

Psychological safety of participants in the educational process during the COVID-19 pandemic: a comparative analysis of online learning

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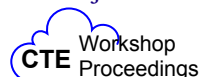
Abstract. This paper examines the psychological safety of participants in the educational process during the COVID-19 pandemic, with a focus on the mass transition to distance learning. The study presents a comparative analysis of students' assessments of online learning during the pandemic, highlighting the peculiarities of the psychological safety of the educational environment and its impact on students. The results reveal a statistically significant difference in the peculiarities of the psychological safety of participants in the educational process as to gender, age, and status. The survey of participants in the educational process presents the results as to their attitude to the peculiarities of learning under the conditions of the COVID-19. They testify to the deterioration of psychological safety in the educational environment of higher education institutions, and, accordingly, the subjective well-being of participants in the educational process in a pandemic. There was a decrease in the number of respondents with a positive attitude to distance learning and a willingness to work exclusively online.

Keywords: psychological safety, educational process, COVID-19 pandemic, online learning, subjective well-being

1. Introduction

The COVID-19 pandemic has posed unprecedented challenges to various aspects of human life, such as public health, social interaction, professional work, scientific research, education, and religion. To cope with these challenges, many people

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have turned to online services as a way of maintaining their normal activities while minimizing the risk of infection [40, 46, 56, 59].

One of the most affected domains by the pandemic is education, as many educational institutions around the world have switched to distance learning to ensure the continuity and quality of the educational process [15, 30, 37]. According to UNESCO, almost 70% of the world's students are not attending school due to the closure of learning institutions as a response to the COVID-19 pandemic [33].

The transition from traditional (full-time) to distance learning has exposed many gaps, problems, anxiety, and unpreparedness among the users of social networks, who face unexpected challenges in adapting to the new mode of learning.

Forced distance learning requires not only the organization of the educational process in quarantine and the use of traditional teaching methods, but also the provision of specific resources for e-learning, the mastery of information tools, and the ability to use them according to the learning objectives. Moreover, each person needs to feel psychologically safe in the modern Internet environment and in the information space in general. Therefore, the problem of the psychological safety of a person who studies online in a pandemic becomes especially relevant.

Psychological safety is a type of safety awareness based on the psychological climate of the educational process in educational institutions [41, pp. 433-440]. This is especially important in times of social changes, the rapid development of information technology, and the possibility of using various means of influencing human consciousness. In this context, a psychologically safe educational environment is a condition for the personal growth of the participants of the educational process through their interaction, free from the manifestations of psychological violence; reference significance and involvement of each subject in designing and maintaining the psychological comfort of the educational environment; a humanistic orientation, etc [11].

2. Literature review

Psychological safety is a basic need for safety, “a kind of sense of confidence, safety and freedom that removes fear and anxiety, in particular, it contains a feeling that a person meets current and future needs” [38, pp. 21-41]. Psychological safety involves the reduction of interpersonal risk, which necessarily accompanies uncertainty and change [50, 53], readiness to “get a job or express oneself physically, cognitively and emotionally during role performances”, the ability to “refuse and defend one's personal” [29, pp. 692-724].

Nowadays complex conditions and the specific features of the digital environment in the COVID-19 pandemic, which is a favourable basis for psychological violence, cyberbullying, manipulative influences, caused the problem of psychological safety of participants in the educational process in the mass transition to distance learning, which attracts particular attention. In particular, a new form of bullying – *cyberbullying* is a form of behaviour that consists in sending messages of an aggressive and offensive nature using new information and communication technologies (Internet, and mobile phone). There are many factors and theories of bullying, the most famous of which is the sketch theory of Olweus [43, pp. 5-17], where the existence of typical characteristics of “victim” and “aggressor”.

Other forms of cyberbullying are the “hacking” actions aimed at harming the “victims” personal computers (hacking and changing passwords, damaging personal websites, etc.). All these damages determine the presence of specific features of such “high-tech” bullying in comparison to a traditional one.

Firstly, constant hostile actions are inessential, as, for example, one-time damage to

the victim's website with the addition of offensive information may have a longitudinal effect (many network users will read the message).

Secondly, the factor of physical strength, important in cases of ordinary (contact) bullying, is insignificant. The intellectual abilities and technical skills of the aggressor come to the fore in this case.

Thirdly, there is no direct communication between the "aggressor" and the "victim". So the "aggressor", for example, does not observe the reaction of his/her "victim" and the outcomes of the actions. Bullying via the Internet allows the "aggressor" to remain anonymously and turn the situation of *persestageion* into a kind of "masquerade" [26, pp. 206-221].

Therefore, the psychological safety of all the participants in the educational process studying online in a pandemic is a prerequisite for their psychological well-being and psychological health.

We single out such scientific investigations of recent years, which together with the above serve theoretical and methodological basis for research.

We have developed the conceptual provisions on the content of the psychological safety of the individual in general [20, 21, 47] and its role in the process of knowledge exchange in virtual communities, in particular [33]. We consider safety as a key psychological characteristic of the educational environment [3], while the psychologically safe educational environment as a condition for the personal growth of the participants of the educational process through their interaction, independence from the manifestations of psychological violence; reference significance and involvement of each subject in designing and maintaining the psychological comfort of the educational environment; a humanistic orientation, etc.

The research examines the specifics of psychological safety as one of the most important factors of work in the virtual environment [12, 20, 24, 48].

The following study has analysed: the features of distance learning under the conditions of self-isolation as to the COVID-19 pandemic [5]; the peculiarities of the use of diverse digital educational resources and online learning tools in the educational process [32, 34, 61]; the specifics of the organization of effective work of remote virtual teams online [45], management aspect in distance learning [31, pp. 8-27]; the possibility of obtaining the psychological safety in such teams [17, 18] and approaches of ensuring the psychological safety in a crisis [16].

Besides, most students and teachers of higher education institutions had little experience with online tools, information technology before the COVID-19 pandemic. Today's challenges have caused a shock in society – a threat to human health from COVID-19, economic downturn, the transition to distance learning, job losses, social support, business closures and more [28].

Distance learning is not the same as online learning. Real online learning takes place on digital platforms designed for this purpose, often with personalized content for each student and options for using their chosen digital tools. Online learning promotes different types of learning preferences, provides flexibility and uses quality indicators online. But under COVID-19, distance learning for the student community did not include any of these functions but instead provided a set time to listen to teachers' lectures via Zoom or Google Meet [62, p. 54]. Moreover, pre-coronavirus online training programs may not be as effective without the support of teachers and a personal learning structure.

The teaching staff needs pedagogical support for distance learning and proper education on the systems used and preparation of the content of academic disciplines [31], mastering new technologies and their use in parallel with their previous experience and beliefs [13, 26].

After all, digital competence is now an essential competence that modern man needs

for personal realization and development, employment, social integration and active citizenship [10, 19].

In Ukraine, scholars are currently conducting the research, which relates mainly to psychological care and psychotherapeutic practice in a pandemic in various spheres of public life [35]. For instance, the well-known scientific work “The world of life and psychological safety of human under conditions of social change”, carried out by a team of scientists led by M. Slyusarevsky at the Institute of Social and Political Psychology during 2000-2017, which contains extremely valuable scientific results. However, authors of the work naturally could not predict the course of events related to the COVID-19 pandemic and, accordingly, conduct basic research in this aspect, the results, in particular, determine the ways of the rise of the individual’s psychological safety under the conditions of social changes.

Despite numerous studies, the problem of psychological safety of the educational environment in general and students studying online in a pandemic, in particular, attracts attention. As a result, the desire for safety is a basic human need, an important factor in the self-realization of the individual in professional and personal life and a condition for a full life of the individual [49].

Consequently, the most important goal of the educational institutions is to ensure the psychological safety of the educational environment for students studying online in a pandemic, integrating the effective use of ICT in the educational process, updating the psychological and pedagogical science. At the same time, it is essential to fully promote the change of education for a sustainable future by strengthening critical thinking, communication, cooperation and creativity in youth [51, 52].

The *goal* of the article is to present the features of the psychological safety of the educational environment and their impact on students studying online in a pandemic. *Objectives of the study* – to find out:

- 1) peculiarities of psychological safety of the educational environment for participants of the educational process online;
- 2) participants’ attitudes in the educational process (students and teachers) to the peculiarities of learning under the conditions of the COVID-19 pandemic;
- 3) to carry out a comparative analysis of students’ assessments studying online in a pandemic regarding the change of the psychological safety of the educational environment of higher education institutions.

3. Methods

For studying the features of the psychological safety of the educational environment and their impact on students studying online in a pandemic, was the method of I. Baeva “Psychological safety of the educational environment” [3] modified by O. Bondarchuk [8, 11], which allowed measuring the level of psychological safety of the individual in the educational environment.

The author’s questionnaire carried out the study of the peculiarities of the psychological safety of the educational environment for the participants of the educational process and their attitude to the features of learning under the COVID-19 pandemic condition. Afterwards, the respondents answered the questions on various aspects of learning, such as:

1. Does the educational institution contribute to your psychological safety under the conditions of the COVID-19?
2. Is distance learning comfortable for you?
3. What form of training is optimal for you?

4. What information tools do you use in the educational process in the context of the COVID-19 pandemic? etc.

The empirical study implemented online through Google Forms. This allowed prompting feedback from participants in the educational process. From our previous work experience, Google Forms “not only determines the nature of the relationship between the participants of the educational process and the degree of satisfaction with them, and the socio-psychological climate as an indicator of organizational culture but also makes the appropriate management decisions and forecast situations in the educational environment; promptly intervenes and makes appropriate adjustments to the educational process; specifically, plans work on the relevant problem in the institution of higher education; creates conditions for comparing one’s assessment of the pedagogical staff’s activity with an independent assessment” [9] and surveys the level of this influence.

The usage of Google Forms and other information and communication resources in education allows you to: easily and quickly adapt to new requirements of distance education; monitor the quality of education; create an optimal environment for educational services; and understand human behaviour in the social environment, life cycles and interactions between biological, psychological, social-structural, economic, political and cultural factors of the educational process [6, pp. 93-104].

There is the widespread usage of Google Forms for conducting various surveys, including for testing the level of knowledge acquisition; as a test platform, and test results are stored in the Google Cloud [44].

Surveying or testing via Google Forms allows not only to significantly increase the level of research or testing, to reach a large number of students but also to reduce the labour costs of data processing for the teacher. After all, it is achievable to create an unlimited number of surveys, questionnaires, tests and invite an endless number of respondents. Tasks may vary in different spheres of the discipline and include questions on a specific topic or general topic or even an entire course. Besides, Google Forms allows you to create a form with different elements or types of questions where each can be made mandatory or optional. While creating a form, you may change the order of questions and choose different designs for their design. The link to the form is generated automatically after its creation.

To better monitor the students’ academic achievements and, in turn, to join the well-designed learning goals, the distance learning assessment affords noteworthy chances during the educational process.

To clarify the dynamics of indicators of psychological safety of the educational environment of higher education institutions during the year in a re-survey Google Forms was supplemented with questions:

1. If you compare your sense of psychological safety and comfort in an educational institution today and a year ago?
2. If you compare your attitude to distance education now and a year ago?
3. If you compare your psychological well-being (including mental health) now and a year ago?

Respondents had to choose from the following answer options:

- a) significantly worsened
- b) has worsened
- c) practically has not changed
- d) has improved
- e) significantly improved

Besides, we were interested in aspects related to the experience of psychological security and well-being in online learning, in particular:

1. What measures, actions did you take for your own development during the quarantine period?
2. Are you ready to fully switch to online learning?

The research used the content analysis with the focus on determining the relationship between psychological safety and well-being of participants in the educational process, and their knowledge and practical activities in the context of distance learning. Yuriy Fedkovych Chernivtsi National University and SHEI “The University of Educational Management” respondents were invited to participate in the study, acquainted with the purpose, scope and process of the study; received permission from the teaching staff, who agreed to participate. Information sheets about the research and a questionnaire in the Google Forms were sent to the participants of the educational process via e-mails. The survey was conducted at the beginning of the previous year (March, I stage), and at the end of 2020 (December, II stage) a re-form was sent to the addresses specified in the generalized Excel sheet.

Responses came from almost all respondents in the first sample, who responded positively to the situation of re-survey. This, in particular, is evidenced by the instructions in a large number of sent response forms such as: “I was glad to help”, “Thank you very much for your interest in our psychological state”, “Thank you for the opportunity to participate in the survey” etc.

Participants in the educational process received information from research staff on unclear issues or situations by e-mail. This way ensured that the participants in the educational process gave clear answers to the questions asked.

Statistical data processing and graphical presentation of results was carried out using the SPSS 17.0.

4. Analysis of the research results

4.1. Social and demographic characteristics of the research sample

The main group of respondents consisted of 174 people – representatives of socio-economic professions of Yuriy Fedkovych Chernivtsi National University and SHEI “The University of Educational Management”, whose professional activities include “spiritual and moral maturity”, “increased moral responsibility” and “values to people’s lives”, “willingness to face changing challenges” and “uncertainty” [55]. The respondents were divided into groups according to:

- gender (37.9% male & 62.1% female);
- age (up to 20 years – 15.5%, 20-30 years – 41.4%, 30-40 years – 15.5%, 40-50 years – 15.5%, over 50 years – 12.1%);
- place of residence (village – 41.4%, town – 58.6%);
- status (student – 75.9%, teacher – 24.1%) (table 1).

The separation of groups depending on the sex of the respondents was due to the gender features of the perception of psychological safety of the environment in different spheres of public life revealed in the research [14]. In particular, gender dissimilarity may have a more negative impact on the psychological safety of men with an increased number of women in working groups than on the psychological safety of women with an increased number of men in workgroups [57]. Accordingly, gender types contrasted by birth, so we determined the gender stereotypes by positive or negative prejudgments [44, 54]. We believed that psychological safety allows you to

Table 1

Groups of the respondents.

Groups of the respondents	Frequency	Valid Percent
Gender		
female	108	62.1
male	66	37.9
Age		
up to 20 years	27	15.5
20-30 years	72	41.4
30-40 years	27	15.5
40-50 years	27	15.5
over 50 years	21	12.1
Place of residence		
village	72	41.4
town	102	58.6
Status		
student	132	75.9
teacher	42	24.1
Basic education		
social and humanitarian	123	72.4
natural and mathematical	47	27.6

fully engage in work responsibilities without fear of negative consequences for your status, career or image [29].

We also considered the age of the educational process participants in the context of their perception of the environment psychological safety. Hence, according to the researchers [27], there is a different perception of various aspects of psychological safety of different generations and, equally, age groups.

Based on the results of our study, we revealed differences in the psychological safety of the educational environment depending on the status of participants in the educational process (teacher, student). This case research question was how stable the detected trend is. Moreover, we have found similar trends in other studies, such as Nembhard and Edmondson [42] of the psychological safety of the environment and professional status.

We also determined the peculiarities of assessing the level of psychological safety by the place of the respondents. We assumed that there are more risks in the city to ensure the psychological safety of the educational environment than in the countryside. The basis for this assumption was the study [22], which dealt with such differences.

Another controlled variable was the basic education of respondents (social and humanitarian or natural and mathematical). In this context, we counted on both our practical experience and Tsvyetskova [58] study, which indicates a difference in the value and meaning of teachers of different specialities. The author emphasizes that teachers of socio-humanitarian profile have conformist values (education, self-control), and more dependent on socio-political ideology; teachers of natural sciences and mathematics are based on individualistic values (independence, boldness, rationalism), independence of thinking from political events, focus on rigidly fixed laws, patterns, principles [58].

Based on these considerations, the following research hypotheses were formulated.

H_1 : The psychological safety of the educational environment of the higher education institution and, as a result, the subjective well-being of the participants in the educational process in a pandemic have deteriorated.

H_2 Participants in the educational process are different: gender (H_{3-1}), age ($H_3 - 2$),

place of residence (H_{3-3}), status (H_{3-4}), basic education (H_{3-5}) differ in the levels of experience of psychological safety of the educational environment.

H_3 : The number of respondents with a positive attitude towards distance learning and a willingness to work exclusively online has decreased.

4.2. Dynamics of indicators of psychological safety of the educational environment for participants and their subjective well-being of the educational process online

Under the condition of psychological safety, a person perceives the world around him/her as emotionally safe or free from emotional pressure [55, pp. 173-188]. People who feel psychologically protected do not perceive the world and other people as a threat. A sense of psychological safety creates a pleasant interpersonal relationship and allows you to take risks to achieve high life goals [1, pp. 247-261].

Quarantine causes a crisis for society, and, in particular, education. It is well-known that during the crisis it is difficult for people (as well as for educational institutions) to fully realize their expectations and competencies. The experience of distance education in higher education institutions shows that the level of these competencies is very different. Hence, we, as a society, who strive for better higher education, have to invest wisely, strengthen universities, promote creative ideas and find resources for their implementation. It is a key prerequisite for their qualitative transformation.

The effectiveness of a modern educational institution is measured not only by the quality of education but also by students' safety and teachers' safety. According to the results, this study in Ist stage indicated the low and the average levels of psychological safety of the educational environment, i.e. in 40.1% of socioeconomic professions (10.3% and 25.9%, respectively), 63.8% of the respondents showed the high and very high levels (table 2).

Table 2
Levels of psychological safety.

Levels of safety	I stage, %	II stage, %
low	10.3	11.8
average	25.9	33.5
high	50.0	39.4
very high	13.8	15.3

The obtained results determine the nature of the interaction, communication of the respondents of the educational process, the possibility of meeting and developing the needs of the individual in a sense of safety, maintaining and improving self-esteem, recognition, the formation of a positive self-concept, self-actualization, etc.

Instead, the second stage of the study (at the end of last year) deals with the relative deterioration of psychological safety indicators for participants in the educational process: a decrease in the number of participants who rated psychological safety as high from 50% to 39.4% and an increase in the number of participants who rated safety as average (from 25.9% to 33.5%) and low (from 10.3% to 11.8%). At the same time, the share of respondents who noted the level of psychological safety of the educational environment as very high (from 13.8% to 15.3%) (differences at the level of a weak trend, $p = 0.14$) increased slightly.

The obtained results are consistent with the participants' assessment of the level of psychological safety of the educational environment compared to a year ago (table 3). Respondents were asked to determine whether the psychological safety of the educational environment had changed for them during the year.

Table 3 shows that less than half of the respondents (42.9%) note that the level of psychological safety has not changed.

Table 3

Levels of the psychological safety in the educational institution today and a year ago.

Levels of safety today compared to a year ago	Percent
significantly worsened	8.8
worsened	12.4
practically has not changed	42.9
improved	29.4
significantly improved	6.5

One-third of respondents (29.4%) indicate an improvement, and 6.5% – a significant improvement in the level of psychological safety. Instead, every fifth participant in the survey indicates a decrease in the level of psychological safety – deterioration (12.4%) or significant deterioration (8.8%). There have been changes in the subjective well-being of participants in the educational process in a pandemic, as evidenced by their answers to the question “If you compare your psychological well-being (including mental health) now and a year ago. . . ” (table 4).

Table 4

Levels of the psychological well-being (including mental health) today and a year ago.

Levels of the psychological well-being compared to a year ago	Percent
significantly worsened	12.9
worsened	21.2
practically has not changed	47.1
improved	16.5
significantly improved	2.4

As in the previous case, only less than half of the participants (47.1%) indicate that their psychological well-being (including mental health) has practically not changed. 16.5% of respondents indicate an improvement, and 2.4% – a significant improvement in their well-being.

On the other hand, one-third of the participants in the educational process noted that their psychological well-being (including mental health) deteriorated during the year (21.2%) or significantly deteriorated (12.9%). The Spearman’s rank correlation coefficient revealed a direct, statistically significant correlation between the dynamics of changes in the psychological safety of the educational environment and the subjective well-being of participants in the educational process.

We established that the deterioration of psychological safety of the educational environment is accompanied by a decrease in the level of subjective well-being of respondents, which is a confirmation (as in previous studies [3, 11]) of the relationship of these phenomena. Thus, the results indicate a partial confirmation of hypothesis H_1 that the psychological safety of the educational environment of higher education institutions and, as a consequence, the subjective well-being of participants in the educational process in a pandemic has deteriorated.

4.3. Socio-demographic and organizational-professional peculiarities of psychological safety of the educational environment for participants of the educational process online

By the purpose and objectives of our study, the truth of hypothesis H_2 about the differences in the levels of experience of psychological safety of the educational environment by participants in the educational process depending on their socio-demographic (gender, age, place of residence), and organizational-professional (status, basic education) characteristics was tested.

According to the results of ANOVA, the research revealed statistically significant differences in the peculiarities of psychological safety of the educational environment of participants in the educational process depending on gender and professional status (figure 1, $p < 0.01$).

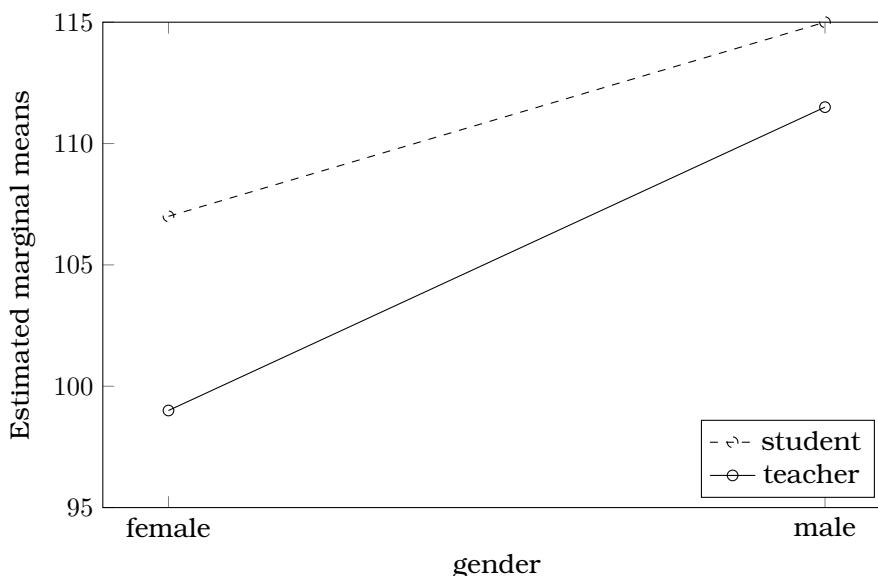


Figure 1: The peculiarities of psychological safety of the educational environment of participants in the educational process depending on gender and professional status.

Figure 1 shows that male feel more psychologically protected than women, and students feel more psychologically protected than teachers. Similar dependencies were confirmed at repeated research, at the end of the year. This situation, in our opinion, reflects, on the one hand, the positive trends in the implementation of the student-centred approach, and on the other hand, the negative trends associated with the ambivalent position of the teacher in modern Ukrainian society.

At the same time, the picture of experiencing psychological well-being at the end of the year turned out to be somewhat different.

From the data given in table 5, it follows that the number of students for whom well-being has significantly deteriorated is higher than for teachers (15.0% and 5.4%, respectively). On the other hand, those students for whom the level of psychological well-being has improved are significantly less than teachers (12.0% and 32.4%, respectively) (statistically significant differences were found by criterion χ^2 , $p < 0.05$).

Table 5

Levels of the psychological well-being (including mental health) of students and teachers today and a year ago, $p < 0.05$.

Levels of the psychological well-being compared to a year ago	Percent	
	students	teachers
significantly worsened	15.0*	5.4*
worsened	20.3*	24.3*
practically has not changed	50.4*	35.1*
improved	12.0*	32.4*
significantly improved	2.3*	2.7*

We attribute these results to the pandemic situation – a reasonably large number of respondents became ill with COVID-19 (fortunately, there were no fatalities among them), so it had a negative impact on their mental state. Based on our experience

of interacting with such students, some of them even refused to turn on their video cameras in class, citing poor appearance and the fact that they have not yet fully recovered from the disease.

For many of them, the state of the disease came as a shock: after all, the media constantly spread information about the risk of the disease, especially for the elderly and, mainly, the retired ones, respectively, they did not perceive the situation as threatening to themselves. This situation, in our view, raises the issue of the adequacy of media coverage in general and in a pandemic in particular.

It is noteworthy that at the level of secondary education of Russian secondary school pupils and teachers revealed a different trend: teachers of secondary education found a higher level of psychological safety than students [4]. The latter, according to researchers may indicate that the psychological safety of the educational environment for the teachers and the students can be determined by various factors [3, p. 94].

Also, the age-related characteristics of the experience of psychological safety by participants in the educational process were confirmed and even became more pronounced. At the first stage, at the beginning of the year.

Furthermore, according to the age of participants in the educational process, 2 categories of respondents feel more protected. Firstly, it is young people (up to 20 years old) – mostly students, which indicates, in our opinion, the gradual implementation of the student-centred approach in higher education. Secondly, senior responds over the age of 50 (mostly teachers who have acquired professional status, have degrees and titles) and are well established in their educational institution (differences in the level of trends, $p = 0.103$).

The second phase of the study at the end of the year draws attention to a certain decrease (compared to previous data) in levels of psychological safety for young people (up to 20 years old) and senior responses over the age of 50 with the general preservation and strengthening of the previously identified trend (figure 2, $p < 0.01$).

Furthermore, according to the results of ANOVA, the results showed the peculiarities

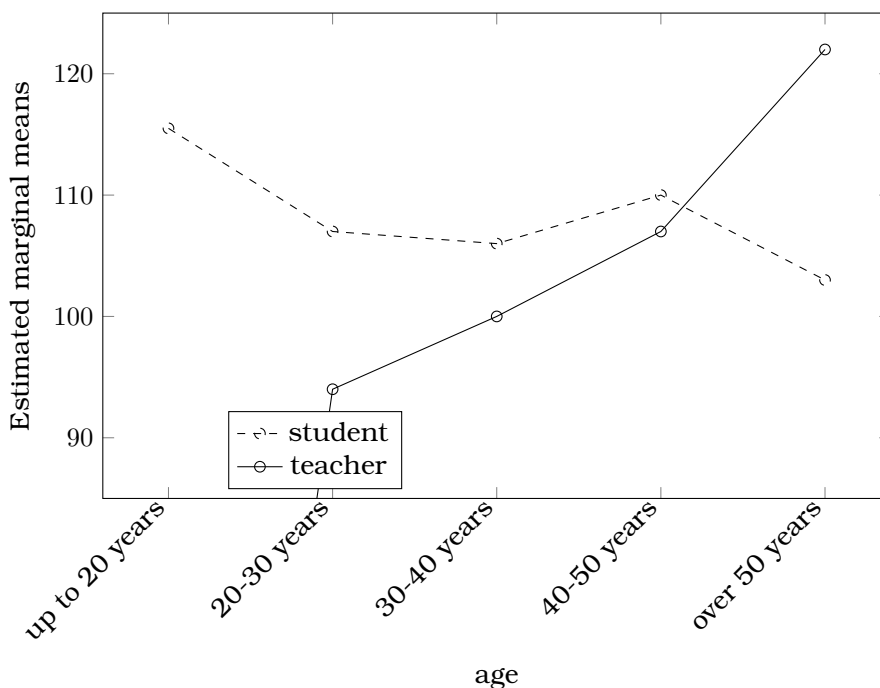


Figure 2: The peculiarities of psychological safety of the educational environment of participants in the educational process depending on age and professional status.

of the experience of psychological safety by participants in the educational environment depending on their place of residence (figure 3, at the level of a weak trend, $p = 0.17$). Figure 3 shows lower indicators of psychological safety for participants in the educational process living in the city. This situation is especially noticeable in students. We clarify this state of affairs precisely by the specifics of the place of residence and, in particular, by the artificial restriction of a significant number of contacts to which those who live in the city are accustomed.

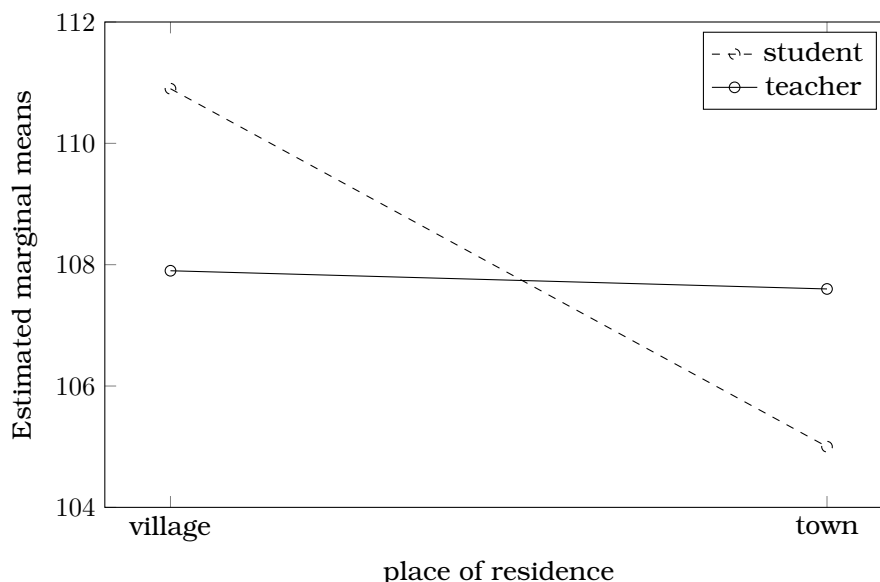


Figure 3: The peculiarities of psychological safety of the educational environment of participants in the educational process depending on age and professional status.

For participants from villages, this situation is less emotional due to fewer direct contacts for villagers. In the rural type of life, a certain rhythm of life is stricter; there is less choice of occupations, a narrowed space of communication.

Our assumption about features of psychological safety of educational environment for participants of educational process with various education was confirmed (figure 4, at the level of weak tendency, $p = 0.16$).

Figure 4 displays that in the case of the social and humanitarian orientation of the participants in the educational process, the psychological safety of the educational environment is perceived higher than for representatives of natural and mathematical education.

The obtained results are consistent with the data of Gilemkanova [22] according to which, there is an impressively higher level of the rigour of the risk of socio-psychological safety in the educational environment in cities and towns than in the village. The researcher notes that the contextual factors have lower links with the socio-psychological safety index, as contrasted with other personal points. The practical value of this study is that this information helps to objectively assess the risks of social and psychological safety in a particular educational environment. It is also necessary to take timely preventive measures in the most stressful institutions in terms of psychological safety. Increasing psychological prevention work with students with different risk indicators is more relevant [26, 42].

A detailed analysis of the results revealed both the most problematic and relatively favourable areas of psychological safety for participants in the educational process, which are somewhat different for teachers and students (tables 6, 7).

Thus, according to the results of the first stage students feel protected in the follow-

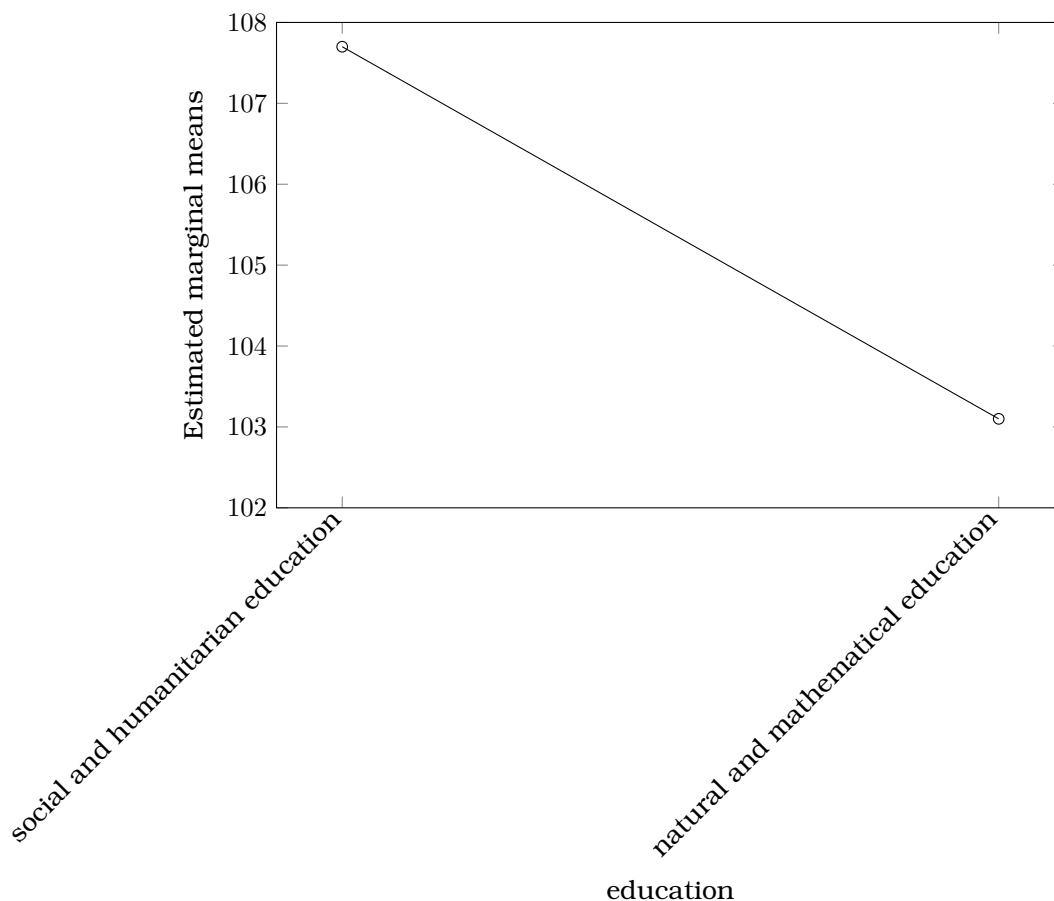


Figure 4: The peculiarities of psychological safety of the educational environment of participants in the educational process depending on base education and professional status

ing aspects of their educational activities: continuous improvement of professional skills (54%), development of abilities (54%), the opportunity to express their points of view (48%), ask for help (46.8%).

According to the second section, the picture has changed somewhat: the students' positive assessment of what has increased work in a higher education institution requires constant improvement of professional skills (73.7%).

Instead, the benefits of the educational environment in terms of interpersonal relationships have diminished significantly. Thus, according to students, the opportunity to express their point of view has significantly decreased (24.8%). It also became smaller the opportunity to ask for help (39.8%) (table 6).

Instead, according to the results of the first stage students feel psychologically unprotected because of the negative mood at work they do (21.5%); public humiliation: by students (19.9%), teachers (22.3%), administration (23.8%), being ignored by the administration (16.6%) and threats from the administration (11.9%).

At the end of the year, the situation in this context somewhat eased, but new threats to the psychological safety of the educational environment appeared, in particular, protection from an unfriendly attitude of students decreased, the low level of which was found in 8.3% of students compared to 1.5% at the beginning of the research (table 6).

Similar dynamics of views on various aspects of psychological safety of the educational environment is found in teachers. Thus, the results of the first stage teachers feel more psychologically safe in the constant improvement of professional skills

Table 6

Some questions about the psychological safety of the high education students.

Problem areas of psychological safety	The low level of safety %	
	I stage	II stage
The mood at your work that you do	21.5	21.1
Protection from public humiliation:		
by students	19.9	8.3
by teachers	22.3	6.2
by the administration	23.8	11.3
Protection from being ignored by the administration	16.6	9.8
Protection from threats from the administration	11.9	7.5
Protection from unfriendly attitude of students	1.5	8.3
Relatively favourable areas of psychological safety	The very high level of safety, %	
	I stage	II stage
Working in your educational institution requires constant improvement of professional skills	54.0	73.7
The work you have to do helps to develop your abilities	54.0	50.4
The opportunity to express your point of view	48.0	24.8
Opportunity to ask for help	46.8	39.8

Table 7

Some questions about the psychological safety of the high education teachers.

Problem areas of psychological safety	The low level of safety %	
	I stage	II stage
Protection from public humiliation:		
by students	24.9	35.1
colleagues	39.8	32.4
by the administration	27.3	10.8
Protection from threats from		
by students	31.3	37.8
by teachers	43.8	37.8
by the administration	25.0	21.6
Relationships with colleagues	37.5	8.1
The opportunity to express your point of view	25.0	5.4
Opportunity to show initiative, activity	37.5	8.1
Opportunity to ask for help	25.0	8.1
Taking into account personal problems and difficulties	25.0	10.8
Protection from the fact that the administration will force you to do anything against your will	2.7	13.5
Relatively favourable areas of psychological safety	The very high level of safety, %	
	I stage	II stage
Working in your educational institution requires constant improvement of professional skills	45.8	97.3
The work you have to do helps to develop your abilities	33.3	83.8
The mood in your work that you do	41.7	35.1

(45.8%), the development of their abilities in the process of work (33.3%), and getting pleasure from their activities (41.7%).

Instead, according to the second section, the picture has changed: teachers' positive assessment that the work in a higher education institution requires constant improvement of professional skills has increased significantly (from 45.8% to 97.3%), also, that the development of their abilities in the process of work (from 33.3% to 83.8%). In our opinion, this is explained by the need to master new digital technologies to perform their duties well in the conditions of mass transition to distance learning.

Instead, the mood in a teachers' work that they do worsen (from 41.7% to 35.1%) (table 7).

However, according to the results of the first stage they are psychologically unprotected from public humiliation as a devaluation of the teacher's professional achievements, groundless criticism in the presence of others, especially by colleagues (39.8%), administration (27.3%); threats from students (31.3%), colleagues (43.8%), administration (25%). Besides, there are problems with the manifestation of initiative activity (37.5%), expressing their point of view (25%), receiving some help (25%), taking into account their problems and difficulties in professional activities (25%).

At the end of the year, these threats to teachers mostly decreased, in particular, they were psychologically unprotected from public humiliation, especially by colleagues (32.4%), administration (10.8%); threats from colleagues (37.8%), administration (21.6%). Besides, there are problems with the manifestation of initiative activity (8.1%), expressing their point of view (5.4%), receiving some help (10.8%). Besides, there is an increase in experience psychologically unprotected from public humiliation by students from 24.9% to 35.1%.

At the same time, there are trends for new challenges in the context of the psychological safety of the educational environment: the threat that the administration will force teachers to do anything against them will increase from 1.5% to 13.5%. A possible explanation for the established results may be a much smaller number of direct contacts of teachers with colleagues, on the one hand, and a decrease in the possibility of direct influence on students, on the other. In the latter case, the student may be formally present at the lesson, but for various reasons "hide" behind the author, which accordingly complicates the ability to control the quality of his inclusion in the lesson (table 7).

From the data of table 7, it follows that for teachers of higher education it is possible to state an imbalance between relatively favourable and problematic areas of psychological safety of the educational environment towards the latter.

Besides, the problem of compensation for those socio-psychological mechanisms of influence on the educational activity of students, which were involved in the educational process in full-time form and, accordingly, direct interpersonal communication.

In general, it is stated that the hypothesis that the participants in the educational process are different: gender (H_{3-1}), age (H_{3-2}), place of residence (H_{3-3}), status (H_{3-4}), basic education (H_{3-5}) – differ in the levels of experience of psychological safety of the educational environment as a whole confirmed.

The received information on social-demographic and organizational-professional features of psychological safety of participants of the educational environment it is expedient to consider at the organization of their psychological support and support in the conditions of training online.

4.4. Survey of participants in the educational process on their attitude to the peculiarities of learning under the conditions of the COVID-19 pandemic

Thus, to study the peculiarities of learning and the attitude of participants to it, we sought to learn about the sources, online resources where participants in the educational process obtain information.

Accordingly, the respondents – representatives of socionomic professions use the Internet search engines, specialized resources, sites, archives, databases via the Internet (13.3%), social networks (Viber (16.7%), Facebook (13.3), Instagram (6.7%), Telegram (9.9%), Skype (13.3%), and media (27.8%) to obtain information. It is clear that, as the distinguished reviewer noted, Internet is used in order to search for information using search engines, specialized resources, sites, archives, databases via the Internet. But we were interested in the psychological aspect of the fact of using

the Internet, in general. We understood psychological humiliation as public humiliation by colleagues and administration as a devaluation of the teacher’s professional achievements, groundless criticism in the presence of others. In further editing, if necessary, we can further detail the content of the psychological safety indicators.

Participants in the educational process use e-books (27.8%), gadgets (33.4%), and personal computers (16.7%), laptops (22.1%). A small part of the respondents uses various means (16.7%).

The educational process manages mainly through such online services as Zoom (33.4%), Google Meet (16.7%), BigBlueButton (3.3%), Moodle (13.3%) and Google applications (23.3%), which allows organizing conferences and webinars for different numbers of users and speakers.

At the end of the year according to the survey the respondents – representatives of socioeconomic professions use the Internet (33.3%), social networks (Viber (9.7%), Facebook 14.3), Instagram (16.7%), Telegram (19.9%), Skype (2.3%), and media (3.8%) to obtain information.

Participants in the educational process use e-books, NAES repository (14.4%), videos recommended by the Ministry of Education and Science (13.4%), gadgets (23.4%), and personal computers (26.7%), laptops 25.1%). A small part of the respondents uses various means (13.7%).

The educational process manages mainly through such online services as Zoom (33.4%), Google Meet (16.7%), BigBlueButton (3.3%), Google Class (22.2%), Moodle (13.3%), Google Jamboard (11.1%), and Google applications (53.3%), which allows organizing conferences and webinars for different numbers of users and speakers.

Thus, during the quarantine period, teachers and students are forced to use Internet resources. Quality online classes require the teacher to improve personal skills in working with online sources and platforms, as well as to master new information resources (Asana, Google Docs, Wiki, Dropbox, Google Jamboard, Kahoot, Miro board, Dashboard, Mentimeter etc.).

Besides, to positively influence the level of student achievement in the conditions of distance learning, it is necessary to create a wide variety of test tasks. After all, in contrast to the classroom conditions during practical classes, the student online may: prepare for as much time as he needs; pass about a hundred tests of one topic, which cover all its aspects and allow him/her to consolidate the lecture material; get a good knowledge of a particular topic; and, accordingly, to higher performance.

We also studied what new opportunities in the context of learning were noted by the participants of the educational process during the quarantine period. At the same time, according to criterion χ^2 statistically significant differences in the choice of classes of students and teachers were stated (table 8, $p < 0.05$).

Table 8
Features of activity of participants of educational process during the quarantine period.

What measures, actions did you take for your own development during the quarantine period?	Percent	
	students	teachers
mastered the online course	23.3	40.5
passed internships	6.8	13.5
passed advanced training courses	32.3	21.6
read a lot	10.5	16.2
increased the amount of communication on social networks	11.3	2.7
did nothing but current affairs	15.8	5.4

Table 8 shows that teachers, in general, were more active than students in choosing constructive forms of activity during quarantine and forced isolation. Accordingly,

while engaging the process of education during the quarantine period, teachers have higher activities in mastering the online course (40.5%) and passing internship (13.5%) and reading a lot (16.2%) than students (23.3%, 6.8% and 10.5% respectively). Thus, students have higher activities in the following actions: passing advanced training courses (32.3%), increasing the amount of communication on social networks (11.3%) and doing nothing but current affairs (15.8) than teachers (21.6%, 2.7% and 5.4% respectively).

Thus, the most important activity for teachers is to master the online course, whereas for students – to pass advanced training courses. Despite this, the less important for teachers is to increase the amount of communication on social networks, whereas for students – to pass internship.

We paid special attention to studying the attitude of participants in the educational process to the peculiarities of learning in the context of the COVID-19 pandemic. We asked them to answer questions on various aspects of learning.

Thus, we were interested in how much the educational institution contributes to the psychological safety of participants in the educational process. Only a quarter of respondents believe that the educational institution partly facilitates (25%). But a third of respondents (27.1%) indicates the opposite, i.e. does not contribute to the creation of psychological safety in participants. At the same time, almost half of the respondents (47.9%) reflect stress caused by quarantine. Importantly, distance learning cannot fully provide the ability to express emotions, feelings, and the ability to listen and hear, convince each other, sensuality, experience, the formation of moral, spiritual, and value spheres of the participants. Half of the participants in the educational process (52.1%) are satisfied with the form of distance learning. However, 54.2% of people consider mixed full-time and distance learning to be the optimal form for them (table 9).

Table 9

The participants’ attitude of the educational process to the peculiarities of distance learning under the COVID-19 conditions.

The participants’ attitude	I stage, %	II stage, %
Does the educational institution contribute to your psychological safety under the conditions of the COVID-19?		
on the contrary, under conditions of quarantine it causes stress	27.1	8.1
partly facilitate	47.9	13.5
facilitate	25.0	78.4
Is distance learning comfortable for you?		
uncomfortable	37.5	35.1
not quite so, I would like more F2F communication	10.4	29.7
comfortable	52.1	35.1
What form of training is optimal for you?		
distance learning online	37.5	24.3
full-time learning	8.3	24.3
mixed full-time and distance learning	54.2	51.4

The results of the study on the educational process participants’ attitude to the peculiarities of distance learning under the COVID-19 conditions are of interesting. According to the results of the first stage, the participants mostly feel the psychological safety from the educational institution under the conditions of the COVID-19 “partly facilitate” (47.9%), then “on the contrary, under conditions of quarantine it causes stress” (27.1%) and “facilitate” (25.0%). However, the results have changed a bit at the end of the educational year according to the second stage, i.e. the participants of educational process feel more safety psychologically from the educational institution

under the conditions of the COVID-19 “facilitate” (78.4%), “partly facilitate” (13.5%), and “on the contrary, under conditions of quarantine it causes stress” (8.1%).

Moreover, the results of the table 9 show the state of being comfortable during distance learning, i.e. of the first stage the participants of educational process mostly feel “comfortable” themselves (52.1%) than “uncomfortable” (37.5%) and “Not quite so, I would like more F2F communication” (10.4%). Still, the results of the second stage display the participants of the educational process have the same attitude to the state of being “comfortable” and “uncomfortable” (35.1%). Furthermore, the third section of table 9 due to the optimal form of training demonstrates chiefly equal results for the first and second stage, i.e. the highest state is “mixed full-time and distance learning” (54.1% and 51.4% respectively), then for the first stage there is the sequence of preferences: “distance learning online” (37.5%) and “full-time learning” (8.3%), but for the second stage there is no sequence, just the equal results for both preferences (24.3% each).

Thus, the results show the appropriate change of the educational process participants’ attitude to the peculiarities of distance learning under the COVID-19 conditions. Hence, there takes place the participants’ desirability of full-time learning alike distance learning. Its absence not only causes negative emotions of participants in the educational process but, also, negatively affects their academic success in the future [36].

The researchers note that the missing school for a prolonged period will likely have impacts on student achievement. Furthermore, students likely are returning this fall with greater variability in their academic skills.

Taking into consideration the research about students, who suffered from Hurricane Katrina [25], it is urgent to make all the comfortable conditions without learning loss for the participants of the educational process during COVID-19. Additionally, it is vital to empower educational leaders to protect the participants of the educational process and “researchers to make urgent evidence-informed post-COVID-19 recovery decisions” [36, p. 562].

Without a doubt, there are numerous studies and practical experience of distance learning, which testifies to its advantages. Thus, in recent years, Massive Open Online Courses (MOOCs) opportunities have been widely discussed as they are “one of the most prominent trends in higher education in recent years” [7, p. 427]. It is a well-known trend for distance education which gathered all the education process participants all over the world to share the educational content on the online platforms around the US and Europe, like Coursera, EdX, Udacity, Udemy, Iversity, MiriadaX, and Futurelearn [7, p. 428]. These courses are generally formed, set, and led by academics through open source web platforms [23, 39, 53, 60, 63].

Moreover, the changes in communication technologies play a significant role in social life and create new opportunities in the field of education. Nowadays, the most meaningful change in communication technologies is the communication structure of people and organizations.

Thus in the communication medium is evident the interactivity. There are several advantages of communication technologies under the conditions of COVID-19 or quarantine periods, i.e. establishing intensive communication through new media technologies and social media; all the participants of the educational process may receive the information transmitted to a large community; students have an ability to gain the knowledge of communicating by e-mail other than social media; distance learning platform is considered as a place in the life-long learning process; and of urgent, it is the chance to create new opportunities in the field of education. [13, pp. 636-640].

But the fundamental difference in the current situation is the compulsory nature of

distance learning within formal education through quarantine safety measures. That is why, in our opinion, the question “Are you ready to fully switch to online learning?” a relatively small number of respondents answered in the affirmative. At the same time, statistically significant differences in the answers of students and teachers were stated according to criterion χ^2 (table 10, $p < 0.05$).

Table 10
The participants’ readiness of the educational process to fully switch to online learning.

Are you ready to fully switch to online learning	Percent	
	students	teachers
yes	33.1	18.9
no	18.9	29.7
mixed form of education	34.6	51.4

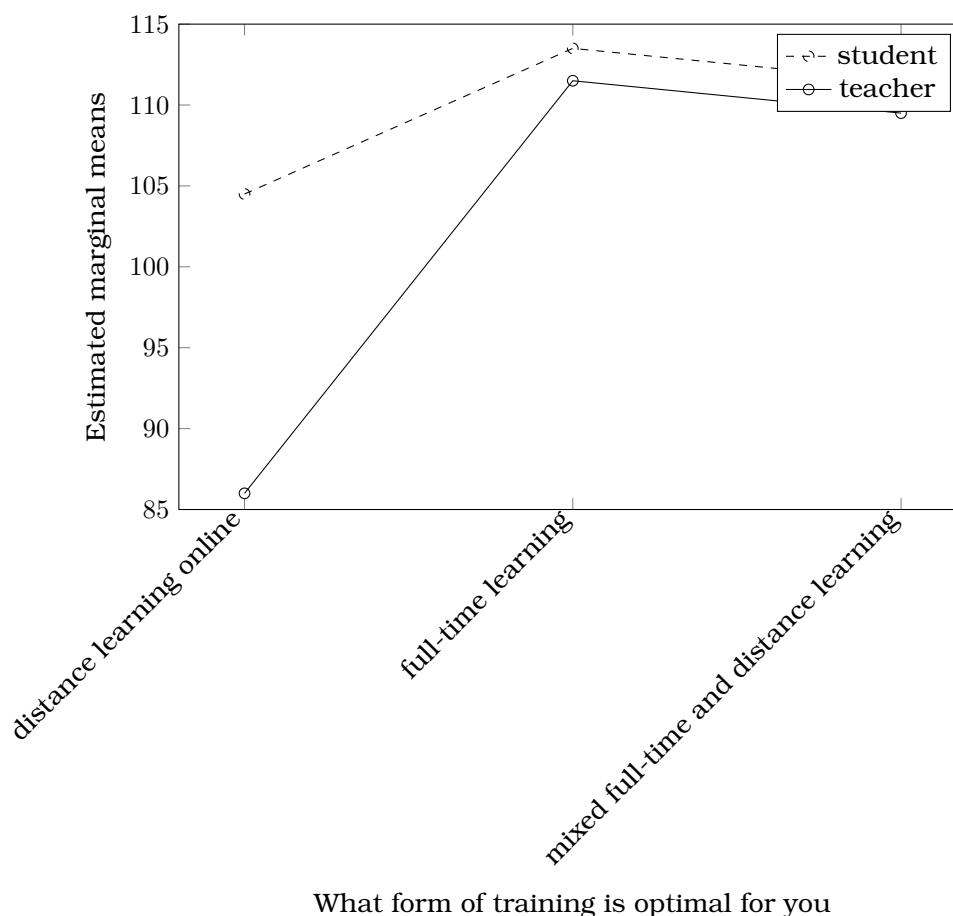


Figure 5: Peculiarities of psychological safety of the educational environment for adherents of various forms of education ($p < 0.05$).

Table 10 shows that only 33.1% of students and 18.9% of teachers expressed a willingness to switch entirely for online learning. A vital number of respondents are supporters of mixed, full-time and distance learning (34.6% of students and 54.1% of teachers). At the same time, almost a fifth student (18.9%) and every third teacher (33.1%) oppose the full transition to online learning.

The research pointed out the statistically significant differences in the peculiarities of psychological safety of the educational environment for adherents of forms of learning according to the results of ANOVA (figure 5, $p < 0.05$).

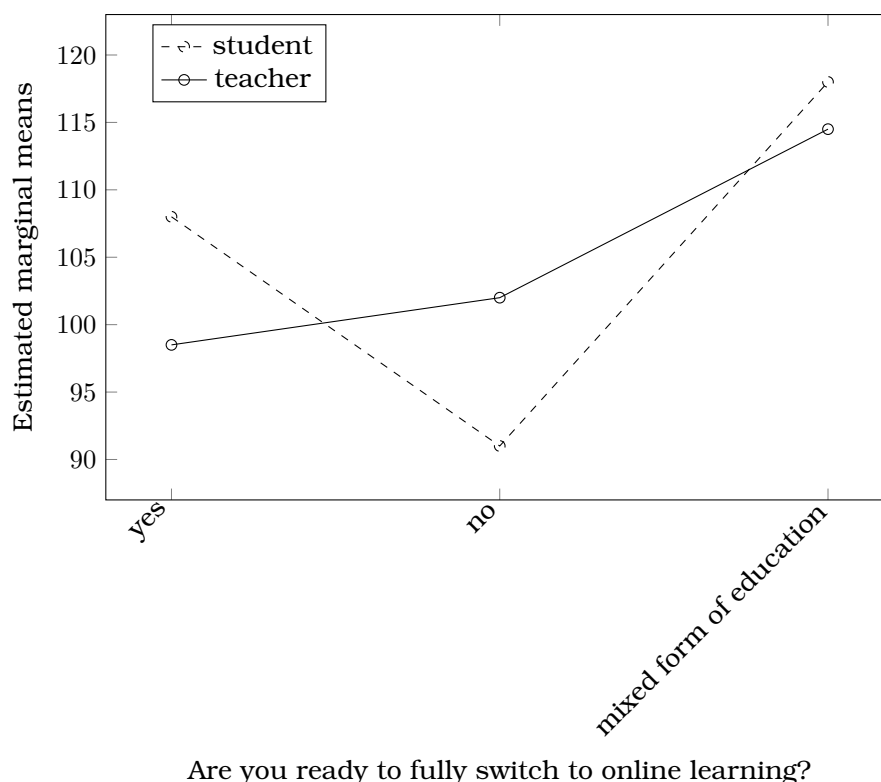


Figure 6: Peculiarities of psychological safety of the educational environment up to the willingness to fully switch to online learning ($p < 0.05$).

So, figure 5 shows that adherents of full-time and mixed forms of learning feel themselves as the most secured, whereas adherents of distance learning perceive the educational environment as much less psychologically safe.

The obtained results are confirmed by the assessment of the participants of the educational process of their readiness to completely switch to distance learning (figure 6, $p < 0.05$).

Figure 6 shows that for those participants in the educational process who are not ready to completely switch to online learning, the indicators of psychological safety of the educational environment are the lowest.

Also of interest are the results of the analysis of the dynamics of psychological well-being of participants in the educational process – supporters of various forms of education over the past year (figure 7, $p < 0.01$).

Figure 7 displays that it is possible to state positive dynamics of psychological well-being during quarantine at those participants of the educational process who are supporters of the mixed form of training which experience they partially had last year. Significantly lower levels of psychological well-being were found in supporters of distance learning and, especially, full-time education ($p < 0.01$).

Therefore, it is not surprising that the results of improving the psychological well-being of those participants in the educational process who due to certain circumstances have changed their attitude to distance learning over the past year in a positive direction (figure 8, $p < 0.01$).

Figure 8 shows that with the improvement of the attitude to distance learning, the indicators of psychological well-being of participants in the educational process also increase. In contrast, for those whose attitudes toward distance learning have deteriorated, psychological well-being also decreased ($p < 0.01$).

Such results testify to expediency and extreme urgency of appropriate psychological

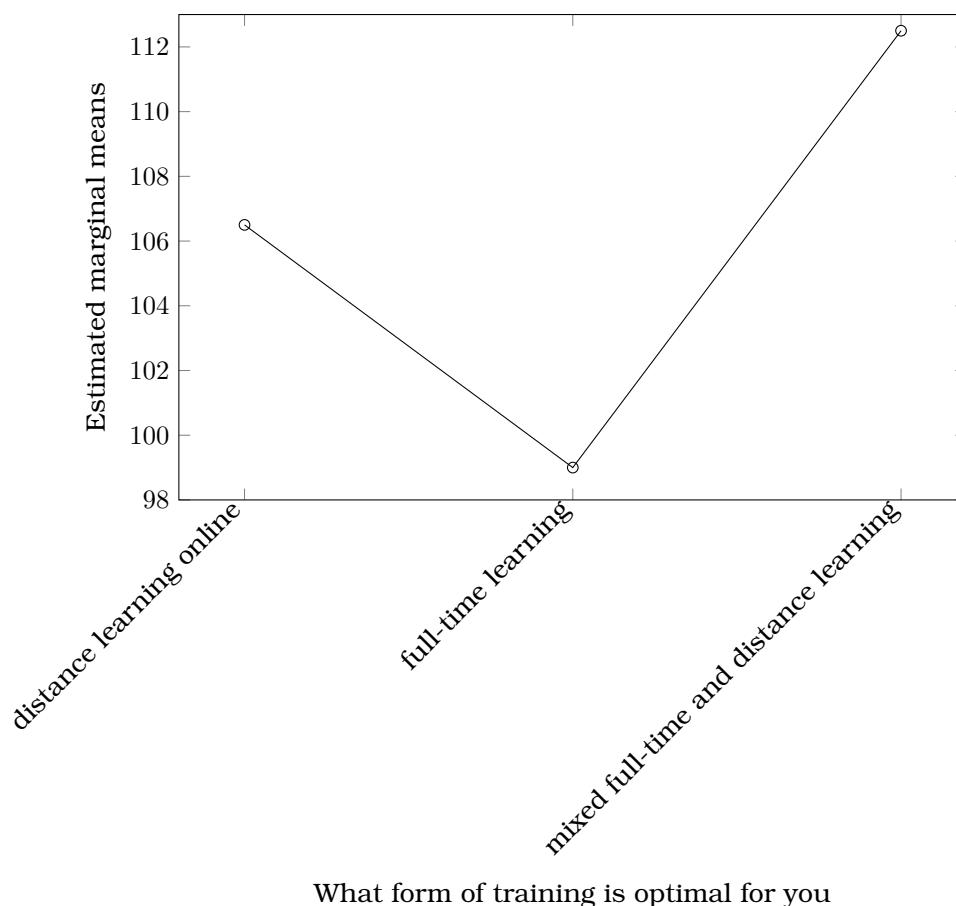


Figure 7: Dynamics of psychological well-being during quarantine for supporters of other forms of learning ($p < 0.01$).

support of participants of the educational process whose relation to distance learning in the conditions of quarantine restrictions has worsened recently.

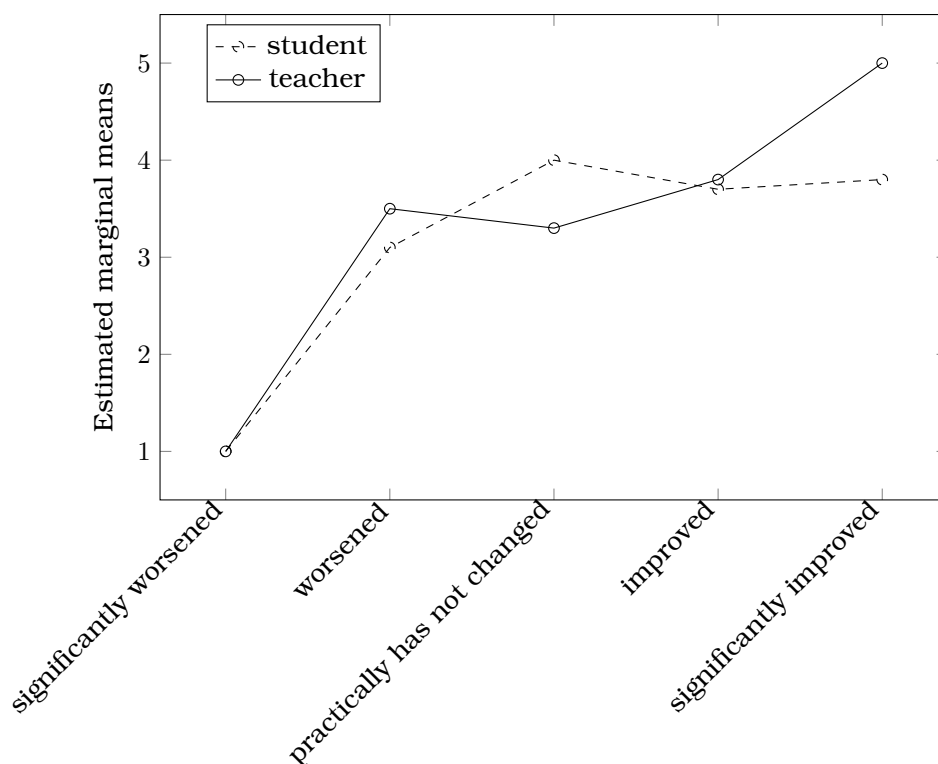
The obtained results indicate the possibility of using a mixed form of education in the future, as the knowledge, skills and abilities acquired in the COVID-19 pandemic are relevant and in demand for a sustainable society, support for 21st-century skills development through ICT and others [51].

On the other hand, it seems appropriate to develop a programme of psychological support for participants in the educational process of learning in a pandemic. Such a programme, as evidenced by “the evaluation of the deferred efficiency of the formative psychological impact in the educational environment” [2], may also help increase the psychological security of the educational environment.

5. Conclusions

In this paper, we have investigated the impact of the COVID-19 pandemic on the psychological safety and subjective well-being of the participants of the educational process in higher education institutions. We have conducted a comparative analysis of the pre-pandemic and post-pandemic data collected from students and teachers of different disciplines, genders, ages, and locations. Our main findings are:

- The psychological safety of the educational environment affects the subjective well-being of the participants of the educational process. The subjective well-being of both students and teachers has decreased significantly during the pandemic.



If you compare your sense of psychological security and comfort in an educational institution today and a year ago

Figure 8: Correlation between positive dynamics of psychological well-being during quarantine and attitude to distance learning ($p < 0.01$).

- There are significant differences in the levels of psychological safety among different groups of participants. In particular, women, students, urban residents, and representatives of natural and mathematical education experience lower levels of psychological safety than men, teachers, rural residents, and representatives of social and humanitarian education.
- The pandemic has also changed the attitudes of the participants towards the modes of learning. While half of the participants are satisfied with the distance learning mode, the other half prefer a mixed mode of full-time and distance learning. The lack of open communication and feedback is one of the main factors that negatively affect the satisfaction of the participants with the distance learning mode.

Based on these findings, we suggest that higher education institutions should adopt a mixed mode of learning that combines the advantages of both full-time and distance learning modes. This would require a change in policy and the implementation of appropriate reforms that would facilitate the mastery of information tools by the participants. We also propose that a program of psychological support for the participants of the educational process should be developed and tested to enhance their psychological safety and subjective well-being in the pandemic situation.

Declaration on generative AI: The authors declare that they have not used AI tools in the writing of this article.

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