

Development of Students' Professional Skills and Institutions of Higher Education during the Pandemic

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Received: February 2, 2023

Accepted: March 5, 2023

Online Published: March 17, 2023

doi:10.5430/jct.v12n2p1

URL: <https://doi.org/10.5430/jct.v12n2p1>

Abstract

The article is devoted to evaluating the pedagogical process of students' professional skills development during the pandemic. The study aims to investigate the formation of students' professional skills and determine their level of studying during a pandemic. The author's team surveyed to obtain empirical data on students' professional skills development. Surveying students and teachers were carried out during distance learning during a pandemic. The questionnaire results show the advantages and disadvantages of distance learning from the student's point of view. It is essential for education, built on a student-centered learning model. The main advantages of distance learning are a convenient schedule, combining study with work, acquiring new skills, the ability to do favorite things, and increasing motivation for self-education. Distance education's disadvantages in a pandemic include technical problems, including the lack of Internet, the difficulty of learning self-organization, and the low information and computer skills among students and teachers. The study results showed that students and teachers need support and motivation for distance learning.

Keywords: learning skills, studying during the pandemic, distance learning, students' professional skills

1. Introduction

Every developed economy needs highly qualified specialists who can make important decisions and take risks and responsibility to support and implement innovations. In recent years, the demand for such specialists has grown. At the same time, enterprises, understanding the value of such employees, try to reward them adequately. However, even though the demand for highly qualified specialists is high, there are not enough of them on the market. It is caused by their training problems and the lack of an internal motivational component that brings up a competitive specialist in a person (GfK Ukraine (Project), 2017). These problems determine the study's relevance, exacerbated in a pandemic when the labor market needs highly qualified specialists and labor resources that can work remotely, manage teams, and not disrupt production processes.

In building an educational program, each higher education institution is based on achieving the main goal - training highly qualified personnel who can create competitive products. Education always responds to the changing economy and market demands to train relevant specialists (Imanova, 2021). In such conditions, teachers should not just provide basic professional knowledge. They must use new methods that allow working productively and meet the latest pedagogical management standards (Bakhov, et al., 2021).

In this context, pedagogical management is perceived as a set of tools, methods, and principles that allow optimizing

material and human resources to achieve the set goals (Bloom, 2018).

The study's novelty is based on the fact that modern teachers should use new teaching methods in their pedagogical activities, as the old or traditional ones do not meet the needs of the labor market and the expectations of modern youth (Mukhtar et al., 2020).

2. Literature Review

Many scientific kinds of research are devoted to the problems of education development. However, all of them can be classified in certain areas. In particular, a large number of works are devoted to online learning. Another part of the work is devoted to the internationalization of education, bringing it to the global level (Oleshko & Rovnyagin, 2020).

In the context of the pandemic, educators worldwide have realized that they must explore new approaches to the organization of the educational process, as otherwise, they risk losing their jobs. Practice shows that even in the most challenging conditions (including quarantine), people strive to continue their development and receive an education. Therefore, society quickly found new ways of education - using the distance mode. Teachers have received a kind of motivation that allows them to:

- keep the place of work and salary,
- maintain the pre-crisis safety and welfare level,
- ensure health care,
- develop the latest technologies in the educational process,
- promote social and emotional competence (UNESCO, 2020b; UNESCO, 2019).

Even though many new approaches to educational processes have been introduced over the past three years, it is worth noting that, in general, the pandemic negatively affected education. As a result, theoretical assumptions about educational development have become only a scientific basis that requires further research (Brammer & Clark, 2020). Today we can confidently say that the practice of distance teaching is not perfect; it requires constant development and solving new problems that arise constantly (Tuncer & Karataş, 2022).

People quickly adapt to a changing environment and, in such conditions, have formed a new society that operates according to new rules and standards (Brammer & Clark, 2020). Many people are convinced that education depends not so much on attending a higher education institution as on self-education. As a result, the trust level in traditional education in such conditions is decreasing. At the same time, the trust level in non-traditional education is growing and shows worthy results. That is why such researchers as M. Aboobacker, R. Pulikkottil, and K. Praveenlal (2020) believe that professional readiness results from professional and specialized training appear to a greater extent during self-learning. In addition, the ability to self-educate is becoming one of the important competencies modern employers require.

E. Southgate shows another approach to the definition of professional activity. The author notes that professional activity is a state of human activity that allows performing work effectively. At the same time, effective work should take place through a personal need to be competitive - the best among other employees. Not only students but also every teacher should be aware of the need for self-improvement. It is essential to improve and apply the acquired skills in professional activities. All these skills form a person's competence, which is determined by the skills and knowledge necessary for the effective professional activity (Southgate, 2020).

V. Kukharensko and V. Bondarenko (2020) also believe that competence is the ability of a person to perform specific difficult (nonstandard) work processes. The authors note that every person can do any job. However, this does not mean that the same person can perform each job effectively (Jacob, 2020; Nugroho, Ilmiani, Rekha, 2021). The effectiveness of work is determined by the ability to bring improvements to it, mainly by applying innovative approaches. The pedagogical activity needs the same innovations. It requires socio-economic changes and updating education policy based on changing the teachers' attitudes toward the educational process. Teachers should introduce new ideas and innovations that can change traditional approaches to education and move to a new level that corresponds to the modern world.

According to the annual report UNESCO for 2019, the world is facing an educational crisis for which society is unprepared. As a result, this will lead to social and educational inequality. Two factors cause such inequality.

1) People who can learn independently will obtain the necessary knowledge, as information technology allows them to do it without restrictions. At the same time, people who are not capable of independent learning and self-development

will be quickly pushed out of the labor market.

2) It is expected that there will be significant discriminatory processes during the work of educational institutions when online education is available to people with sufficient material and technical resources. This problem is especially relevant for poor African countries, where society does not have the opportunity to study remotely.

According to the UNESCO Annual Report 2019, the current education crisis will increase educational inequality worldwide. Inequality is already a severe problem in education today, and over time, this problem will become even more significant. Changes in the operations of educational institutions are expected to cause disproportionate harm to vulnerable and disadvantaged students who rely on these institutions. To receive distance education, they will be forced to migrate to other regions, look for ways to increase their income, etc.

Based on these problems, the world must solve several new challenges, including reforming the education system following the medical state (and other global factors) (DeArmond et al., 2023). A general financial and economic response is needed to facilitate distance education even for the most vulnerable segments of the population (Stoian et al., 2022). Overcoming the education crisis is a priority for developing countries that need highly skilled workers and underdeveloped countries. Without a sufficient education level, they cannot improve their economic situation and develop (UNESCO, 2020a).

However, at the same time, society has the idea that the crisis has become not just a problem but a driving force that allows the rapid development of any environment, including the educational one. Various factors cause the need to develop educational processes during the crisis, and the main ones are

- problems of learning at home both for students, teachers, and parents;
- a threat to civil freedom due to quarantine and various social restrictions on communication and movement;
- problems with students' academic mobility;
- deterioration of the psychological state and mental health of all participants in the educational process;
- changing conditions for the development of youth and children, taking into account the need to overcome long distances;
- the threat of hunger and domestic violence faced by a large number of children who remain at home to study;
- the emergence of a significant number of migrants in Europe who need the opportunity to receive education;
- problems of adaptation of older teachers to online teaching. (Barzylovykh, 2020)

The authors S. Berezhna and O. Prokopenko (2020) note that in the next five years, the importance of online education will increase significantly. In twenty years, the new generation will use modern educational technologies, which are based not just on the use of digital technologies but on the use of augmented and virtual reality and other innovations that may not have been known until now.

Consideration of the psychological characteristics of each student is a challenging pedagogical and psychological task in building curricula for distance learning. Teachers must build such communication models when distance communication becomes enjoyable and learning becomes effective (Kukharensko & Bondarenko, 2020).

Thus, the rapid development of the global market and changes in the market environment requires new qualification and personal characteristics that are the main requirements for future specialists.

The study aims to develop directions for solving the distance education problems based on assessing the peculiarities of students' training during distance learning in the context of the covid-19 pandemic.

3. Materials and Methods

The empirical research is based on a survey among students studying in higher education institutions in Kyiv, particularly at Kyiv National Economic University, the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute," and the National Aviation University. The research was conducted during full-time studies when students attended lectures. The research period falls from 2019 - 2021. The total number of respondents is 182 people, who are students of humanitarian and technical specialties and 88 teachers of higher education institutions. Several tasks were solved within the survey:

- the student's knowledge level by 2019 in the conditions of distance learning during the quarantine period was assessed.

- the shortcomings of distance learning were identified, in particular how distance learning affected the quality of knowledge gained.
- identified the main aspects in which teachers' working conditions should be optimized.

Respondents had to rate the questions asked. The scoring scale ranges from 1 to 100 points, where 100 points are the highest score. After collecting the information, the average score of one respondent is determined, which can be perceived as a general attitude to a particular problem.

4. Results

One of the key tasks of the survey was to determine how much the education quality had changed before and after the introduction of distance learning. The key indicator is the level of professional competencies of students. The results of the study are shown in Figure 1.

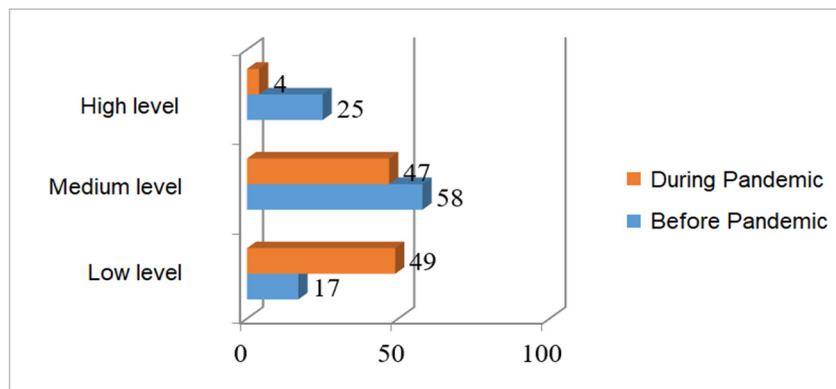


Figure 1. Professional Competence Level of Students, %

Students were asked how they evaluate the effectiveness of the process of providing professional skills, taking into account the efforts of teachers and the efforts of themselves to learn the material. The key components of learning effectiveness are the evaluation of readiness to acquire new knowledge, the level of effort to provide information, and the overall level of learning effectiveness. The study results are shown in Figure 2.

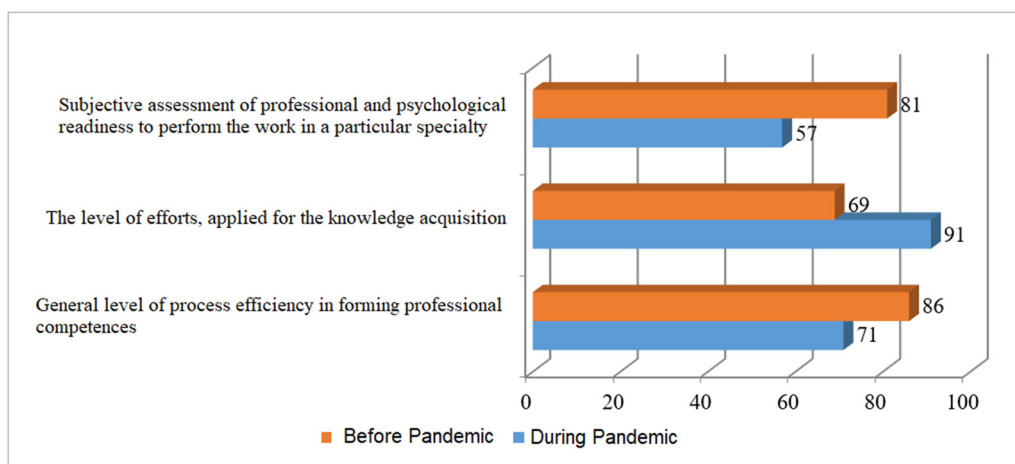


Figure 2. Satisfaction with the Effectiveness of Students' Learning before and after Distance Learning during the Pandemic, %

In general, it should be noted that the overall effectiveness of distance learning is lower than traditional learning. It is fully due to a decrease in the students' and teachers' readiness to acquire new knowledge using Internet technologies. On the other hand, it should be noted that students noted an increase in efforts to obtain the same level of knowledge by 22%. It is quite a powerful feeling, which suggests that not every student will be able to increase their efforts to study if

the educational process is complex during the traditional training. At the same time, the diversity of responses; for example, for many students before the pandemic, that readiness to study was a more decisive factor affecting performance. While after the pandemic, students believe that preparedness alone is not enough, it is also necessary to make an effort to gain knowledge on their own.

Students also identified the main advantages of distance learning, as shown in Figure 3.

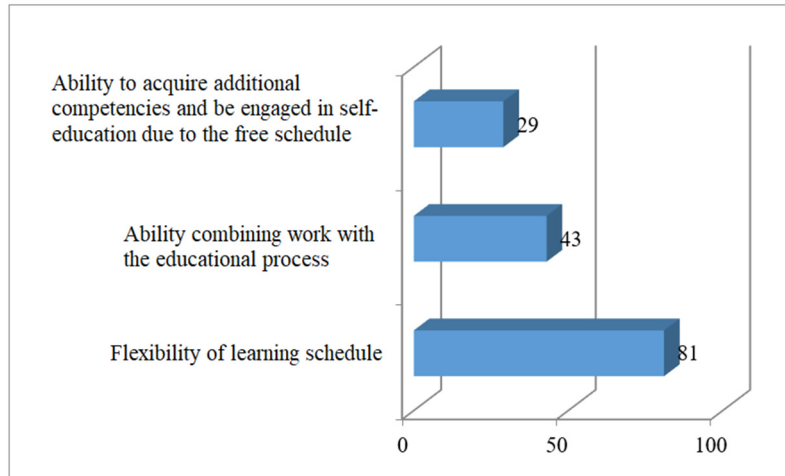


Figure 3. Main Advantages of Distance Learning, %

As can be seen from Figure 3, students believe that the flexibility of the learning process is the greatest advantage of distance learning, which allows them to do other things in parallel with education. Thus, for many respondents, the opportunity to combine education with work is important. In the context of distance education, most students get this opportunity, which makes higher education more accessible to everyone. About 29% noted that it is important to have the opportunity to receive more information than is provided by the program of the higher education institution, which allows them to study and improve their professional competencies independently. At the same time, students identified other advantages, for example, the possibility of additional communication with students and teachers, the opportunity to study additional resources, etc.

The study also identified the main disadvantages of distance learning during the pandemic. The main ones are shown in Figure 4.

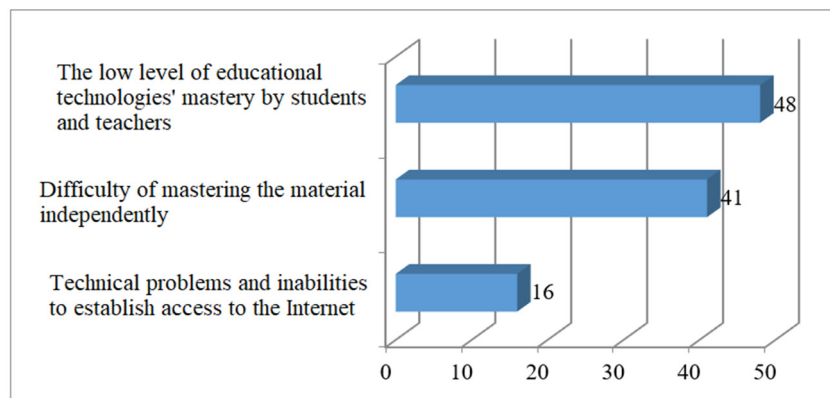


Figure 4. Main Disadvantages of Distance Learning, %

The survey results show that the main disadvantage of distance education is the low level of teachers' technical training. This problem was shown by about half of the respondents, which indicates that higher education institutions and government institutions should pay more attention to it. Another significant problem is the difficulty of self-comprehension of the material. This is again a problem of methodologies and methods of education that are not focused on students' self-education. Teachers should create materials that are easy to understand in theory, and the

theory can be tested on the example of practical tasks. For Kyiv residents, the Internet problem and constant access to remote platforms are not crucial. About 16% indicated this problem as key. Obviously, if the survey was conducted in regional universities, the figure would probably be much worse.

In turn, teachers also agreed to take part in the survey. As a result, they also have their own opinion about distance education in higher education institutions. The results of the survey of teachers are shown in Figure 5.

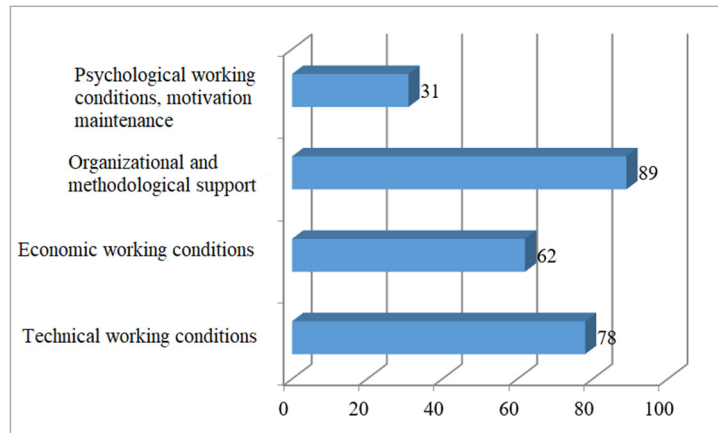


Figure 5. Distance Learning Problems Identified by Teachers, %

According to the survey results, it was found that the worst for the teacher is the process of organizing training, as well as methodological tools that are not ready for the presentation of information without the possibility of practical training by traditional methods. Teachers also note that the technical part of distance education is also one of the most critical problems. Obviously, it is connected not so much with technical support but with the peculiarities of distance learning via the Internet. Also, the key problem is the problem of economic nature and the problem of psychological readiness to study in the conditions of distance work.

Students and teachers faced the challenges of adapting to distance learning during a pandemic. The results of the survey are shown in Figure 6.

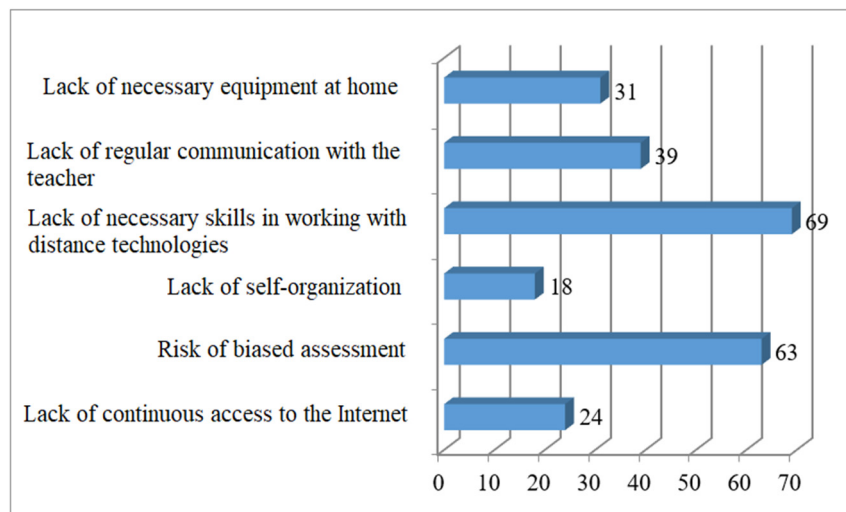


Figure 6. Adaptation Difficulties to Distance Learning, %

In fact, this question is a clarification of the previous one, and it once again confirms the problem that teachers have technical difficulties with the organization of the educational process through online lectures. There is also a significant problem of lesson flexibility when the schedule is shifted. Furthermore, teachers say that they do not have enough equipment to conduct distance lessons, and the Internet may not always work well. In addition, teachers identified

psychological factors, including a lack of communication with the team and problems with self-organization.

The difficulties of organizing distance learning allow us to show the critical problems of technical and technological nature. The main ones are shown in Figure 7.

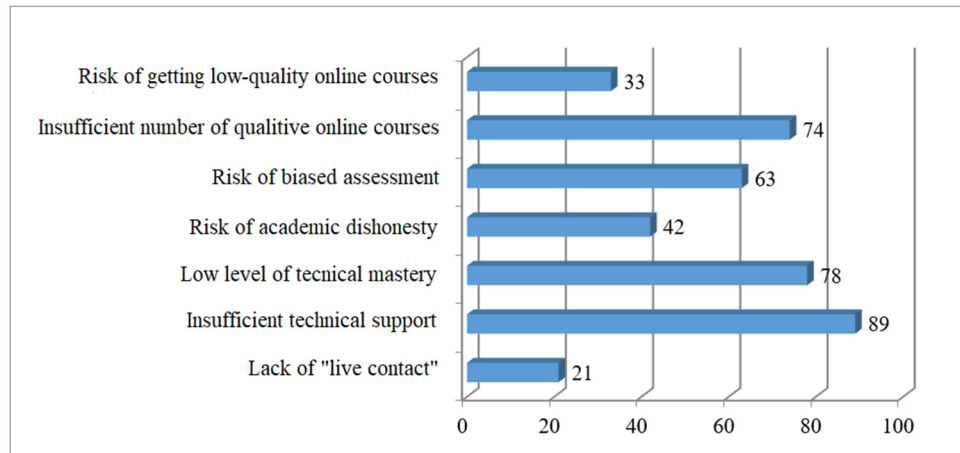


Figure 7. Distance Learning Difficulties from the Point of View of Teachers, %.

Teachers confirm that the biggest problem is technical, and they also identify the problem of computer competencies' lack of solving minor technical issues quickly. Teachers would like to get this knowledge from online courses, but there is a lack of them.

5. Discussions

The benefits of distance learning are widely studied in the literature. Thus, studies by S. Brammer and T. Clark (2020) have shown that online education is important in building effective learning strategies. Scientists have concluded that distance learning involves constant communication processes that are not limited in time and space. As a result, it is a more effective learning method than the traditional one. At the same time, distance learning is often combined with mixed learning, which allows for solving many psychological problems students face while learning at home.

Distance learning can solve some different problems. Oleshko & Rovnyagin (2020). note that online education can solve some problems that are unrelated to education. The need for distance learning develops Internet technologies at home and in schools. Distance learning forces teachers of traditional universities to think innovatively and use new and creative approaches to lesson construction. Third, distance learning allows subventions for public educational institutions, which can be used to update material and technical support. Finally, online education creates a new methodological apparatus for effective learning.

Modern professional education also challenges the traditional national higher education system. In the context of Covid-19, the whole world is faced with the problems of labor resource renewal, and quite often, specialists from other countries are involved in production processes. In such conditions, education has the opportunity to train specialists not only at the national but also at the international level. For this purpose, it is necessary to create professional development conditions and improve foreign language skills.

Despite the advantages and wide opportunities of distance learning, this way of education is accompanied by problems. Although distance education is an incentive for development, it is becoming a key obstacle for many countries due to the critical lack of funds. Distance education requires additional investments in technical and material renovation of educational institutions.

Inclusive educational institutions that cannot transfer the educational process to new standards have problems with distance learning (Oleshko & Rovniagin, 2021).

The main opportunities for the development of online education in Ukraine include

- development of inclusive education through online platforms;
- integration of rural areas and small settlements into the general standards of education, technology, and

communications, creating additional opportunities for students from the regions.

- the emergence of new specialties and specializations in personnel training based on changes in the labor market and through the emergence of new specialties;
- training personnel among the diaspora abroad based on domestic educational institutions and platforms for education.

The main ways to solve the problems of distance learning are based on the organization of personnel and administrative and financial support. At the same time, the state can facilitate the involvement of large corporations in the development of education, which requires constant staff renewal and highly qualified specialists.

Vocational training in such conditions becomes part of the pedagogical process of acquiring knowledge and skills that can be implemented within a particular production or industry cycle. Qualified competitive personnel with a high level of professional knowledge will improve any production processes in Ukraine and abroad (Berezhna & Prokopenko, 2020).

However, along with the areas mentioned above for improvement of distance education, there is a single factor that is the most essential - psychological maturity. According to V. Kukharenko and V. Bondarenko, psychological maturity allows students to realize their value in society and spend their time as efficiently as possible to realize themselves in it. Therefore, the whole learning process should be built to achieve the overall goal of forming the personality of the future specialist, taking into account their individual and psychological characteristics (Kukharenko & Bondarenko, 2020). It is worth noting that, according to the recommendations of the European Commission, the pedagogical system of future specialists' training is carried out by a set of organizational structures that apply different principles, content, methods, and forms of the various means of forming the psychological readiness and students' professional quality. At the same time, appropriate methods and criteria for assessing professional qualities and students' readiness for professional activity are applied (European Commission, 2022). Under such conditions, self-education is one of the most critical competencies of future specialists, expressed by motivation for professional development, provided that professional training is properly organized. Such an organization involves the introduction of pedagogical incentives and student participation in research.

6. Conclusion

According to the study results, we can conclude that current educational conditions require students to have independent learning skills. These skills are also the most demanded in the labor market. Due to the impact of the Covid-19 pandemic, the higher education system needs to be reformed and adapted to new global challenges. Studies have shown that students are aware of their own social importance and are trying to acquire the skills they will need in the future for their work. At the same time, these skills should not contradict their values so as not to create psychological obstacles in the learning process.

Students and teachers need to be adapted to the conditions of distance learning, as the last ones often do not have a sufficient level of computer literacy to ensure effective distance learning. The survey showed that one of the priorities of the government authorities in the context of the pandemic is the creation of special programs for teachers to improve the computer literacy level and create effective systems for learning in secondary and higher education institutions.

Future specialists should improve their skills and independently initiate the additional study of the necessary information from open sources within the higher education institution and other sources. In turn, government agencies should promote the development of distance education by developing psychological maturity for self-education. Educational institutions and the government should create conditions for access to educational information on equal terms for all residents. It is significant for the rural population, which often has technical problems that do not allow them to receive education by distance. In current conditions, to ensure the educational process and professional competence, it is necessary to create comprehensive interaction programs between the population, educational institutions, and authorities. Particular attention should be paid to the organization of working conditions and technical support of training and work.

However, the study does not show all the problems in distance learning. That is why further perspective research will study the possibility of students' adaptation and integration into distance learning.

References

- Aboobacker, M., Pulikkottil, R., & Praveenlal, K. (2020). The Pedagogical Shift During COVID 19 Pandemic: Online Medical Education, Barriers and Perceptions in Central Kerala. *Journal of Medical Education and Curricular Development*, 7, 1-4. <https://doi.org/10.1177/2382120520951795>
- Bakhov, I., Opolska, N., & Bogus, M., et al. (2021). Emergency Distance Education in the Conditions of COVID-19 Pandemic: Experience of Ukrainian Universities. *Education Sciences*, 11(7), 364. <https://doi.org/10.3390/educsci11070364> [in Ukrainian].
- Barzylovykh, A., Oliinyk, Y., Kostitska, I., Shakhman, N., & Buryk, Z. (2020). Transformation of the social and medical spheres under the conditions of COVID-19. *Systematic Reviews in Pharmacy*, 11(11), 1328-1337
- Berezhna, S., & Prokopenko, I. (2020). Higher Education Institutions in Ukraine during the Coronavirus, or COVID-19, Outbreak: New Challenges vs New Opportunities. *Romanesque Journal for Multidimensional Education*, 12, 130-135. <https://doi.org/10.18662/rrem/12.1sup1/256>
- Bloom, E. (2018, November) 7 key factors of successful digital transformation in the enterprise, 7. Retrieved from <https://www.cio.com/article/3249245/7-key-factors-of-successful-digitaltransformation-in-the-enterprise.html>
- Brammer, S., & Clark, T. (2020). COVID-19 and Management Education: Reflections on Challenges, Opportunities, and Potential Futures. *British Journal of Management*, 31, 453-456. <https://doi.org/10.1111/1467-8551.12425>
- DeArmond, S., Barbara L. Rau, Jennifer Buelow-Fischer, Ashay Desai & Andrew J. Miller. (2023). Teaching professional skills during the pandemic: Does delivery mode matter?, *The International Journal of Management Education*, 21(2), 100770. <https://doi.org/10.1016/j.ijme.2023.100770>
- European Commission (2021). Digital Technologies in Education Retrieved from <https://ec.europa.eu/jrc/en/digital-education-policies>.
- GfK Ukraine (Project) (2017). Regional office of the Foundation. Friedrich Ebert in Ukraine, New Europe Center. GfK Ukraine. Retrieved from <https://library.fes.de/pdf-files/bueros/ukraine/13874.pdf>
- Imanova, S. (2021). Promoting Azerbaijani Students' Intercultural Competence through Distance Education of Foreign Languages. *Arab World English Journal*, 12(3), 232- 241. <https://doi.org/10.24093/awej/vol12no3.16>
- Jacob, J., & Ensign, M. (2020). *Transactional Radio Instruction: Improving Educational Outcomes for Children in Conflict Zones*. Palgrave Macmillan, Cham. <https://doi.org/10.1007/978-3-030-32369-1>
- Kukharenko, V., & Bondarenko, V. (2020). *Emergency distance learning in Ukraine*. Collective monograph. Kharkiv, Retrieved from https://duan.edu.ua/images/News/UA/Departments/Management/2020/monograph_ekstr_dyst_navch.pdf
- Mukhtar, Khadijah, Javed, Kainat, Arooj, Mahwish & Sethi, Ahsan. (May 2020). Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4): S27-S31. <https://doi.org/10.12669/pjms.36.COVID19-S4.2785>
- Nugroho, A., Ilmiani, D., & Rekha, A. (2021). EFL Teachers' Challenges and Insights of Online Teaching amidst Global Pandemic. *Metathesis: Journal of English Language, Literature, and Teaching*, 4(3). <https://doi.org/10.31002/metathesis.v4i3.3195>
- Oleshko, A., & Rovnyagin, O. (2020). Anti-crisis policy of nation-states in the context of overcoming the socio-economic consequences of covid-19. *Efficient economy*, 4. <https://doi.org/10.32702/2307-2105-2020.4>
- Oleshko, A., & Rovnyagin, O. (2021). Improving distance learning in higher education in pandemic constraints. *Public administration: improvement and development*, 1. <https://doi.org/10.32702/2307-2156-2021.1.3>
- Southgate, E. (2020, May). Using Screen Capture Video to Understand Learning in Virtual Reality. *IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW)*. <https://doi.org/10.1109/VRW50115.2020.00089>
- Stoian, C. E., Fărcașiu, M. A., Dragomir, G.-M., & Gherheș, V. (2022). Transition from Online to Face-to-Face Education after COVID-19: The Benefits of Online Education from Students' Perspective. *Sustainability*, 14(9), 12812. <https://doi.org/10.3390/su141912812>
- Tuncer, H., & Karataş, T. Ö. (2022). Recommendations of ELT Students for Four Language Skills Development: A Study on Emergency Distance Education During the COVID-19 Pandemic. *SAGE Open*, 12(1). <https://doi.org/10.1177/21582440221079888>

UNESCO (2020a). Institute for Lifelong Learning. Annual Report 2019. Retrieved from <https://uil.unesco.org/uilsannual-report-2019>

UNESCO (2019). Learning Cities respond to COVID-19. Retrieved from <https://en.unesco.org/events/webinarunesco-learning-cities-respond-covid-19>

UNESCO (2020b). Supporting teachers and education personnel during times of crisis. Retrieved from <https://unesdoc.unesco.org/ark:/48223/pf0000373338>

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