

IC COMPETENCE' AND ATTITUDE' TEACHERS TO INTRODUCTION OF ICT IN FUTURE PSYCHOLOGISTS' DISTANCE LEARNING DURING RETRACTIONS PERIODS IN UKRAINIAN UNIVERSITY

PROFESSORES DE COMPETÊNCIA E ATITUDE DE CI PARA A INTRODUÇÃO DAS TIC NO ENSINO À DISTÂNCIA DE FUTUROS PSICÓLOGOS DURANTE PERÍODOS DE RETRAÇÕES NA UNIVERSIDADE UCRÂNICA

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ABSTRACT

In the developed countries of the world, IC-competence of higher education teachers has reached a high level. However, the level of IC-competence of teachers to teach higher education applicants for less developed countries, including Ukraine, is not high enough. There are many obstacles to the realization of distance learning. Therefore, the purpose of the study was the experimental determination of the levels of IC-competence and attitude of teachers of Ukrainian higher education to the introduction of ICT in the process of distance learning of future psychologists of during the COVID-19, as well as the main obstacles to the implementation of this process from the standpoint of teachers. The study, which was conducted online during the COVID-19 pandemic, was attended by 147 teachers of higher education institutions from different regions of Ukraine (84 – at the beginning of the pandemic and 63 – 2 years from its beginning). The data obtained were analyzed with SPSS 20. It was found that within two years of distance learning, the number of teachers with high and medium levels of IC-competence increased and decreased with low ones. The number of teachers with a positive and negative and ambivalent attitude towards the use of ICT in training future psychologists increased statistically significantly. A strong and direct link between IC-competence levels and teachers' attitude to the use of ICT in the process of remote training of future psychologists is determined. From the standpoint of teachers, the main obstacles to the realization of distance learning of future psychologists are: lack of proper technical support, low level of IC-competence of teachers and students, unwillingness of teachers to use ICT, low level of cognitive activity of students. Teachers believe that to overcome these obstacles requires proper technical support, a high level of teachers' motivation and a separate quality online platform for higher education. Therefore, we can conclude that strategies and incentives to increase the level of IC-competence and motivation of teachers, as well as providing ICT institutions of higher education institutions.

Keywords: Distance learning. Retractions period. Attitude. Information and communication competence. University teachers. Future psychologists.

RESUMO

Nos países desenvolvidos do mundo, a competência em IC dos professores do ensino superior atingiu um nível elevado. No entanto, o nível de competência IC dos professores para ensinar candidatos ao ensino superior para países menos desenvolvidos, incluindo a Ucrânia, não é alto o suficiente. Existem muitos obstáculos para a realização do ensino a distância. Portanto, o objetivo do estudo foi a determinação experimental dos níveis de competência em IC e atitude dos professores do ensino superior ucraniano em relação à introdução das TIC no processo de ensino à distância de futuros psicólogos durante o COVID-19, bem como os principais entraves para a implementação desse processo do ponto de vista dos professores. O estudo, realizado online durante a pandemia de COVID-19, contou com a participação de 147 professores de instituições de ensino superior de diferentes regiões da Ucrânia (84 – no início da pandemia e 63 – 2 anos desde o seu início). Os dados obtidos foram analisados com o SPSS 20. Verificou-se que em dois anos de ensino a distância, o número de professores com níveis alto e médio de competência em IC aumentou e diminuiu com os baixos. O número de professores com atitude positiva e negativa e ambivalente em relação ao uso das TIC na formação de futuros psicólogos aumentou de forma estatisticamente significativa. É determinada uma ligação forte e direta entre os níveis de competência em IC e a atitude dos professores em relação ao uso das TIC no processo de treinamento remoto de futuros psicólogos. Do ponto de vista dos professores, os principais obstáculos para a realização do ensino a distância dos futuros psicólogos são: falta de suporte técnico adequado, baixo nível de IC-competência dos professores e alunos, falta de vontade dos professores em usar as TIC, baixo nível de atividade cognitiva dos estudantes. Os professores acreditam que superar esses obstáculos requer suporte técnico adequado, alto nível de motivação dos professores e uma plataforma online de qualidade separada para o ensino superior. Portanto, podemos concluir que estratégias e incentivos para aumentar o nível de competência em IC e motivação dos professores, bem como fornecer TIC às instituições de ensino superior.

Palavras-chave: Ensino a distância. Período de retratação. Atitude. Competência de informação e comunicação. Professores universitários. Futuros psicólogos.

Introduction

In the modern world, global changes are taking place due to informational progress, accelerated by the global pandemic of COVID-19 and wartime, and most clearly manifested in the integration of information and communication technologies (ICT) in the educational, professional and personal spheres of many people's lives. Therefore, the labor market now needs highly qualified specialists who are ready to work in constantly changing conditions and have well-formed competences in the field of ICT for remote work. Nearly all professionals have shifted their activities online. Activities in this way require specialists to have a high level of development of organizational skills, information and communication competence (IC competence), psychological readiness to work remotely and

communicative competence in the media space. They must navigate modern trends in education, science and practice in order to maintain their competitiveness. Specialists who do not manage to master new competencies in time remain on the sidelines of their professional careers.

Thus, institutions of higher education in every developed country should be focused on the formation of innovative competencies in students, both during face-to-face and distance learning, taking into account the processes of global digitalization, European integration processes, world crises, wars, the COVID-19 pandemic and other possible epidemics. Because of the COVID-19 pandemic, and later through the introduction of martial law in the winter of 2022, the Ministry of Science and Education of Ukraine (MSEU), implemented distance learning in all educational institutions, including universities. According to governmental regulations, distance learning is an individualized process of transferring and acquiring knowledge, capabilities, skills, competencies, and ways of cognitive activities, achieved through the indirect interaction of learning process for participants who are located distantly from each other but are operating in the specialized media created with the current psychological and academic and information and communication technologies (MSEU, 2004). Ensuring high-quality distance learning of students requires a high level of innovative competences, in particular higher education teachers' IC competence. After all, the success of the professional socialization of future specialists in the modern digital world also depends on them.

ICT became an important component of education, a leading tool for distance learning and a determinant of teachers' professional development. At the same time, the question of the quality and innovativeness of future psychologists' professional training to work in today's realities is acute. Psychologists increasingly, in addition to consulting activities, began to educate the population and create online products (courses, intensives, marathons, quests, support chats, e-MAK, etc.). Therefore, the problem of developing of higher education teachers' IC competence during remote of future psychologists' professional training in retractions period is being updated.

Literature review

With the onset of technological progress and the integration of ICT, the role of the teacher has changed significantly. He is no longer the only, unique carrier and transmitter of professional knowledge and skills, but becomes a curator and facilitator for students – helps to navigate in a large flow of information. Teachers felt this especially strongly during the pandemic, which made progressive adjustments to the development of distance education and the improvement of IC qualifications of the teaching staff. The spring of 2020 was the period for the introduction of “urgent distance learning”, which differs from face-to-face online learning. In particular, the researchers established that courses where the quality of teaching was high and the teacher was interested in the work were evaluated by students as effective. Consequently, from the point of view of students, distance learning does not affect the effectiveness of learning the course under certain conditions (Sen-Akbulut, Umutlu, Oner & Arıkan, 2022).

Determination, professional activity, and self-efficiency of teachers have proved to have a positive impact on students’ learning outcomes either in face-to-face or distance formats. It is one of the most important and effective motivators linked to both qualities of educational services and students’ values and beliefs (Burić & Kim, 2020). The teacher’s motivation also indirectly affects the students’ successes through psychological mechanisms such as contamination, imitation, suggestion, etc., and through practices, forms, and methods they employ in their delivery (Ahna, Chiub & Patrickka, 2021).

Integration of the ICT into face-to-face and virtual teaching practices is now one of the globally accepted practices. However, according to the following research findings (Kirkup & Kirkwood, 2005), ICT integration is to be gradual rather than revolutionary. Teachers play an important role in the process. They should select technologies appropriate due to the specific field of knowledge, and develop students’ positive attitudes and interest in the new learning practices (Newby, Stepich, Lehman & Russel, 2009). Quality education is associated with the highly skilled, innovation savvy, and proactive to meet the needs of students learning

educators. The world is changing. Its transformations, e.g., digitalization should be reflected in the curriculums. That is' why teachers are primarily responsible for the development of students' IC competencies and coping with learning and future professional life challenges (Manju Bala, 2018).

ICT integration into education success is shaped by universities' teachers and administrations' readiness to cope with impediments to the innovation's implementation (Buabeng-Andoh, 2012).

In addition, the teacher's professional potential and his attitude to ICT also depend on the conditions in which he works. Namely, to what extent the management of the higher education institute took care of the availability of a regulatory and legal framework and proper technical equipment of educational buildings, conducting courses to improve the teachers' IC competence, etc. for their successful remote work (Qian Gao, 2021).

The development of teachers' IC competence is an integral part not only of the process of future psychologists' professional training, but also of the process of improving the qualifications of mature and elderly teachers with a long work experience. It has been proven that mature and elderly teachers are implicitly and explicitly opposed to the integration of ICT in the educational process and do not approve of distance learning in general. They often claim that these technologies do not allow them to realize their teaching potential. Also, they do not understand the opportunities that the Internet space opens up for them personally and for students, and therefore even sabotage the educational process. It has been proven that the attitude of teachers to the integration of ICT in distance and face-to-face education is influenced by a number of factors, which are listed according to their importance. Namely, the age of the teacher, participation in projects, gender, teaching in face-to-face or distance learning institutions of higher education (Gudmundsdottira, Gassóbb, Rubiobc & Hatlevikd, 2020). Integration of ICT in the educational process is a necessity, considerable effort and increasing the IC competence of teachers, a lot of time, positive motivation and changing beliefs (Mueller & Wood, 2012).

The review of the latest scientific works proved that the issue of the development of higher education teachers' IC competence during the distance

education of future psychologists during the period of retractions period was left out of the attention of scientists and requires careful study.

According to previous explanations, the aim of this study is to experimentally determine the levels of IC competence and the higher education teachers' attitude to the introduction of ICT in the process of future psychologists' distance learning during retractions period, as well as the main obstacles to the implementation of this process from the point of view of teachers.

Theoretic approach to the research

The learning outcomes that meet current social needs, aims, requirements, and standards are the manifestation of the distance learning quality in universities. To ensure the quality of distance learning, it is necessary to integrate ICT into the process of future psychologists' professional training. ICT is a critical teaching tool for distance learning. Due to ICT, teachers can apply a wider range of teaching techniques, help students obtain better knowledge, and make the learning process as effective as a face-to-face one.

The ability of teachers of higher education to apply ICT in the process of future specialists' distance learning determines their IC competence.

IC competency is the ability and readiness to use ICT independently and responsibly to reach the objectives of professional activities based on the dynamic combination of knowledge, skills, and practical experiences (Hrabovskiy, 2016; Morze & Kocharian, 2014; Spirin, 2009; Timofeyeva, 2017). Teachers' IC competence, as an indicator of the quality of education, is related to the mobilization of knowledge, skills and behavioral attitudes adjusted to the conditions of learning (Babae etc, 2020). Informational and digital literacy, knowledge and skills in applying ICT to the teaching, ability to organize effective communication and cooperation, the safety of the learning experience, etc. define the teachers' IC competence (Rubach & Lazarides, 2021).

Instead, the process of future psychologists' professional training requires the formation of such constructs of IC competence among higher education teachers,

such as: the ability to conduct individual consultations using Zoom, Google Hangouts Meet, Bigbluebutton, YouTube Live, Microsoft Teams, Skype and messengers; the ability to conduct psychological webinars, master classes, trainings, online marathons, online quests and online conferences, as well as live broadcasts on Facebook or Instagram; the ability to create stories and informational and motivational videos and mark them on personal YouTube and Telegram channels, as well as in the Tik Tok youth network .

An important role in the professional training in general and the formation of future psychologists' IC competence in particular is played by the professional qualities of higher education teachers and their IC competence. A modern teacher should act as a leader, standard and guide for future psychologists in learning not only the content of their discipline, but also the technological methods of presenting and transmitting information. The teacher should demonstrate by his own example how a practical psychologist can integrate ICT into his professional activity and emphasize its specific features (Bilyk, Sushchenko, Sheremet, Hanuschyn & Bondarenko, 2020).

Thus, the successful integration of ICT into the process of future psychologists' professional training, which requires a high level of teachers' IC competence, their positive attitude towards this process and the ability to overcome obstacles on the way to its implementation, is of great importance for effective distance learning in institutions of higher education. And the lack of study of this important issue led to the definition of the goal and tasks of our experimental research, the results of which are highlighted in this article.

Methodology and methods

According to previous explanations, the aim of this study is to experimentally determine the levels of IC competence and the higher education teachers' attitude in Ukraine to the introduction of ICT in the process of future psychologists' distance learning during the retraction period, as well as the main obstacles to the implementation of this process from the point of view of teachers.

Research tasks are as follows:

- 1) to determine the levels of higher education teachers' IC competence of Ukraine in the process of future psychologists' distance learning during retractions period;
- 2) to identify the attitude of teachers of higher education of Ukraine to the use of ICT in the process of future psychologists' distance learning during retractions periods;
- 3) to determine the relationship between the levels of IC competence and the higher education teachers' attitude of teachers of Ukraine to the use of ICT in the process of future psychologists' distance learning during retractions periods;
- 4) to identify obstacles to the implementation of ICT by teachers of higher education of Ukraine in the process of future psychologists' distance learning.

In order to achieve the set goal and implement the identified tasks, the author's questionnaire "IC competences and the attitude of higher education teachers to the introduction of ICT in the process future psychologists' distance learning" was used in the research.

During retractions period – in COVID-19 lockdown, in 2020, and two years later, in wartime, in 2022, an experiment was conducted online during the distance learning periods with the help of Google forms. Thus, the findings showed how the attitudes towards IC competencies and ICT implementation were changing during the pandemic. 147 university teachers from different Ukrainian regions participated in the research. 84 of them were surveyed at the beginning of the pandemic, and 63 in 2022. Faculty members aged 30-65 from the National Pedagogical Dragomanov University (Kyiv), Taras Shevchenko National University of Kyiv, National Aviation University (Kyiv), Bohdan Khmelnytsky National University of Cherkasy (Cherkasy), Kherson State University (Kherson), Khmelnytskyi National University (Khmelnytskyi), Uzhhorod National University (Uzhhorod), Nizhyn Gogol State University (Nizhyn), Pavlo Tychyna Uman State Pedagogical University (Uman), Separate Structural Subdivision of Higher Education Institution "Open International

University of Human Development "Ukraine" Bila Tserkva Institute of Economics and Management (Bila Tserkva), Ternopil Volodymyr Hnatiuk National Pedagogical University (Ternopil) were surveyed. The experimental research was conducted in compliance with the ethical principles of APA.

Author's questionnaire was developed based on the UNESCO recommendations (UNESCO, 2018). They feature the following competencies of the university teachers:

- Understanding of the ICT role in education.
- Awareness of the curriculums and students' assessment criteria.
- Good command of content and delivery of the courses;
- Digital competency and adequate equipment.
- Ability to organize and manage distance learning or hybrid mode of delivery.
- Constant professional development and following the latest academic and practical trends.
- Taking into account the standpoint of the International Society for Technology in Education ISTE (International Society for Technology in Education), the study determined the following levels of formation of teachers' IC competence:
 - Basic level: teachers are aware of and can use the ICT in the process of future psychologists' professional training in the conditions of distance and face-to-face learning.
 - Advanced level: teachers are ICT in professional activity, aware of modern trends in the market of psychological services.
 - Researcher level: teachers are IC competent, can freely operates the ICT in research, and teach their students of psychology to use those competencies.
 - Expert level: teachers can assess and explore the development of ICT, its integration into university degree programs in psychology, develop new distance learning curriculums, and formal and informal university-level education.

Interpretation of attitude was very important. Based on the definition from the psychological vocabulary (Meshcheryakov & Zinchenko, 2003; p. 602) the attitude is the stable emotion of university teachers caused by the ICT integration

into the learning process reflected in the correlation between their needs and motivations. However, different teachers may treat the same processes differently thus shaping their different attitudes towards ICT integration. The attitudes range from positive through ambiguous to negative.

To achieve the set goal and implement the research objectives, the author's questionnaire was used "IC competences and the attitude of teachers of higher education to the introduction of ICT in the process future psychologists' distance learning". It consists of 10 questions:

1. Are you technologically savvy enough to teach online (create a course, or webinar, work in a webinar room, find information on the internet, re-post the publication, download the file or video). Apply a 10-point scale where 1 is the lowest or "can do nothing" and 10 is "can easily do everything mentioned".
2. Do you teach online? Which online forms do you use? Apply a 10-point scale where 1 is "having a one-time experience", and 10 means "teaching online permanently either as a part of the curriculum regular delivery or employing as an additional instrument".
3. What is your attitude towards distance learning? a) negative; b) positive; c) ambivalent.
4. What is your attitude towards the ICT integration (webinar, online marathon, online master class, etc.) in the delivery of the degree programs in psychology? a) negative; b) positive; c) ambivalent.
5. Are you aware of the following psychological tools: psychological online quest, inline intensive or online marathon? Apply 1 to 10 scales where 1 is the lowest, "I have heard the words" to 10, "Have applied with good results".
6. What is your attitude towards teaching some courses in the format of a psychological quest, online intensive or online marathon? a) negative; b) positive; c) ambivalent.
7. In your opinion, what are the impediments to ICT implementation in distance learning in degree psychology programs?

8. In your opinion, what are the resources necessary for ICT implementation in distance learning in degree psychology programs?
9. Which courses of the degree programs in psychology can ICT are used?
10. Which courses of the degree programs in psychology are the ICT inapplicable to?

Due to the answers, the IC competencies levels of university teachers were identified, as well as their attitudes towards the ICT integration to the future psychologists' distance learning.

Questions 1-6 were developed according to the Likert scale. Questions 7-10 were designed to encourage personal opinions.

Answers to questions 1, 2, and 5 assisted in assessing the IC competencies levels as zero, low, average, and high level. The respondents could earn from 1 to 30 points for those questions that demonstrated their levels of IC competencies.

Zero level (1-7 points). Teachers have no experience in online professional activities and everyday life.

Low (8-14 points). Teachers can apply ICT instruments as they do in everyday life.

Average level (15-21 points). Teachers are advanced internet users and try to apply those skills to teaching.

High level (22-30 points). Teachers are proficient users of ICT, actively use ICT opportunities in the process of providing professional education to students and understand their perspectives.

Obtained ICT self-assessment results were confirmed by the university moderators in charge of quality assurance of distance learning.

Due to questions 3, 4, and 6, university teachers' attitudes toward ICT integration into the delivery of future psychologists' distance learning were assessed. They scored 1 point for the "negative" answer, 10 points for the "positive", and 5 points for "ambiguous". Teachers could score 1-30 points that proved their positive, ambiguous, or negative attitudes.

Negative attitude (from 0 to 10 points) – teachers categorically do not approve of the involvement of modern forms of education, in particular ICT, in the process of future psychologists' professional training.

Ambivalent attitude (from 11 to 20 points) – teachers obey the requirements of higher education, but partially support the introduction of ICT in the process of future psychologists' professional training. In particular, they believe that it is not appropriate to use ICT for all educational disciplines taught to psychology students.

Positive attitude (from 22 to 30 points) – teachers approve the integration of ICT in the process of future psychologists' professional training.

Questions 7-10 were auxiliary. Answers to these questions contributed to the understanding of the factors of the levels of formation of teachers' IC competence, their unequal attitude to the integration of ICT future psychologists' professional training. And also – to identify the main obstacles to the introduction of ICT in the process of future psychologists' distance learning from the standpoint of teachers.

Mathematical statistics methods such as the Pearson's r correlation coefficient and the Fisher's φ^* criterion angular transformation were applied to process hard data. The criterion φ^* at $p \leq 0.01$ is denoted by *, at $p \leq 0.05$ – **. The data obtained were analyzed with SPSS 20.

Findings

Development of IC Competence of the Ukrainian Universities' Teachers in the Process of Future Psychologists' Distance Learning during Retractions Period

First, the results of an experimental study of the development of teachers' IC competence institutions of higher education in the process of future psychologists' distance learning during retractions period are revealed. These results were obtained at the beginning of the pandemic and two years into the pandemic. The author questionnaire "IC competences and the attitude of teachers of higher education to the introduction of ICT in the process future psychologists' distance learning" was used. The initial results were compared to the results obtained two

years after the future psychologists' distance learning had been implemented because of retractions period. Thus, the changes in attitudes were identified.

It should be noted that even before the pandemic, 89% of university teachers considered that implementation of ICT in the future psychologists' distance learning was useful. The reasons for that include digitalization, convenience, saving resources, keeping up with the latest global trends, access to professional activities, staying mobile, various information sources and channels availability, permanent skills improvement, and mastering the skills critical for the provision of professional services, such as online consulting, hotlines, support chats, psychological forums, project psychologists' consulting during the online psychological event, etc. Those formats are especially viable for the future psychologists' distance learning during retractions period. However, some teachers did not support distance learning.

Analysis of the questionnaire responses showed that 75% of teachers had used some ICT in future psychologists' professional training before the COVID-19 pandemic, in fact before distance learning was implemented. They conducted webinars, masterclasses, and online conferences, offered pre-recorded courses and lectures to the students, held online marathons and intensive courses for their clients and had students attend these events, used movies to showcase certain topics, developed courses on the Stepik platform, used Moodle platform, recorded lectures and uploaded them on Youtube, had their Telegram channels for some courses, and even taught online self-presentations skills and fundamentals of online psychological activities to their students.

The results of establishing the levels of ICT use by teachers in the process of future psychologists' professional training before the beginning of the COVID-19 pandemic are presented in Figure 1.

Figure 1 – Levels using ICT teachers in the process of teaching psychologists before the beginning of the Covid-19 pandemic

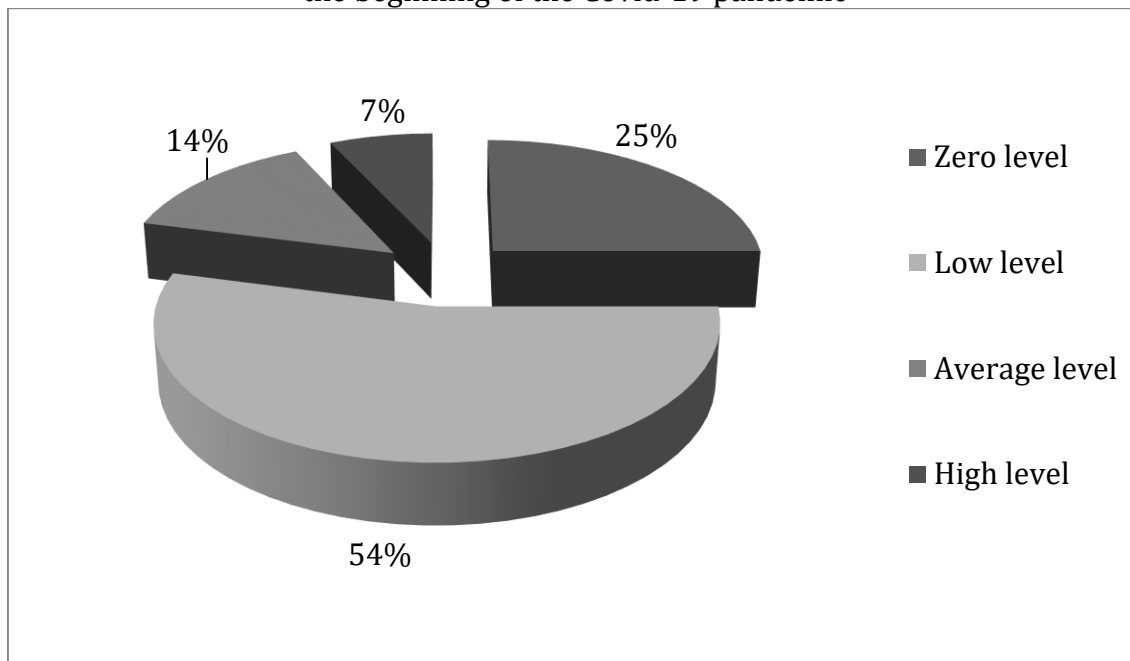


Figure 1 proves that before the beginning of the COVID-19 pandemic, the levels of teachers' skills in the application of ICT of future psychologists' professional training were different.

High level – only 7% of all teachers fall into this group. They recorded their courses, and held webinars, marathons, intensives, quests, conferences, and training online. They also set up messengers' chats to upload assignments, e-literature, references to training videos, etc. Those teachers taught students to conduct their professional activities online.

Average level – 14% of teachers hold webinars, organized training and masterclasses, shared links to the resources related to the courses they taught, offered their own pre-recorded video courses, and used distance learning platforms.

Low level – 54% of teachers offered pre-recorded video lectures or shared their colleagues' educational products.

Zero level – 25% of teachers did not use ICT for teaching courses to psychology students at all.

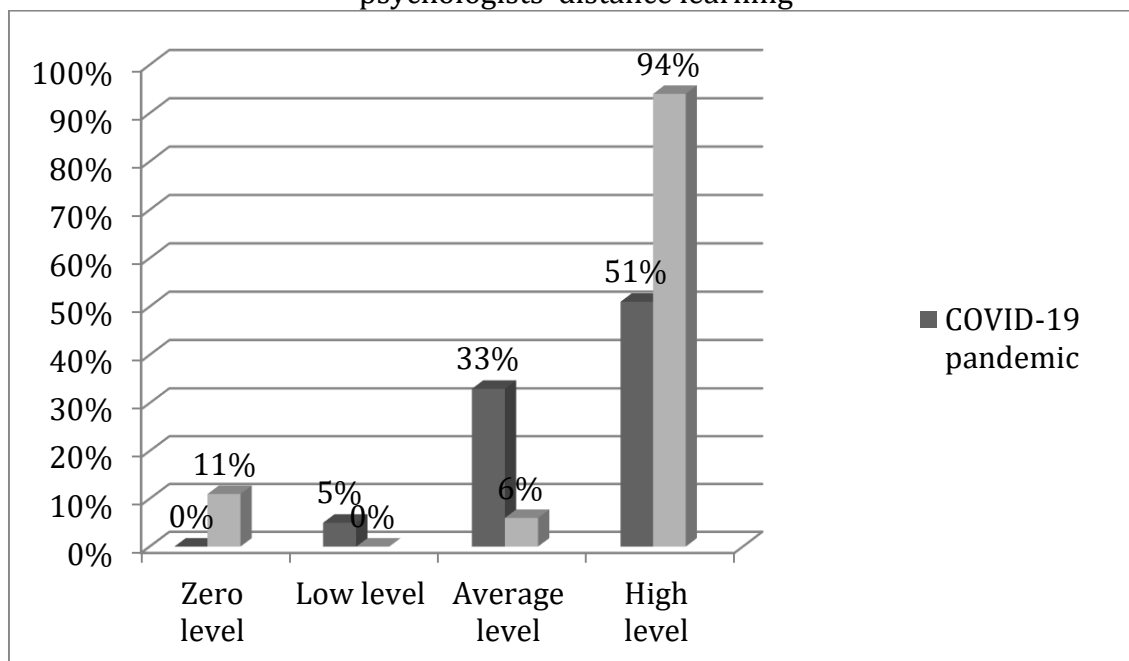
In general, it was established that before the start of the COVID-19 pandemic, the majority of teachers did not use ICT in the process of future psychologists'

professional training at high and average levels. After all, they underestimated the possibilities and importance of online forms of education in the modern world and, especially, with the introduction of quarantine restrictions at the beginning of the COVID-19 pandemic.

However, with experience, at the beginning of the pandemic, most teachers used ICT more often, such as webinars, masterclasses, forums, conference materials, chats for students' support, etc, and teach during strict lockdowns. They were planning to employ those instruments even after lifting all lockdown restrictions. 57% of teachers were going to use materials from online conferences, 52% – do webinars, 40% – do masterclasses, 35% – use forum materials and maintain social network presence, and 15% – psychological online quests, and moderate professional groups on Facebook. The findings prove that some online instruments suit the best of future psychologists' professional training and are employed by teachers more often.

The results of the study of the levels of teachers' IC competence of higher education of Ukraine for the introduction of future psychologists' distance learning during the resstraction time, are presented in Figure 2.

Figure 2 – Levels of IC competence of university teachers in the process of future psychologists' distance learning



As Figure 2 shows, only 11% of teachers did not have any ICT skills at the beginning of the distance learning implementation. They had zero level of IC competencies. They lacked technical skills. They could not employ distance teaching because they could not use internet platforms for teaching and learning. They also could not hold webinars, online conferences, marathons, and quests. This group's representatives could not record and edit videos, upload them to social media, and publish posts. They scarcely used messengers.

At the beginning of distance learning, 5% of teachers belonged to the low-level category. This group is dominated by individuals over 55 years old. They can only use search engines and messengers. That's why it was difficult for them to implement distance learning. It took them a long while to adapt to the new conditions. They could not create and record video courses, lectures, stream, do operate webinar rooms and conference services such as Zoom, Google Hangouts Meet, Skype, Bigbluebutton, YouTube Live, Microsoft Teams, etc. Because they lacked technological skills, they faced serious challenges in employing distance learning. They were not able to facilitate mastering IC competencies for learning and future psychologists' professional activities.

At the beginning of distance learning, 33% of teachers less than 55 had average level IC competencies. They could conduct webinars, online training, and masterclasses, use social media and messengers, and record video and photo content. They quickly adapted to the new reality and started to run distance learning.

At the start of the distance learning implementation, 51% of teachers mostly aged between 25 and 50 had a high level of IC competencies. They could use social networks and messengers, hold webinars, master-classes, online marathons and training, and create photo and video content. They made their video courses, arranged, conducted, and attended online events. That's why they easily adapted to online teaching, helped students to adapt, and helped their colleagues who faced difficulties with mastering distance learning instruments.

The research proved that after two years of employing distance learning because of the pandemic, teachers had substantially improved their IC competencies.

After two years of distance learning, there was no teacher with zero IC competencies. Only 6% of teachers had average levels whereas 94% had high levels of the IC competencies. Positive changes were caused by universities' urgent move to distance learning. For two years teachers had been acquiring distance learning experience due to the pandemic-caused restrictions and full lockdowns, and regular IC competencies training.

Fisher's φ^* criterion angular transformation-based calculations proved positive changes in each group. The F-ratio for the group of teachers with high level was $\varphi^*=6.234^*$, in the average level group – $\varphi^*=4.338^*$, low-level group – $\varphi^*=2.64^{**}$, and zero level group $\varphi^*=4.002^*$ that evidenced statistically substantial changes.

Analysis of the responses to the additional questions of the questionnaire showed three main factors in the lack of IC competencies: Namely:

- 1) lack of systematic courses to improve digital literacy for teachers;
- 2) high level of rigidity of teachers, insufficient desire to develop, acquire new competences, orientate on modern world trends;
- 3) lack of favorable conditions (forced distance learning) for the formation of new competencies. However, due to the emergency and forced online transition, they were forced to master the latest technologies and integrate ICT into teaching activities. And therefore, we can conclude that the conditions in which retractions period (COVID-19 pandemic and wartime) have contributed to the development and improvement of the level of IC competence of teachers.

The IC competencies levels of the Ukrainian universities' teachers identified at the beginning of the implementation of future psychologists' distance learning are aligned with the research findings of 2020. According to those results (Hafifah & Sulisty, 2020), although more than 60% of educators had high levels of IC competencies and often used ICT in teaching, they faced challenges caused by insufficient knowledge. There is a correlation between the levels of the educators'

IC competencies and their professional experience, frequency of using internet-based tools and information, and ICT integration into the learning process. Educators' IC competencies level has proved to depend on their professional experience and effect their professional performance and competitiveness (Hafifah & Sulisty, 2020).

Attitudes of the Universities' Teachers to use ICT in the Process of Future Psychologists' Distance Learning during Retractions Period

This section covers the findings of the experimental study of the Ukrainian universities teachers' attitudes to the ICT application to the future psychologists' distance learning during retractions period. Those results were obtained at the beginning of the distance learning implementation (COVID-19 pandemic) and two years into implementation (wartime). The author's questionnaire "IC competences and the attitude of teachers of higher education to the introduction of ICT in the process future psychologists' distance learning" was used.

The obtained results, which are presented in Figure 3, made it possible to compare the nature of the attitude of teachers of higher education of Ukraine to the use of ICT in the process of future psychologists' distance education during retractions period.

Figure 3 – The Attitude of University Teachers to the Use of ICT in the Process of Future Psychologists’ Distance Learning (%)

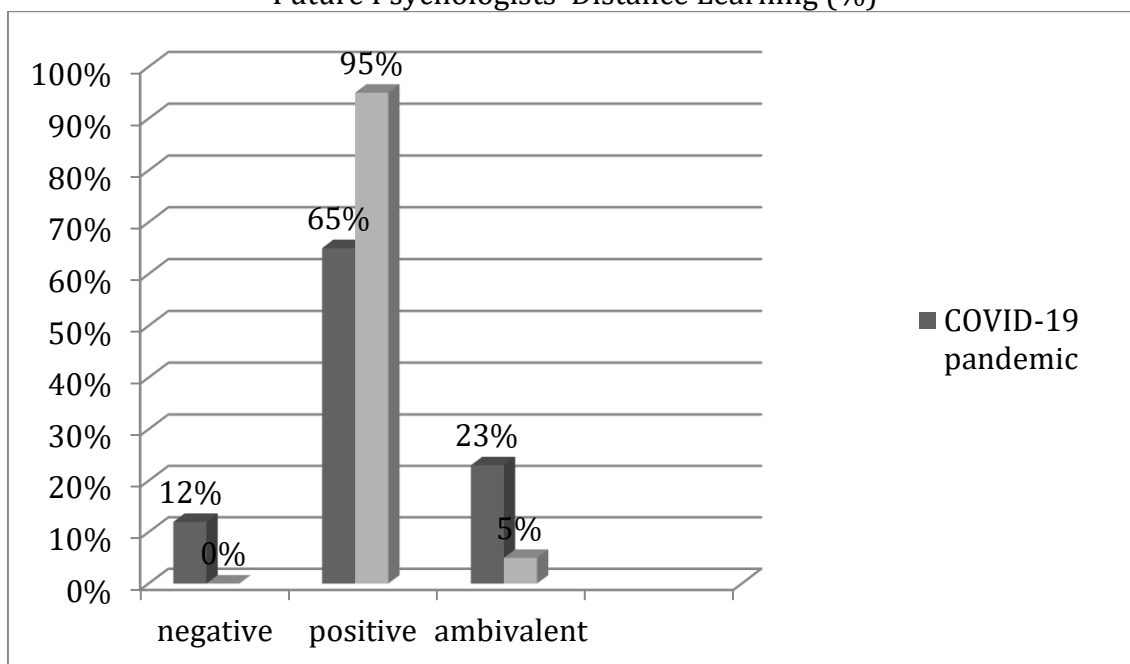


Figure 3 shows that at the beginning of the introduction of distance learning, 12% of teachers had a negative attitude to the use of ICT in the educational process of future psychologists, 23% – ambivalent and 65% – positive.

However, two years after the introduction of distance learning during the wartime, their opinion changed. Thus, it is revealed that teachers are no longer negative about the future psychologists’ distance learning. Instead, 5% of teachers have ambivalent attitude and 95% of teachers are a positive attitude to the use of ICT in the process of future psychologists’ distance learning.

Positive changes in the change in the nature of the attitude of higher education teachers to the use of ICT in the process of future psychologists’ distance learning during retractions period were confirmed by φ^* -criterion of the angular transformation of the Fisher. Statistically significant were the differences between the number of teachers of higher education institutions, in which at the beginning of the introduction and two years after the introduction of distance learning was established positive ($\varphi^*=4.897^*$), negative ($\varphi^*=4.227^*$) and ambivalent ($\varphi^*=3.308^*$) attitude to the application of ICT in the process of future psychologists’ professional training.

The Relations between IC competence levels and University Teachers' Attitude of to the use of ICT in Future Psychologists' Distance Learning during Retractions Period

Due to the research findings, we assumed that ICT competencies levels of the university teachers might depend on their attitudes towards ICT application to future psychologists' distance learning. To test our assumption, we applied the Pearson's r correlation coefficient to the hard data on university teachers' IC competencies and attitudes to the ICT application to future psychologists' distance learning obtained at the beginning of the implementation and two years into it (Table 1).

Table 1 – Correlation Matrix

	IC-C ⁰	IC-C ²	Attitude ⁰	Attitude ²
IC-C ⁰	1			
IC-C ²		1		
Attitude ⁰	0.91**		1	
Attitude ²		0.61**		1

** Correlation is substantial at 0.01 (double).

IC-C0: IC competencies levels of teachers at the beginning of the distance learning implementation;

IC-C2: IC competencies levels of teachers after two years of implementation of distance learning;

Attitude0: Teachers' attitude to ICT implementation to future psychologists' distance learning at the beginning of the distance learning implementation;

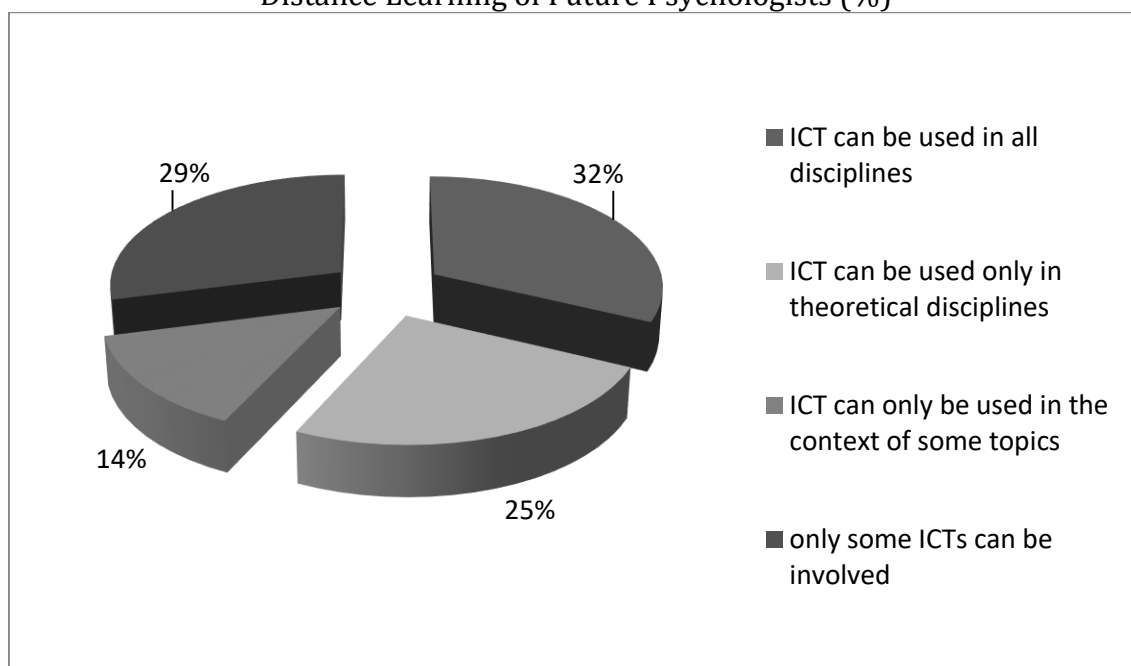
Attitude2: Teachers' attitude to ICT implementation to future psychologists' distance learning after two years of its implementation.

Table 1 reflects data calculated with the help of the Pearson's r correlation coefficient that proves the substantial direct correlation between the university teachers' IC competencies levels and their attitude to future psychologists' distance learning at the beginning of the implementation process ($r_{xy}=0.91$) and after two years of implementation ($r_{xy}=0.61$). The Fisher's φ^* criterion angular transformation numbers obtained during the study prove that teachers with intermediate and advanced levels of the IC-skills were positive about ICT application to distance learning at the future psychologists' distance learning because they understand its viability during retractions period.

The Main Obstacles to the Implementation of Future Psychologists' Distance Learning from the Standpoint of University Teachers

Due to the analysis of respondents' answer to the additional questions of the questionnaire, the attitude of teachers to ICT implementation in the future psychologists' distance learning process. The results of the study are presented on Figure 4.

Figure 4 – The University Teachers' Standpoint on Integration of ICT in non Distance Learning of Future Psychologists (%)



The data presented in Figure 4 shows the variety of teaching faculty opinions on ICT integration:

- 32% of university teachers believe that ICT is applicable to all courses of the future psychologists' professional training;
- 25% of teachers believe that ICT is applicable to several courses, especial theoretical, such as general psychology, developmental psychology, social psychology, history of psychology, psychological consulting, psychological assessment, computer diagnostics, social psychological training, business training techniques, etc;

- 14% of teachers think that the latest delivery methods are only applicable to teaching several topics from the courses, e.g. use of films for psychological consulting, psychological assessment, psychology for forensics (legal psychology), political psychology, etc;

- 29% of teachers consider that only a limited number of ICT are applicable to teaching at the future psychologists' professional training, e.g. webinars, conferences, and quests can be used in lectures and workshops, whereas training and masterclasses can be used for workshops or practice classes.

Teachers do not think ICT cannot fully substitute face-to-face learning. In their opinion, students can master critical, flexible, and deep thinking, and a broad approach which is so important for psychologists only in face-to-face learning. They do not believe that the distance learning format can secure the quality of group work which is critical for the development of a personality that is the main tool of practicing psychologists.

That it's why teachers should find their "best combination" of online and offline teaching methods for face-to-face programs and the most efficient ICT for future psychologists' distance learning.

At the beginning of the research, some teachers were sure that ICT were not applicable to some courses; and those courses could not be taught in a distance learning format. They believed that practice-related courses, such as body-oriented courses, breathing practices, self-knowledge training, medical psychology, psychological correction, psychological consulting, psychotherapy, etc. cannot be taught through distance learning format. However, after two years of distance learning implementation, 70% of teachers thought that all courses could be taught online whereas 30% were convinced that workshops should be conducted face-to-face.

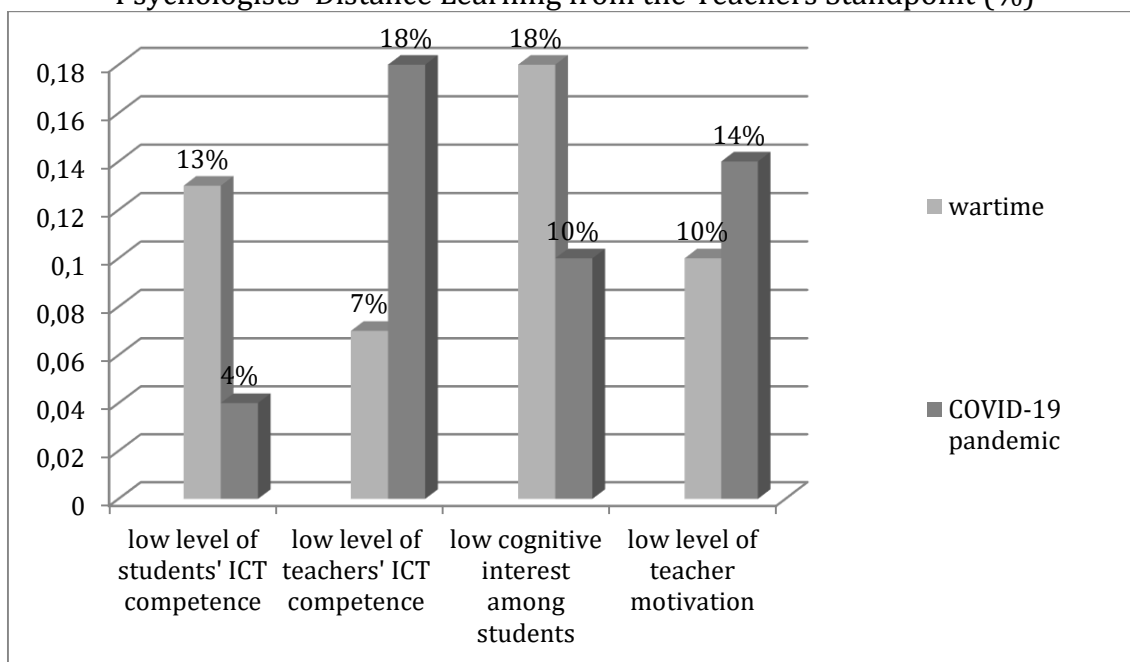
72% of teachers are aware of such online professional instruments as psychological online quests, online-intensive, online marathons, and online-game. 90% of teachers think that those instruments can be used for the teaching of some topics or courses. However, only 14% of use online marathons for teaching but they do not use quests, intensives, or games. 21% teachers use those instruments for

private practice. They argue that psychological quests or marathons are online consulting instruments. That's why they apply those instruments to teach by example. They think that by employing those instruments they raise students' interest in the topics, stimulate students' brain activities, creativity, and critical thinking, and provide motivation for better learning.

Due to the use of the questionnaire in the research, the following challenges faced by the faculty during the implementation of ICT were identified:

- Both teachers and students lacked computers on the university premises.
- Regular blackout.
- Air alarms.
- Lack of quality internet connection.
- Poor quality and overload of the educational platforms.
- Lack of the teaching faculty's technological experience.
- Low teachers' communicative competence in the media space.
- Lack of knowledge and skills necessary for interactive learning and feedback provision.
- Teachers' time deficit disabling them to launch distance learning because of the overload with other tasks.
- Low level of teaching faculty's professional development motivation.
- Teaching staff inflexibility.
- Staying in the comfort zone.
- Teachers' "tunnel thinking" and low creativity.
- Low level of students' intellectual curiosity and motivation to master the profession and develop as a professional.

Figure 5 – Groups of Obstacles on the Way to the Implementation of Future Psychologists’ Distance Learning from the Teachers Standpoint (%)



After the processing of the responses, five main groups of impediments to future psychologists’ distance learning were defined. The results are presented in Figure 5.

The data in Figure 5, prove that most of the teaching faculty, namely 54% at the beginning of the pandemic and 42% in wartime think that lack of equipment mainly impedes the implementation. The hard data is not substantially different statistics-wise, with an F-ratio of $\varphi^*=1.482$. Considerably fewer respondents or 17% of teaching faculty at the beginning of the pandemic and 7% two years later in wartime did not believe that the low level of their IC competencies impeded distance learning implementation. The difference between the data is substantial ($\varphi^*=2.202^{**}$).

10% of respondents at the beginning of the pandemic against 18% in wartime thought that a low level of psychology students’ intellectual curiosity impeded distance learning implementation. The difference in data was statistically unsubstantial ($\varphi^*=1.416$). Teachers considered the lack of intellectual curiosity to be the result of shortcomings of distance learning. The range of shortcomings included lack of face-to-face communication; deterioration of teamwork skills;

abuse of copy/paste of the information; deterioration of creative and critical thinking; no offline group psychological activities; worsening of eyesight; frequent headaches, etc.

Slightly fewer respondents, 14% at the beginning of pandemics and 10% in wartime considered low motivation of teaching faculty or their reluctance to master – ICT to be an obstacle to distance learning implementation. The discrepancies between the two sets of data are statistically unsubstantial ($\varphi^*=0.894$).

The smallest number of respondents or 4% at the beginning of the pandemic and 13% in wartime thought the low level of students' IC competencies impede distance learning implementation. The hard data differ substantially statistics-wise ($\varphi^*=2.082^{**}$).

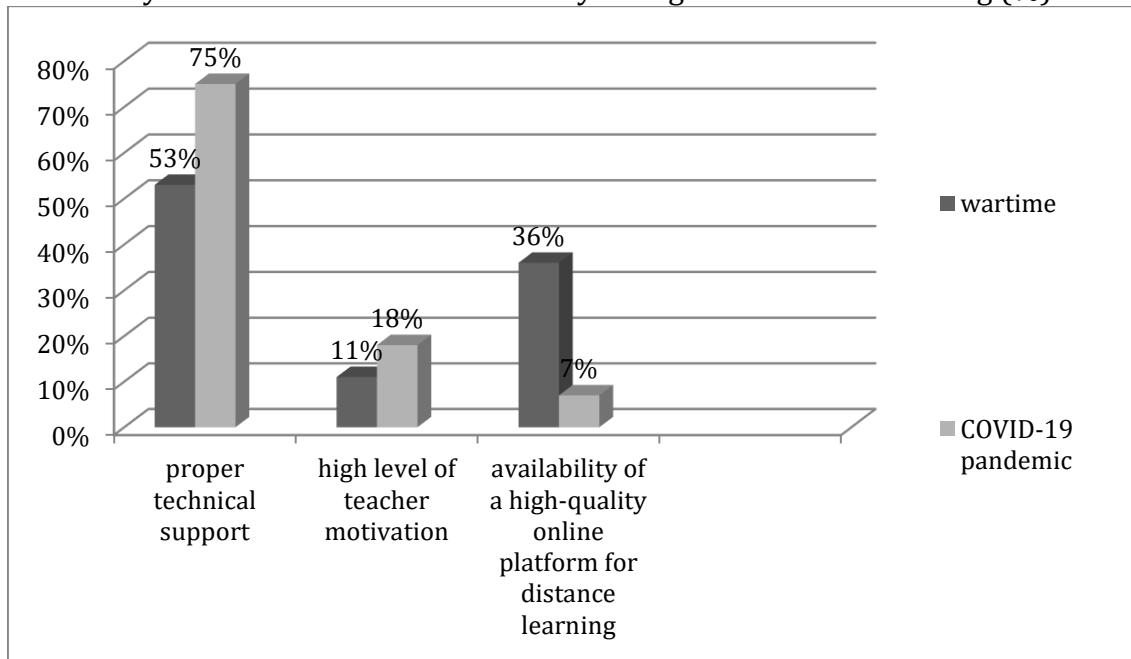
The results obtained regarding the low cognitive interest and low level of future psychologists' IC competence during distance learning at the beginning of the pandemic were confirmed in our previous publication. It was also established that the cognitive interest of future psychologists is related to the quality of distance learning (Ponomarenko & Zelenin, 2022).

Thus, the following five groups of impediments to the implementation of ICT to future psychologists' distance learning are identified:

- 1) Lack of equipment in universities and dormitories.
- 2) Low level of teachers' motivation.
- 3) Students' low intellectual curiosity.
- 4) Low teachers' IC competence.
- 5) Students' IC competencies level.

The teaching faculty's opinion on coping with impediments to implementation of the distance learning was obtained with the help of the questionnaire (see Figure 6).

Figure 6 – The Standpoint of Teachers Regarding Overcoming Obstacles on the Way to the Realization of Future Psychologists' Distance Learning (%)



The data in Figure 6 shows that 75% of teaching faculty at the beginning of the pandemic and 53% in wartime thought that equipment availability enabled implementation of the distance learning into degree programs in psychology. The difference between the two sets of data is substantial ($\varphi^*=2.85^*$).

A much smaller number of respondents (18% at the beginning of the pandemic and 11% in wartime) are inclined to the opinion that for the successful implementation of future psychologists' distance learning, it is important to increase the level of motivation of teachers and strengthen their desire to learn to use ICT. The differences between these quantitative data are statistically insignificant ($\varphi^*=1.17$). The researchers believe that a teacher should have well-developed leadership qualities to ensure a quality educational process in any format (assertiveness, active life standpoint, self-confidence, sociability, openness to new experiences, willingness to take risks, high adaptability, etc).

7% of teaching faculty at the beginning of the pandemic and 36% in wartime were sure that the establishment of the quality online educational platform at the universities can provide for effective distance learning for degree programs in

psychology students. The difference between the two sets of data is statistically substantial ($\varphi^*=4.548^*$).

Thus, from the teachers' point of view of, high-level ICT (equipment), high level of teachers' motivation, and quality educational online platform were critical for coping with the impediments to implementation of the distance learning into degree programs in psychology.

Discussion and conclusion

The integration of ICT in higher education is accompanied by a number of obstacles related to the educational process and its subjects. Indeed, the success of ICT integration primarily depends on the difficulties faced by teachers.

Similar research was conducted in Palestine (Qashou, 2022). The teachers of the institution of higher education were asked to establish a hierarchy of obstacles that prevent the implementation of ICT in the educational process. According to the results of the study, the following ranking of obstacles was revealed (from the most significant to the least significant):

- 1) obstacles related to technological infrastructure – technical equipment of higher education and students;
- 2) obstacles related to the university – the institution's organizational activities to provide distance learning;
- 3) obstacles related to students – interest of the students themselves in learning;
- 4) obstacles related to the curriculum – educational programs were not revised and adapted to the new format of work;
- 5) obstacles related to teachers – teachers are not interested in developing and acquiring new knowledge and competence.

Instead, the conditions for the successful formation of IC competence among teachers who train future psychologists in institutions of higher education are defined as:

- implementation of a system of improving the qualifications of teachers in the field of digital competence and new trends in the market of providing psychological services;
- creation and continuous development of personal educational environments for students and teachers;
- development of the regulatory framework and availability of appropriate technical equipment for educational institutions and dormitories;
- allocation of time for the transformation of educational disciplines [14].

The results of the study made it possible to draw the following conclusions. The problem of the development of teachers' IC competence during distance education of students has become extremely relevant and socially significant for the states of various countries of the world, and in particular Ukraine, during the last two years in connection with retractions period (COVID-19 pandemic and wartime). The level of teachers' IC competence contributes to the effectiveness of students' distance learning of higher education or becomes an obstacle to it. The teacher's IC competence determines his ability to independently and responsibly apply ICT in the process of future psychologists' distance learning.

As a result of the determined relevance, significance and lack of research, the subject of our experimental study was teachers' IC competence and the attitude to the introduction of ICT in the process of future psychologists' distance learning of Ukraine during retractions period, as well as the main obstacles to the implementation of this process with standpoint of teachers. Experimentally, it was found that during two years of distance learning, the number of teachers with high and average levels of IC competence increased statistically significantly and decreased with low ones. A statistically significant increase in the number of teachers with a positive and a decrease in the number of teachers with a negative and ambivalent attitude towards the use of ICT in the future psychologists' distance education was revealed. A strong and direct relationship between the levels of teachers' IC competence and the attitude towards the use of ICT in the process of future psychologists' distance learning is also determined.

From the teachers' point of view, the main obstacles to the implementation of future psychologists' distance learning are the following: lack of proper technical support (high-level ICT); low level of teachers' IC competence; low level of students' IC competence; reluctance of teachers to use ICT, low level of cognitive activity of students. Over the course of two years of research, a statistically significant increase in the number of teachers who believe that the low level of teachers' IC competence and the low level of future psychologists' IC competence hinders the implementation of distance learning has been established.

According to the teachers, to overcome the mentioned obstacles, high-level ICT, a high level of teachers' motivation and a separate high-quality online platform for a higher education are needed. During the two years of the study, a statistically significant increase in the number of teachers was recorded, who attach importance to the availability of appropriate technical support (high level ICT, a separate high quality online platform for a higher education institution) to overcome obstacles on the way to the implementation of future psychologists' distance learning.

We see prospects for further research in the development of effective strategies and incentives for increasing the level of teachers' IC competence and motivation, as well as providing ICT for higher education of Ukraine.

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