

# Ongoing Professional Growth for University Educators Amid Martial Law Conditions

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**Abstract:** Continuous professional development is a determining factor of quality higher education. However, under martial law, the focus of educational institutions is shifting to security measures, which jeopardises the professional growth of the teaching staff. Our study aimed to determine the state of continuous professional development compared to the pre-war period to identify motivational factors and obstacles to professional development related to the war. The study used induction, deduction, synthesis, questionnaires, quantitative comparisons, and generalisation methods. The study was based on a survey of 305 teachers from various higher education institutions in Ukraine in 2021 and 2023. The study's results revealed a decrease in the number of hours of continuing professional development after the introduction of martial law compared to the pre-war period. An inverse correlation between teaching experience and the number of hours of CPD has been proved. Different motivation factors for professional development among different age groups and academic achievements are identified. The popularity of skills within the framework of continuing professional development of teachers is determined, including work with platforms for distance learning and management and planning consulting activities. The main obstacles to high-quality professional development of teachers are analysed, including interruption of the educational process and adaptation of curricula to martial law conditions.

**Keywords:** consulting, consulting services, consulting activity, consulting activity management, consulting activity design, higher education system.

## Introduction

Continuous professional development is a critical factor in the quality of student training and improvement of the higher education system. Employers' requirements for employees' professional skills have changed in today's society. The labour market highly values not theoretical professional knowledge but competences that develop the creativity and flexibility of specialists and help them adapt to new conditions of professional activity, which are often changing in the modern world. That is why higher education institutions pay special attention to the continuous professional development of teachers. However, under martial law, higher education institutions face numerous challenges that complicate the educational process and force them to find compromise solutions in favour of providing quality training. In such circumstances, due to the lack of time, funds and opportunities, the training of teachers has become much more complicated and, in some progressive issues, does not meet generally accepted standards. That is why it is essential to look for quick and effective solutions that would help improve continuous professional development under martial law.

## Literature review

Continuing professional development is an essential component of the modern educational system, and educators and researchers give it a great deal of importance. The authoritarian teaching method, which focuses on the teacher's professionalism, experience, knowledge and established teaching principles, is considered outdated and ineffective [1]. Experience and knowledge are highly valued. However, it is more important to train a qualified specialist – a student – through a high level of learning and mastery of skills to apply knowledge in practice [2]. That is why the leaders of higher education institutions promote professional development. Scientists study methods of increasing motivation and means of encouraging professional development, investigate the impact of different approaches to teaching and departmental principles to promote continuous development among teachers [3, 4, 5].

Continuous professional development is multi-component and complex and includes teaching by modern requirements, development of new pedagogical strategies and methods, and reforming the policy of higher education institutions. Determining the effectiveness of a teacher's professional development is based on academic performance, the student's socio-cultural development, and the teacher's scientific and pedagogical achievements. The effectiveness of professional development also depends on the policies of the higher education institution, class schedules, curricula, logistics, and support for teacher autonomy in choosing teaching methods [6, 7]. Modern CPD includes both offline and online formats. Offline methods include workshops, conferences, lecture and practical skills courses, international internships, and roundtables. However, after the COVID-19 pandemic, the popularity of online courses, lectures, seminars and other methods has increased [8]. Therefore, digitalisation is essential in the higher education system, and its methods are being actively implemented in educational institutions' teaching and learning activities [9]. Scientists are studying the impact of information technology on the educational process and the formation of professional competences of students and teachers as part of continuous professional development [10, 11]. The development of information technology allowed us to cope with the crisis of the education system during the COVID-19 pandemic by introducing distance learning, which is being actively implemented after the quarantine was lifted. However, the higher education system is constantly facing various challenges, one of which is martial law, as the number of conflicts in the world has been increasing in recent years despite the development of technology.

The Russian-Ukrainian war has become the most significant armed conflict in Europe, and scholars are exploring its impact on the quality of higher education. Gaïnd et al. [12] emphasise the difficulties of teaching in the face of danger, uncertainty and stress associated with war and note the significant efforts of Ukrainian teachers to continue teaching and research despite the situation's complexity. Kretzmer and Ronen [13] describe the global experience of reducing negative factors on students' psychological state and the educational process. Ukraine, being in a state of war, is in the process of integrating into the European Union and implementing reforms, including in the higher education system, but martial law significantly complicates this process.

Ukrainian scholars also pay considerable attention to the crisis of the higher education system in Ukraine, which is related to the introduction of martial law. Kaplia et al. [14] described the education sector as the most affected by the Russian-Ukrainian war and explored crisis management methods that would optimise the work of higher education institutions. The authors demonstrated that in the active phase of the war, most efforts are devoted to security, while such functions as recruitment and curriculum organisation need to be improved. Zinchenko et al. [15] emphasised the negative impact of air raids on the organisation and quality of education, which causes interruptions in the learning process. Another aspect is the stress that arises from rocket attacks, air raids, being in a shelter, and loss or separation from loved ones due to hostilities.

Higher education institutions in Ukraine face different challenges during the war, depending on their location. Institutions under occupation moved to other regions of the country whenever possible, losing material and technical support and part of their staff. Universities near the contact line also moved to safer cities or organised distance learning. Some institutions kept some equipment [16]. In the rear regions, educational institutions are in more favourable conditions. However, challenges such as creating safe shelters, air raids, rocket attacks, and lack of funding also negatively affect the quality of the educational process.

Under such conditions, teachers' continuous professional development is threatened, as teachers' efforts are aimed at adapting the educational process to the pre-war situation as much as possible. The organisation of the university's work under martial law, as well as the stress of the war, increases the workload and causes fatigue among the teaching staff. As a result, there is a lack of internal resources and time for continuous professional development among teachers.

Our study aimed to determine changes in continuous professional development compared to the pre-war situation, identify motivational factors among teachers, and identify obstacles to the professional development of teaching staff under martial law.

## Research methods

We added questionnaire, informed consent and description of control bias measures. We did not conduct in person interviews, but our survey included open-ended questions, so in addition to quantitative, we used qualitative research methods. The survey was conducted after obtaining mandatory informed consent from respondents, which appeared immediately upon opening the Google form. Only after agreeing to the terms of the survey were the results taken into account. No special ethics committee was held.

We used induction, deduction, synthesis, questionnaires, quantitative comparisons, and generalisation methods to achieve the goal. A confidential survey was conducted through an online Google survey among 305 teachers from 59 higher education institutions in Ukraine of various professional orientations and locations in February–June 2024. There were 162 women (53.1%) and 143 men (46.9%), averaging  $42.4 \pm 5.3$  years. The survey was conducted in compliance with ethical standards, and the survey was conducted only after the respondents consented to publish the results. No personal data was disclosed. An example of the questionnaire is provided in Appendix 1. Appendix 2 contains the characteristics of the respondents: age, teaching experience and academic degree. The survey results were analysed using the quantitative comparative method. The groups were compared using Student's t-test for unrelated populations. Pearson's correlation coefficient was determined to specify the relationship between teaching experience and the number of hours of continuing professional development. Statistical calculations were performed in Microsoft Excel. The results were presented in the form of tables and graphs.

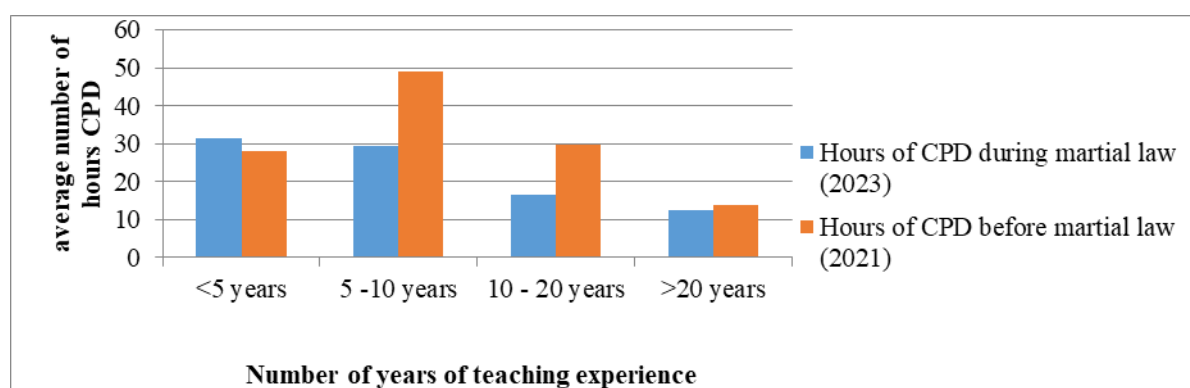
## Results

This study is being conducted to improve the continuous professional development of teachers. This study is voluntary and anonymous. Your personal data will not be disclosed. To participate in this study, you must sign an informed consent form by checking the "I agree" box. You may withdraw from the survey at any time without consequence. The results will be published in summary form.

To control for internal errors in the qualitative analysis of the open-ended survey responses, a non-biased assessment by the co-authors of the survey results was created. Before processing the results, the data were compared after discussion. Disputed options or single answers were highlighted in the column "Others". The open-ended response data were compared with the quantitative results to increase objectivity.

The introduction of martial law has led to a crisis in the higher education system, including the continuous professional development of teaching staff. However, the importance of professional development stimulates the search for effective teaching methods despite the difficult conditions in times of war. In our study, we determined the current state of professional development by surveying 305 teachers from 59 Ukrainian universities.

We analysed the annual number of hours of continuing professional development for higher education teachers after the introduction of martial law in 2023 and before the introduction of martial law in 2021. The average values were compared with each other. We determined the relationship between teaching experience and hours of CPD in pre-war and wartime. The results are presented in Figure 1.

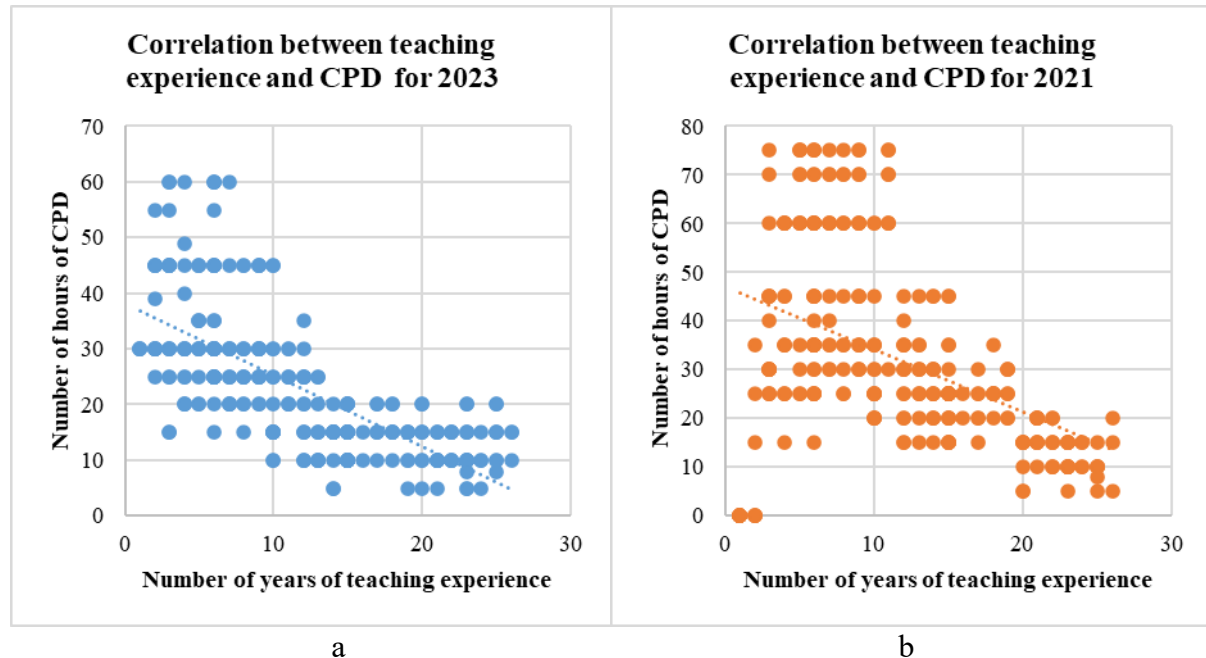


**Figure 1.** Continuing professional development (CPD) of teachers in 2023 and 2021

Source: created by the author based on a survey of 305 teachers

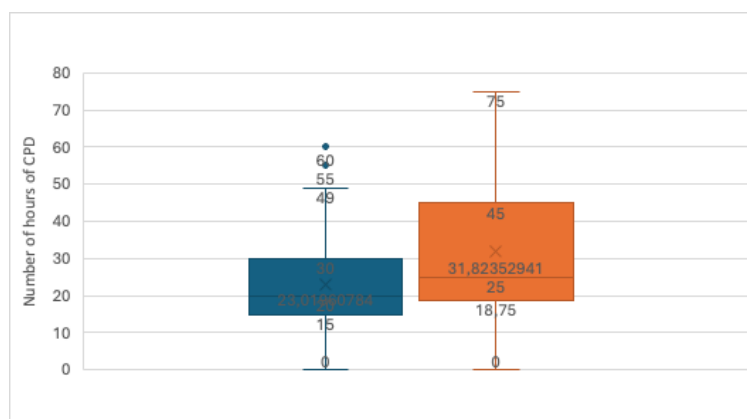
As can be seen from the figure, after the introduction of martial law, the number of hours of CPD decreased, especially for teachers with 5 to 20 years of teaching experience. The lower number of hours of CPD in the group of respondents

with less than 5 years of experience was explained by the lack of CPD for those teachers whose experience was shorter than the duration of martial law. The determination of the correlation between the length of service and the number of hours of continuous development indicated a moderate inverse relationship for the period after the outbreak of war  $r = -0.70$  ( $p < 0.05$ ). A medium inverse relationship for the pre-war period  $r = -0.45$  ( $p < 0.05$ ) (Figure 2). These results indicate a decrease in the number of hours of CPD among teachers with more teaching experience. Thus, teachers with less teaching experience use more CPD opportunities.



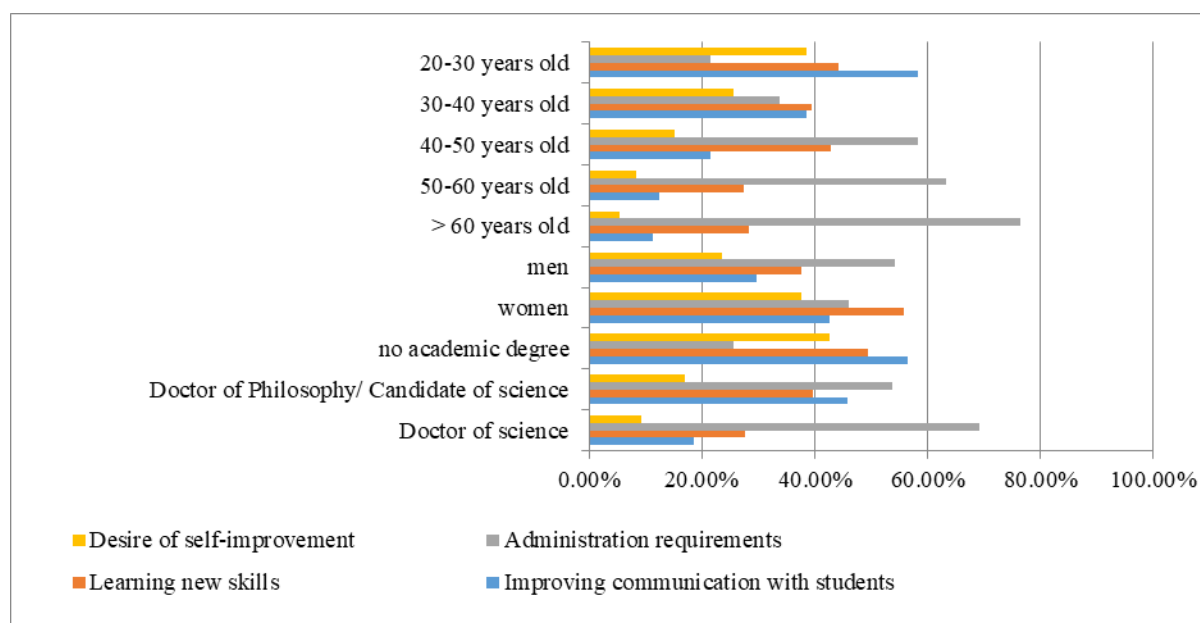
**Figure 2.** Correlation analysis of CPD and teaching experience in 2023 (a) and 2021 (b)

The survey results indicated a negative impact of martial law on continuous professional development, which manifested in a decrease in the number of hours of professional development after the start of the war from 31.9 hours to 23.1 hours (Student's  $t$ -test = 6.59) (Figure 3, Appendix 3).



**Figure 3.** Comparison of respondents' CPD hours in 2023 (blue) and 2021 (orange)

To determine the reasons for the decrease in the number of hours of training for professional development among teachers, a survey was conducted, which included the following questions: “What motivates you for professional development?”, “What skills would you like to learn as part of continuous professional development?”, “What CPD methods prevailed among teachers in the pre-war period?”, “What CPD methods prevail during martial law?”, “What, in your opinion, hinders the quality of professional development of teachers during martial law?”. The survey results are presented in Figures 4, 5, 6, 7.

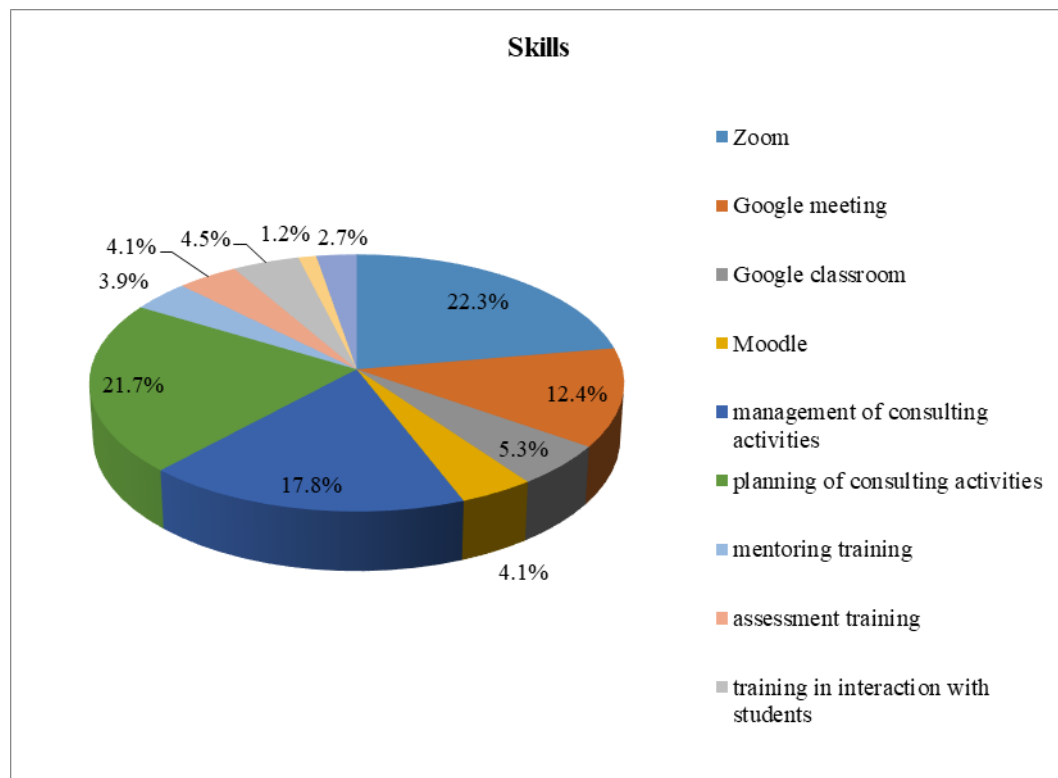


**Figure 4.** Motivation of higher education teachers for continuous professional development depending on age, gender and academic degree

Source: author's development

As can be seen from the graph, the most common motivation for continuing professional development was the administration's requirement, especially among the 40-50, 50-60 and over 60 age groups. Moreover, it was the respondents aged over 60 who most often chose “administrative requirements” as the primary motivating factor. The pattern was similar regarding academic degrees: respondents with higher degrees were likelier to choose “administrative requirements” as their main motivational factor. Instead, the desire for self-improvement and better communication with students was the least popular among doctors of sciences and teachers over 50. This can be explained by their high level of theoretical and practical knowledge in teaching and extensive experience in communicating with students. Such responses indicate the authoritarian nature of teachers with a high academic degree and teaching experience and their self-confidence. In contrast, numerous student surveys in other authors' studies have noted the ineffectiveness of authoritarian teaching methods with low student engagement and learning [17].

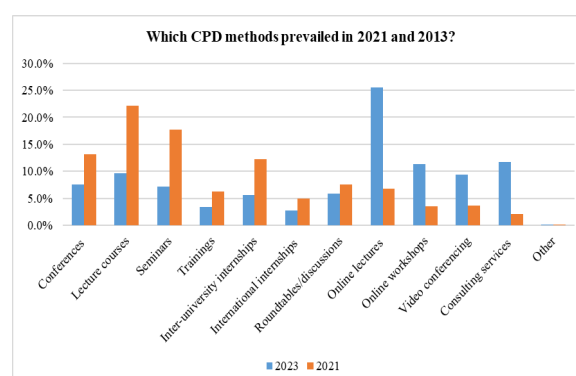
Acquiring new skills was popular among all respondents and accounted for an average of 27.5% to 55.7% of the selected answers. When choosing the skills respondents would like to learn, digital technologies prevailed, namely distance learning platforms Zoom, Google Meeting, Google Classroom, and Moodle, which accounted for 44.1% of the answers. 39.56% of respondents would like to improve their knowledge of consulting opportunities, management and design of consulting activities. To a lesser extent, respondents chose training on effective mentoring, workshops and student interaction. Fig. 5 shows the structure of the selected skills within the framework of continuing professional development among 309 lecturers.



**Figure 5.** Choice of skills among higher education teachers  
Source: created by the author based on a survey of 305 teachers

This structure of popular skills demonstrates the relevance of distance learning during martial law. A new trend is the prevalence of consulting in the continuing professional development of teachers due to more convenient planning of time and content for learning, as well as the possibility of increasing access to consultants and a personal approach to learning. Significant interest in managing and planning faculty consulting activities is driven by the need to adapt curricula to frequent anxieties to reduce faculty workload and increase student self-study, which requires increased teacher availability under martial law.

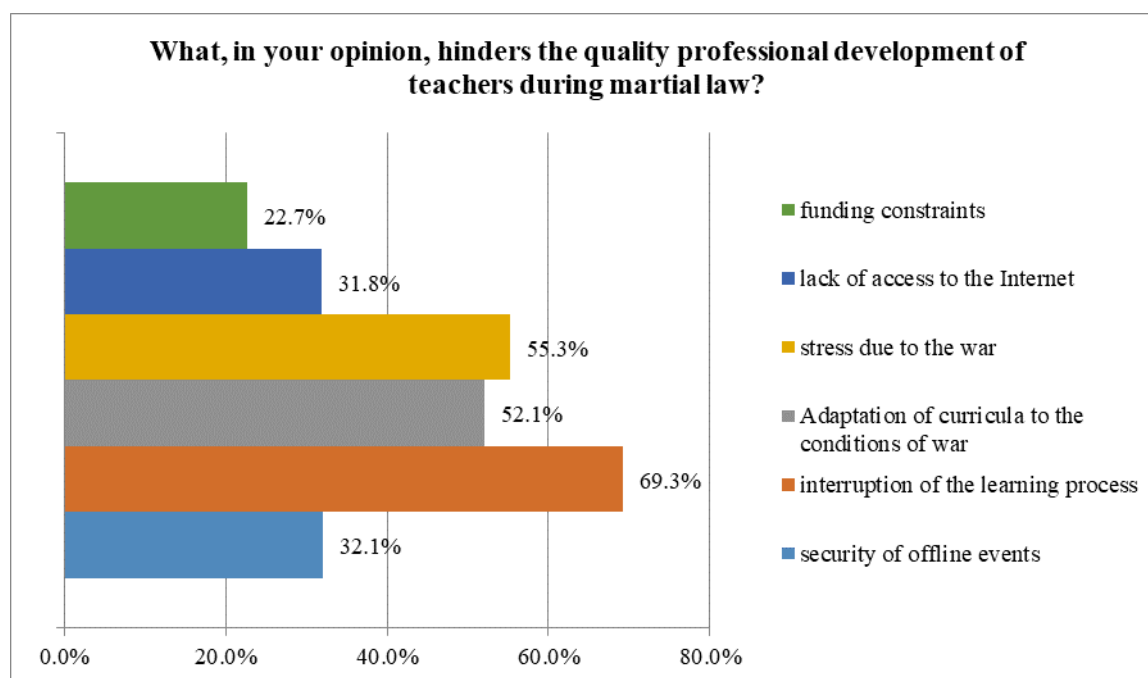
A comparison of the methods of professional development used in pre-war and wartime revealed the prevalence of online learning methods after the introduction of martial law. The decrease in face-to-face conferences, inter-university internships, roundtables and training is due to the security situation, which requires limiting events with many people. The decline in international internships is due to restrictions on travelling abroad for citizens subject to mobilisation and the insufficient financial capacity of educational institutions. After the introduction of martial law, the demand for consulting services that allow you to choose the most favourable time for study and apply a personal approach has increased (Figure 6).



**Figure 6.** Comparison of the prevailing CPD methods for 2023 and 2021

Improving communication with students was a motivating factor for most respondents aged 20-30, which indicates that this group has little teaching experience and the importance of improving their teaching skills. At the same time, for the age groups of 20-30 and 30-40 years old, as well as in the group of teachers without a degree, the factor of self-improvement was also chosen as one of the most important. This trend indicates young teachers' ambition to improve their pedagogical and scientific skills [18].

When analysing the subjective assessment of teachers regarding obstacles to quality professional development under martial law, the following factors were identified: increased workload on teachers due to changes in curricula, interruption of the educational process due to air raids, stress, funding constraints, lack of access to the Internet, and the safety of offline events (Figure 7).



**Figure 7.** Obstacles to quality professional development of teachers under martial law  
Source: created by the author based on a survey of 305 teachers

According to the teachers, the most significant obstacle to the quality of professional development is the interruption of the educational process due to frequent air raids and rocket attacks. Adapting curricula to war conditions includes an increase in the amount of material required for students to work independently, which increases teachers' workload as it requires the development of teaching materials. Thus, the increased workload on teachers due to the development of materials for independent study for students, interruption of the educational process by rocket attacks and air raids, and stress due to the war reduces teachers' motivation for professional development. Another factor is the reduced pressure from the administration to attend mandatory CPD courses, which is a major motivating factor for teachers with extensive teaching experience and a high academic degree.

In our opinion, despite the challenges of martial law, it is not advisable to reduce the requirements for continuous professional development of teachers by the management of higher education institutions, as this leads to a decrease in the quality of education, which is negatively affected by martial law. Instead, the professional development of teachers should be stimulated by adapting the curriculum to reduce the workload of teachers. In order to reduce the workload of teachers, consulting activities for both student education and continuous professional development of teachers is advisable [19]. Our study revealed the absence of training in dealing with the stress caused by military operations among the popular skills observed among teachers and students. The questionnaire revealed different priority areas of professional development among different age groups of teachers and their academic degrees, which justifies the expediency of supporting the autonomy of choosing courses and training at the requests of the teaching staff.

The study was limited by the lack of an objective assessment of the effectiveness of continuing professional development in determining student satisfaction and academic performance.

## Discussion

The results of our study revealed the negative impact of martial law on the number of CPD hours and teachers' motivation. The literature confirms the war's negative impact on teachers' continuing professional development in Ukrainian higher education institutions. However, it emphasises that despite the difficult conditions, teachers improve their skills and develop psychological skills to support students' moral and patriotic spirit [20]. An analysis of a survey of teachers found lower motivation among teachers with more teaching experience and higher academic degrees. Fedyna-Darmokhval [21] studied the relationship between teachers' age and motivation to undertake international internships and found that teachers over 50 were less motivated to undertake internships in other countries, which limits professional development opportunities.

The prevalence of distance learning during martial law explains the popularity of skills in working with distance learning platforms among teachers. However, distance learning has become relevant not only for martial law, as the COVID-19 pandemic has accelerated and demonstrated the opportunities and relevance of digital technologies in the educational process due to growing trends in the use of electronic resources, software updates and the amount of information available. The authors emphasise the possibilities of distance learning and the importance of developing digital competence among teachers not only to improve student learning but also as part of the professional development of teachers [22].

A new trend in continuing professional development under martial law is the introduction of consulting as a means of reducing the workload of teachers and increasing the availability of teaching staff to meet the needs of students. Consulting is an effective means of mastering new technologies in digitalisation, so its role has grown in recent years, and the demand for consulting services has increased. This trend is explained by constant changes in business conditions and large digital databases, which require practical technological tools [23]. For the education system, the management and planning of consulting activities help to improve student-teacher interaction and provide a personalised approach to learning [24–26].

## Conclusion

The study proves the negative impact of martial law on teachers' continuing professional development, which manifested in a decrease in the number of hours of professional development. An inverse correlation was found between teaching experience and the number of hours of continuous professional development. The authors found lower motivation for professional development among teachers with more teaching experience and higher academic degrees, and the primary motivation factor was the administration's requirements for professional development. Thus, in the context of martial law, the reduction of pressure from the management of educational institutions on the requirements of continuous professional development leads to a decrease in motivation among teachers and causes a decrease in the quality of professional development.

The importance of acquiring new skills among teachers, including working with distance learning platforms and managing and planning consulting activities, is proven. The article proves the increasing role of distance learning for teachers in the post-war period. The most significant obstacles to the quality professional development of teachers are identified, including interruption of the educational process due to frequent air raids and rocket attacks and adaptation of curricula to war conditions, which increases teachers' workload. To reduce teachers' workload, consulting activities should be used both for student education and the continuous professional development of teachers. The survey revealed different priority areas of professional development among different age groups of teachers and their academic degrees, which justifies the expediency of supporting the autonomy of choosing courses and training at the requests of the teaching staff.

## References

- [1] Murphy, L., Eduljee, N. B., & Croteau, K. (2021). Teacher-centred versus student-centred teaching: Preferences and differences across academic majors. *Journal of Effective teaching in Higher education*, 4(1), 18–39. <https://doi.org/10.36021/jethe.v4i1.156>
- [2] Fischer, D., King, J., Rieckmann, M., Barth, M., Büssing, A., Hemmer, I., & Lindau-Bank, D. (2022). Teacher education for sustainable development: A review of an emerging research field. *Journal of Teacher Education*, 73(5), 509–524. <https://doi.org/10.1177/00224871221105784>
- [3] Zhang, X., Admiraal, W., & Saab, N. (2021). Teachers' motivation to participate in continuous professional development: relationship with factors at the personal and school level. *Journal of Education for Teaching*, 47(5), 714–731. <https://doi.org/10.1080/02607476.2021.1942804>

- [4] Kálmán, O., Tynjälä, P., & Skaniakos, T. (2020). Patterns of university teachers' approaches to teaching, professional development and perceived departmental cultures. *Teaching in higher education*, 25(5), 595–614. <https://doi.org/10.1080/13562517.2019.1586667>
- [5] Korthagen, F. (2017). Inconvenient truths about teacher learning: Towards professional development 3.0. *Teachers and Teaching*, 23(4), 387e405. <https://doi.org/10.1080/13540602.2016.1211523>
- [6] Lay, C. D., Allman, B., Cutri, R. M., & Kimmons, R. (2020). Examining a decade of research in online teacher professional development. In *Frontiers in Education*, 5, 573129. Frontiers Media SA. <https://doi.org/10.3389/feduc.2020.573129>
- [7] Komba, S. C., & Mwakabenga, R. J. (2019). Teacher professional development in Tanzania: Challenges and opportunities. In H. Senol (Ed.), *Educational leadership. IntechOpen*. <https://doi.org/10.5772/intechopen.90564>
- [8] Trust, T., & Whalen, J. (2020). Should teachers be trained in emergency remote teaching? Lessons learned from the COVID-19 pandemic. *Journal of Technology and Teacher Education*, 28(2), 189–199. <https://www.learntechlib.org/primary/p/215995>
- [9] Bragg, L. A., Walsh, C., & Heyeres, M. (2021). Successful design and delivery of online professional development for teachers: A systematic review of the literature. *Computers & Education*, 166, 104158. <https://doi.org/10.1016/j.compedu.2021.104158>
- [10] Bakhmat, N., Sydoruk, L., Poberezhets, H., Misenyova, V., Boyarova, O., & Mazur, Y. (2023). Features of Using the Opportunities of the Digital Environment of the Higher Educational Institution for the Development of Future Economists' Professional Competence. *Economic Affairs*, 68(01s), 43–50. <https://doi.org/10.46852/0424-2513.1s.2023.6>
- [11] Fernández-Batanero, J. M., Montenegro-Rueda, M., Fernández-Cerero, J., & García-Martínez, I. (2022). Digital competences for teacher professional development. A systematic review. *European Journal of Teacher Education*, 45(4), 513–531. <https://doi.org/10.1080/02619768.2020.1827389>
- [12] Gaid, N., Abbott, A., Witze, A., Gibney, E., Tollefson, J., Irwin, A., & Noorden, R. (2022). How the war in Ukraine is changing global science. *Nature*, 607, 440–443. <https://doi.org/10.1038/d41586-022-01960-0>
- [13] Kretzmer, D., & Ronen, Y. (2021). *International human rights law. The Occupation of Justice: The Supreme Court of Israel and the Occupied Territories*. (pp. 83–98). 2nd edn. New York: Oxford University Press. <https://doi.org/10.1093/oso/9780190696023.003.0005>
- [14] Kaplia, O., Ribtsun, Y., Barbashova, I., Chobaniuk, M., & Ptashchenko, O. (2024). Advancing Ukrainian education in times of military conflict. *Multidisciplinary Science Journal*, 6(10), e2024211. <https://doi.org/10.31893/multiscience.2024211>
- [15] Zinchenko, V., Kaidanovska, O., Boyko, A., Potikha, O., & Chaika, S. (2022). Education and science of Ukraine in the realities of large-scale military aggression and global challenges of the 21st century. *Revista Eduweb*, 16(2), 223–233. <https://revistaeduweb.org/index.php/eduweb/article/view/44>
- [16] Anishchenko, V., Vdovenko, I., Tretyak, O., & Chebonenko, S. (2023). Full-scale military invasion of the Russian Federation of Ukraine as a factor of social transformations in higher education. *Revista Amazonia Investiga*, 12(61), 287–296. <https://doi.org/10.34069/AI/2023.61.01.29>
- [17] Wong, W. H., & Chapman, E. (2023). Student satisfaction and interaction in higher education. *Higher education*, 85(5), 957–978. <https://doi.org/10.1007/s10734-022-00874-0>
- [18] Yovenko, L., Novakivska, L., Sanivskiy, O., Sherman, M., Vysochan, L., & Hnedko, N. (2021). Pedagogical Analysis of the Phenomenon of Digital Competence. *IJCSNS International Journal of Computer Science and Network Security*, 21(6), 7–10. <https://www.koreascience.or.kr/article/JAKO2021210556039>
- [19] Basilotta-Gómez-Pablos, V., Matarranz, M., Casado-Aranda, L. A., & Otto, A. (2022). Teachers' digital competences in higher education: a systematic literature review. *International journal of educational technology in higher education*, 19(1), 8. <https://doi.org/10.1186/s41239-021-00312-8>
- [20] Tsiuniak, O., Iliichuk, L., Riznyk, V., & Kondur, O. (2024). Professional Values of a Modern Teacher as the Basis for Ensuring the Quality of Education During War Conditions. *Journal of Vasyl Stefanyk Precarpathian National University*, 11(3), 68–74. <https://doi.org/10.15330/jpnu.11.3.68-74>
- [21] Fedyna-Darmokhval, V. (2024). Pedagogical Problem of Professional Development of a Teacher of a Higher Educational Institution in the War Conditions. In *Innovation and Evolution in Higher Education*. Published: 09 April 2024. <https://doi.org/10.5772/intechopen.1005020>
- [22] Cabero, J., Barroso, J., & Palacios, A. (2021). Digital competences of educators in Health Sciences: Their relationship with some variables. *Educación Médica*, 22(2), 94–98. <https://doi.org/10.1016/j.edumed.2020.11.014>
- [23] Klochan, V., Piliaiev, I., Sydorenko, T., Khomutenko, V., Solomko, A., & Tkachuk, A. (2021). Digital platforms as a tool for the transformation of strategic consulting in public administration. *Journal of Information Technology Management*, 13, 42–61. <https://doi.org/10.22059/IJTM.2021.80736>

- [24] Castillo, Y. A., Cartwright, J., Greaves, M., & Maniss, S. (2023). Let's practice: Shaping crisis management of preservice counselling professionals. *Journal of Counsellor Preparation and Supervision*, 17(2). <https://digitalcommons.sacredheart.edu/jcps/vol17/iss2/1>
- [25] Wening, M. H., & Hasanah, E. (2020). Counselling Service Management in Efforts to Help the Potential Development of High School Students. *Randwick International of Social Science Journal*, 1(3), 579–589. <https://doi.org/10.47175/rissj.v1i3.110>
- [26] Delima, D., Neviyarni, N., & Ahmad, R. (2023). Counselling Guidance Management Standardisation in Schools Various Problems and Their Solutions. *Innovative: Journal of Social Science Research*, 3(3), 4836–4848. <http://j-innovative.org/index.php/Innovative/article/view/2673>

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## **Appendix 1**

### **Questionnaire**

1. Please indicate your age, gender, teaching experience and academic degree.
2. Please indicate the number of hours of your continuing professional development in 2021.
3. Please indicate the number of hours of your continuing professional development in 2023.
4. What motivates you to develop professionally:
  - improving communication with students;
  - desire for self-improvement;
  - requirements of the management of the educational institution;
  - Acquiring new skills?
5. What skills would you like to learn as part of the CPD?
6. What methods of CPD prevailed in the pre-war period?
7. What methods of CPD prevail during martial law?
8. What, in your opinion, hinders the quality professional development of teachers during martial law?

## Appendix 2

### Main characteristics of respondents

| Characteristics     |                                              | Quantity | %    |
|---------------------|----------------------------------------------|----------|------|
| Gender              | Male                                         | 143      | 46,9 |
|                     | Female                                       | 162      | 53,1 |
| Age                 | 20-30 years old                              | 55       | 18,1 |
|                     | 30-40 years old                              | 84       | 27,5 |
|                     | 40-50 years old                              | 87       | 28,5 |
|                     | 50-60 years old                              | 47       | 15,4 |
|                     | > 60 years old                               | 32       | 10,5 |
|                     |                                              |          |      |
| Teaching experience | < 5 years                                    | 48       | 15,7 |
|                     | 5-10 years                                   | 88       | 28,9 |
|                     | 10-20 years                                  | 113      | 37,0 |
|                     | > 20 years                                   | 56       | 18,4 |
| Academic degree     | No                                           | 49       | 16,1 |
|                     | Candidate of Sciences / Doctor of Philosophy | 174      | 57,0 |
|                     | Doctor of Science                            | 82       | 26,9 |

### Appendix 3

#### Comparison of the number of hours of CPD among the surveyed teachers for 2023 and 2021

| Two-sample t-test with equal variances |                   |                   |
|----------------------------------------|-------------------|-------------------|
|                                        | <i>Variable 1</i> | <i>Variable 2</i> |
| Average                                | 23,09508          | 31,92787          |
| Dispersion                             | 160,7508          | 387,6658          |
| Observations.                          | 305               | 305               |
| Combined variance                      | 274,2083          |                   |
| Hypothetical difference in mean        | 0                 |                   |
| df                                     | 608               |                   |
| t-statistic                            | -6,58707          |                   |
| P(T<=t) is one-sided                   | 4,86E-11          |                   |
| t critical unilateral                  | 1,647364          |                   |
| P(T<=t) bilateral                      | 9,72E-11          |                   |
| t critical bilateral                   | 1,963873          |                   |

