematical statistics and comparison were used.

Participation in the survey was voluntary and anonymous. The survey was previously approved by the ethics committee of Odesa Polytechnic. The participants gave their informed consent to participate in the study. The respondents were informed about the purpose of the study and could withdraw at any time.

3. Results and discussion

After demobilization, veterans face problems related to the lack of a built-in system of physical and psychological recovery, re-socialization, education and retraining, access to public administration, and financial support.

In 2024, the Ukrainian Veterans Foundation conducted an online survey with 1,025 veteran respondents. The goal was to identify the current needs and challenges faced by veterans upon returning to civilian life. Over half of respondents (59.8%) reported a need for financial assistance, indicating widespread economic hardship among veterans. The quality of medical services was a major concern, with 46.9% expressing dissatisfaction or reporting being denied care. A majority (52.6%) considered emotional instability very likely after returning from war, emphasizing the importance of psychological rehabilitation. Only 5.4% were fully satisfied with the legal support they received, while 38.7% rated it at the lowest possible level, pointing to significant gaps in access to justice. While 68.8% expressed interest in starting a business, only 9.4% had already done so, highlighting the need for greater support for veteran-led businesses. The lack of inclusive environments and accessible workplaces for people with disabilities remains

a serious issue, with 55.8% viewing it as very likely to impact their reintegration. The report emphasizes the need for a comprehensive approach to veteran support – improving healthcare and psychological services, enhancing legal assistance, fostering entrepreneurship, and ensuring effective social integration [34].

After returning to civilian life, veterans can take on various social roles to ensure their well-being, including working as employees, employers, or self-employed. The choice of a suitable field of employment largely depends on their awareness and informed approach to professional choice. In this process, a key role is played by professional rehabilitation specialists who conduct questionnaires, tests, interviews, analyze the labor market, help in finding institutions for advanced training, and inform about business opportunities.

The survey of respondents about their plans after mobilization showed the following results (Fig. 1). Thus, 33.8% of the respondents wanted to return to their old jobs after the war, 15.8% wanted to remain in the military, 19.3% wanted to start their own business, 16.2% wanted to get a new specialty, 9.2% wanted to work in the community in public authorities, etc. [33].

Learning new skills and knowledge can be an integral part of the rehabilitation process that helps veterans return to normal life after participating in combat. Thus, training plays a key role in the process of a veteran's adaptation to life after demobilization. It ensures the preservation of professional efficiency, opens up new opportunities for personal and career development, promotes social integration, and increases self-confidence.

The analysis of the survey results (Fig. 2) showed diverse professional interests among respondents. A total of 47.7% sought to develop in their professional field. Another 13.6% expressed interest in military education. Starting a business in trade attracted 29.4% of respondents. Public administration was chosen by 16.7%, while 12.7% preferred the manufacturing sector. The IT sector appealed to 8.3% of participants. Finally, 1.2% indicated interest in public activities and other areas.
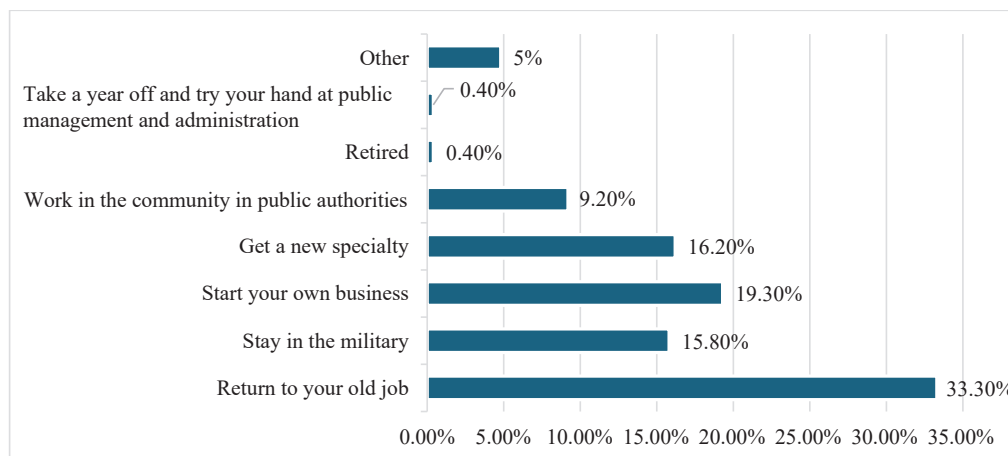

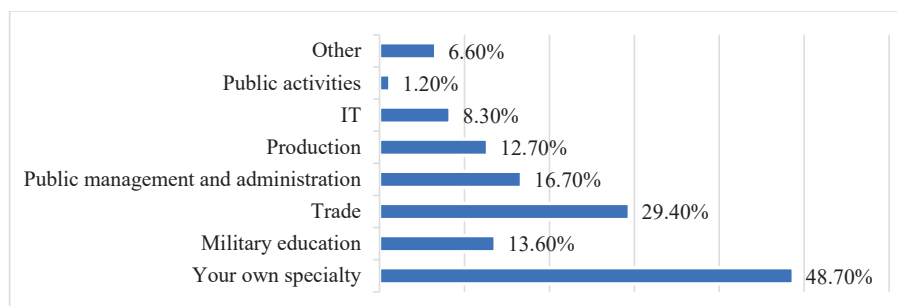**Fig. 1.** Plans of servicemen after demobilization

Fig. 2. Areas in which veterans want to develop

To support the veterans' professional adaptation, Ukraine has a state system of social, educational and psychological programs. This system includes training courses, obtaining licensed professions, introducing the veteran business brand "Created by Defenders" grant support, and online courses on career guidance and job search [35].

In addition to state programs of social and psychological support for the veterans, it is advisable to actively introduce digital learning technologies as a tool of social and psychological support that facilitates their adaptation to civilian life. One of these tools is online platforms. These platforms provide an opportunity to acquire new knowledge and competencies, which contribute to the successful integration of veterans into society. Due to specialized courses and training programs, the veterans can learn new professions, expand their career prospects, find employment, or develop their own businesses. This not only increases their competitiveness in the labor market but also contributes to their emotional well-being and personal fulfillment.

Online education platforms offer a wide range of courses in various disciplines focused on self-education. The programs include interactive components such as online lectures, practical exercises, tests and other learning materials. Below are key online platforms that may be useful for veterans (Table 1).

The level of familiarity with learning platforms showed a negative result. Most veterans were not familiar with any platform (65.5%). Among the most common ones (Fig. 3), they named Prometheus (18.4%), Udemy (11%), and Coursera (7%).

The level of the veterans' familiarity with learning management systems is critical (72.8%). Only 10.1% of the respondents were familiar with Moodle, and 8.8% were familiar with Canvas Network (Fig. 4).

Systemic solutions in the organization of the educational process contribute to the creation of a safe, clear and structured learning environment for students, in our case, veterans.

Videoconferencing and webinars play an important role in the digitalization of education, allowing for real-time meetings.

The survey of veterans showed that Zoom (71.1%) and Skype (53.9%) are the most popular, followed by Google Meet (29.4%) (Fig. 5).

Table 1

Analysis of online learning platforms

| Platform	Country and year of foundation	Main areas of study
Coursera	USA, 2012	STEM, data science, business analytics
OUM (Open University of the Maidan)	Ukraine, 2014	Civic competencies, sustainable development
Prometheus	Ukraine, 2014	IT, marketing, project and financial management
EDX	USA, 2012	IT, business, blockchain, marketing, management and leadership
Udacity	USA, 2011	IT, machine learning, Open Data, Big Data
Udemy	USA, 2010	Marketing, foreign languages, project management, IT
EdEra	Ukraine, 2016	Social sciences, project management, and public administration
Khan Academy	USA, 2004	Courses in various academic disciplines
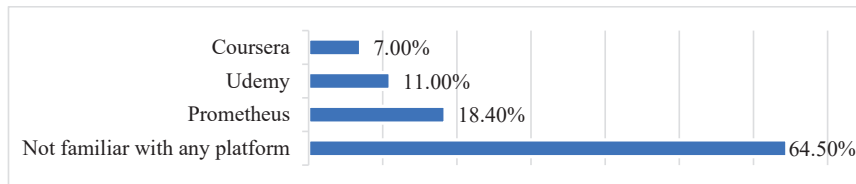
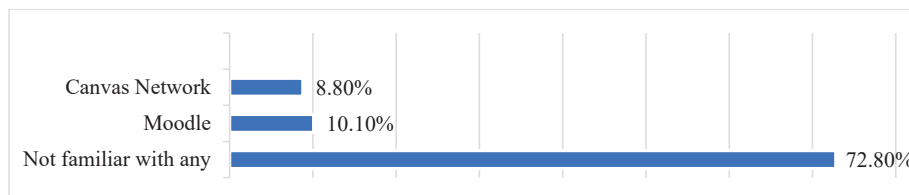**Fig. 3.** Level of familiarity with learning platforms

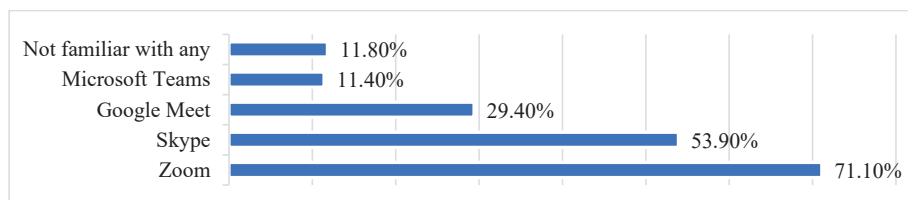**Fig. 4.** Level of familiarity with learning management systems

Fig. 5. Level of familiarity with video conferencing platforms

Among veterans, the most common platforms for storing information were (Fig. 6) Google Doc (63%), Dropbox (37.3%), and Google Classroom (26.3%).

The digitalization of education is impossible without the use of mobile learning applications and interactive simulators that provide the ability to learn at a convenient time and place. These tools illustrate different approaches to learning and can encourage professional developers to create new innovative educational products.

Most respondents were not familiar (Fig. 7) with mobile applications that can be used in the learning process (64%). The most well-known application is Duolingo (26.3%).

The development of new skills, including soft skills, through online platforms (video conferences with experts, online simulators) can also serve as a tool for social and psychological support for veterans.

Respondents would like to improve. The following data was received. Thus, 53.1% of respondents would like to master public speaking skills, 53.1% conflict management skills, 50.9% effective communication skills, 44.3% project management skills, 32.5% starting their own business, running a sole proprietorship, 27.2% emotion regulation, and 9.2% managing NGOs (Fig. 8).

Local authorities, universities, and veterans' hubs should be involved in introducing veterans to online learning platforms as a source of professional development, psychological relief, and new competencies.

It should be noted that the study has some important limitations. Although 228 Ukrainian veterans participated in the research, the sample is limited geographically. Eight regions of Ukraine were not included in the survey as they were either occupied or partly occupied. This limits the possibility of generalizing the results to all the Ukrainian veterans.

As for the overrepresentation of male veterans (91.7%) it should be noted that such a full-scale invasion has been the first one since 1939. Most part of the male veterans were or still are in the Armed Forces of Ukraine, while women (more than 95%) are keeping the civil front.

Another important limitation is the lack of longitudinal data, which restricts conclusions about the long-term efficacy of digital tools. It should be noted that authors have recently started to study the influence of digital learning tools on Ukrainian veterans' adaptation to social life after demobilization. In research was considered that a priority for future research should be designing longitudinal studies to track veterans' engagement with digital learning tools over time and its sustained effects on psychosocial well-being, employment, and reintegration outcomes.

Moreover, it should be noted that the cross-sectional design of this study does not allow for establishing causal relationships between the use of digital learning tools and psychosocial outcomes. Therefore, a promising direction for future research is to apply experimental or quasi-experimental methods, such as conducting pilot randomized controlled trials or using matched comparison groups. This would make it possible to more robustly assess the impact of targeted digital interventions on Ukrainian veterans' mental health, soft skills development, and successful social reintegration.
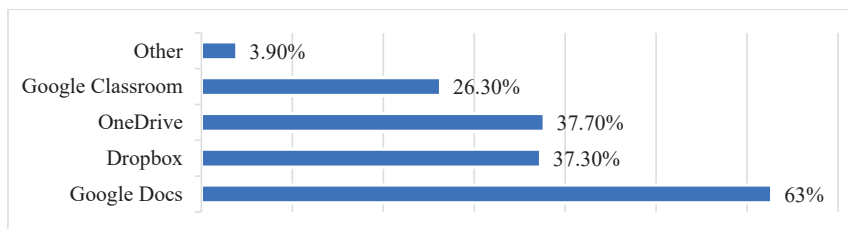

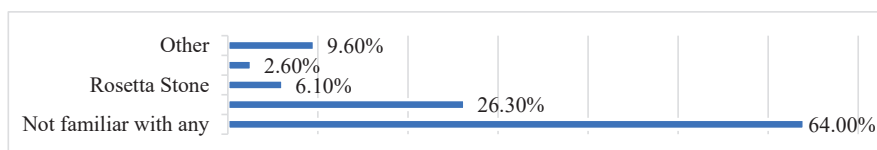**Fig. 6.** Level of familiarity with information storage platforms

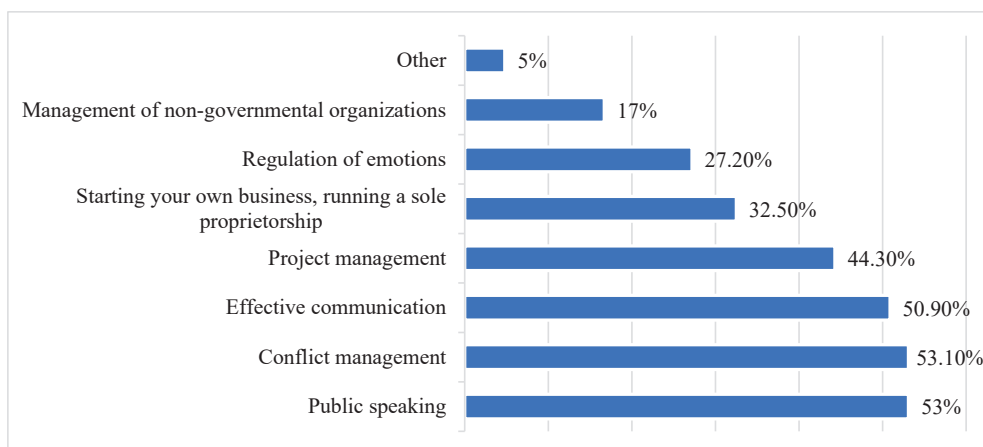**Fig. 7.** Level of familiarity with mobile applications

Fig. 8. Skills that respondents would like to improve

Despite the limitations of the research results, online educational platforms can play a key role in Ukrainian veterans' social and psychological support, contributing to their successful adaptation to civilian life. These platforms provide a wide range of resources that help veterans not only acquire new knowledge and professional skills but also provide opportunities for emotional recovery and the development of self-regulation skills.

In particular, the training programs allow Ukrainian veterans to:
– effectively master new professions and increase their competitiveness in the labor market;
– receive psychological support through specialized courses aimed at overcoming stress, developing emotional resilience, and improving overall psychological well-being;
– develop skills of self-reflection and emotion management, which are important for adapting to new social conditions;
– to take advantage of entrepreneurship and self-employment opportunities with the help of courses in business planning, financial literacy, marketing, management, and administration.

Online platforms can provide access to high-quality educational materials regardless of the veterans' place of residence, creating conditions for their integration into society, restoring self-confidence, and realizing their personal potential.

The results obtained are distinguished by a comprehensive combination of e-learning technologies with elements of social and psychological support, which ensures their practical significance for Ukrainian veterans' reintegration. The proposed approach allows for the simultaneous satisfaction of needs for professional retraining, soft skills development, and emotional stabilization, creating conditions for long-term adaptation.

Compared to known studies, our results confirm the importance of social interaction for adaptation [4], the importance of professional training [5] and the socio-cultural integration of identities [10]. At the same time, they expand existing approaches by demonstrating that digital platforms can be a key environment for the formation of educational and social resources, and their adaptation to the Ukrainian context [27] makes support more accessible and scalable.

Thus, the research findings not only confirm previously known trends but also refine them by proposing a model specifically adapted to Ukraine's unique conditions and contemporary challenges.

The primary limitation of this research lies in the issues related to the external validity of its conclusions beyond the national context. Future replications should take into account variables such as the duration of hostilities, the degree of veterans' involvement, the severity of psychological trauma, educational background, and readiness for reintegration into civilian life.

The stage of the war and the composition of respondents also significantly affect the outcomes. For instance, at the beginning of the war, the study involved respondents with higher education (in some cases, two master's degrees – 90% of respondents), whereas by the third year of the war, half of the participants lacked any formal education, which substantially altered the statistical results.

It is important to emphasize that the international community has not previously faced a conflict of comparable complexity, which generates an unprecedented set of influencing factors and analytical constraints.

Further research should explore in greater depth how participation in structured digital education programs can specifically contribute to long-term psychological well-being and successful reintegration. A promising avenue for continued investigation involves studying digital literacy and mobile learning initiatives aimed at fostering the long-term psychological well-being and reintegration of Ukrainian veterans.

Moreover, it is crucial to focus on culturally adapted educational content for veterans such as courses in Ukrainian and foreign languages, soft skills development, and trauma-informed design approaches.

4. Conclusions

Digital learning technologies represent a vital solution to the multifaceted challenges faced by Ukrainian veterans during their reintegration and readjustment to civilian life. These technologies not only provide accessible pathways for acquiring new skills but also offer essential emotional and psychological support. Through digital learning platforms, veterans can enhance their self-efficacy, foster social integration, and regain a renewed sense of purpose. It is emphasized that the primary hypothesis of the study was the search for ways of socio-psychological support of Ukrainian military personnel (and later veterans) through "non-military" and "non-psychological" communication. The military identify the key feature of the proposed technology in the need to "switch" from performing combat tasks to educational tasks without "intrusive" psychological assistance.

All respondents (100%) emphasized that participation in educational processes provided tangible psychological assistance, particularly during the early months of the war. Approximately 15.8% of respondents identified 1.5–2 years of study as an effective method of psychological relief during military service, while 43% noted the benefits of short-term online learning (up to 12 months).

The potential for individualized and adaptive learning solutions enables the development of more flexible education tailored to the specific needs of veterans, regardless of their prior experience or location. Such a personalized approach is crucial in accommodating the diverse backgrounds and expectations within the veteran community. The researchers' comprehensive approach to socio-psychological support involves engaging Ukrainian veterans in short-term entrepreneurship and business development courses (1–3 months), participation in formal educational programs (bachelor's and master's levels), and continued informal interaction following education through community clubs (e. g., fishing, business networking).

For policymakers and stakeholders, the study's findings indicate that integrating digital education into broader veteran support initiatives can substantially enhance reintegration outcomes. This includes strengthening collaboration among government institutions, higher education establishments, veteran support centers, and technology providers.

By leveraging the potential of digital learning technologies, Ukraine can build a more inclusive, resilient, and supportive environment for its veterans.

Acknowledgments

Conflict of interest

The authors declare that they have no conflict of interest in relation to this research, whether financial, personal, authorship or otherwise, that could affect the research and its results presented in this paper.

Financing

Data availability

Use of artificial intelligence

The authors confirm that they did not use artificial intelligence technologies when creating the current work.

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