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## The impact of pandemic on the development of distance learning technologies in the training of music teachers

### ВПЛИВ ПАНДЕМІЇ НА РОЗВИТОК ТЕХНОЛОГІЙ ДИСТАНЦІЙНОГО НАВЧАННЯ У ПРОФЕСІЙНІЙ ПІДГОТОВЦІ ВЧИТЕЛЯ МУЗИЧНОГО МИСТЕЦТВА

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#### Abstract

During the Covid-19 pandemic, each of us should be able to continue working, studying, and living, although the disease imposes certain restrictions because people have to maintain a social distance and have many other limitations. The main thing for the educational space is that you have to minimize contact in all areas.

This article aims to substantiate the feasibility of distance education and its technologies scientifically. Furthermore, the relationship between distance music education, modern computer technology, and applications that are now called know-how is revealed.

Research methodology. The research practice is based on quantitative and qualitative analysis of the information sources and the results obtained. These collection methods are valid for secondary and primary information. The survey method became necessary in this context. Research data was obtained through thematic analysis and

#### Анотація

В період пандемії Covid-19 кожен з нас повинен мати можливість продовжувати працювати та навчатись, жити далі, хоча захворювання накладає певні обмеження, тому що люди повинні дотримуватись соціальної дистанції та мають безліч інших обмежень. Головним для освітнього простору є те, що доводиться мінімізувати контакти у всіх сферах.

Метою цієї статті є наукове обґрунтування доцільності дистанційної освіти та технологій, пов'язаних з нею. Розкрито взаєв'язок між дистанційною музичною освітою, сучасними комп'ютерними технологіями та застосунками, які зараз називають ноу-хау.

Методика дослідження: дослідницька практика заснована на кількісному, так якісному аналізі джерел інформації, отриманих результатів. Ці методи збирання є чинними як для вторинної, так і первинної інформації, необхідним у такому контексті став метод опитування. Дані дослідження отримані шляхом тематичного

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observations related to the research objectives of the work. The research results of the survey were used in the systematization and formation of conclusions. The introduction of audio-visual technology in the educational process contributes to the improvement of motivation to learn in the background of improved academic performance. The importance of this study is determined by the fact that it is not only concerned with the general problem of the educational system in general but pays special attention to music education in particular. The study also deals with technological innovation and all that goes along. Another factor in the importance of the study is that the methodological developments presented in the research and the research problem are relevant to workers in the field of music education, which makes the promulgation of successful teaching practices essential.

**Keywords:** Distance education, Music, Teacher, Student, Convenience, Learning, Music lessons, music instruments.

### Introduction

Distance education is one of the ways people can get educated without getting admitted into a regular institution. The studies and everything happen from a distance at home. These kinds of services were usually availed by the people that are already working to get educated or continue their education. However, with the coming of the global pandemic, this process got newfound importance. This is today one of the preferred modes of education to avoid classrooms full of students sitting in close proximity. Ukraine is one of the worst-hit countries of the pandemic and with education organizations open, it may lead to further waves of the pandemic arrive. According to Grynyuk *et al.* (2020), distance education has been selected as one of the most effective means of education without interruption during the pandemic. This decision has been taken by the Ukrainian Ministry of education. Pupils and Students alike all have to resort to distance education for their degrees and qualifications. The same is the case for the neighbouring countries of Ukraine. It has become very hard however for the students and the teachers however to adapt to the new technologies of distance learning (Nesteruk, 2021). This inconvenience becomes more significant when the music lessons are considered.

Music is something that requires lots of attention to detail and many technical things to be explained to the students such as hand positioning and finger positioning. This calls for

аналізу та спостережень, пов'язаних з дослідницькими цілями роботи. Результати опитування також були використані у систематизації та формуванні висновків. Введення до навчального процесу аудіовізуальних технологій сприяє покращенню вмотивованості до навчання на тлі покращення успішності. Важливість цього дослідження визначена тим, що вона стосується не тільки загальної проблеми освітньої системи загалом, але приділяє особливу увагу музичній освіті зокрема. Дослідження також стосується технічних інновацій, і всього, що з ними пов'язане. Іншим фактором важливості дослідження є те, що представлені у дослідженні методичні розробки та дослідницька проблема є актуальною для працівників галузі музичної освіти, що робить оприлюднення успішних практик навчання дуже важливим.

**Ключові слова:** дистанційна освіта, музика, викладач, студент, зручність, вивчення, уроки музики, музичні інструменти.

the teacher correcting the students by placing their hands in the correct way physically. This is particularly true for the string and the wind instruments (Özer & Üstün, 2020). This is the reason the distance teaching of the music lessons have become more time taking and difficult. This leads to the teachers not being able to teach as effectively or as fast as they could teach. For the students, they may face many difficulties in learning the lessons effectively and not be able to produce the results that they may find satisfactory; this is very difficult to do with the current teaching techniques (Wang & Zhong, 2021). Music has a motivating factor, this is to say that as the students start to see the improvement they get more motivated to play their instruments and improve themselves. This is of much importance as the students may lose interest and consider it their personal lack of ability to play the particular instrument while the problem may be the lack of proper guidance. This is especially the case with the students of music that are learning to play the wind instruments as breath control and the proper way to blow into the instruments need personal face to face attention that is not available or possible in the distance learning method of education. In this study, the nuances related to music education and the difficulties faced by the teachers and the students are going to be discussed. According with the last, The purpose of the article is to scientifically examine the purpose the viability of the distance education and the things related to it.

In order to find out if long distance learning of music is a viable option in the present time with the modern technology of hardware and software as well as the modern technical know-how.

### Literature Review

According to OuYang, (2020), the hardware and the software have been developed for more effective and systematic teaching and learning of

music. This is to say that the students are going to be able to learn more effectively with the help of graphics designed to teach the students the proper techniques and positioning. This is going to help the students to get an insight into the proper way to do things. The teachers however are going to face the challenge of a learning curve and they are going to find themselves in need of learning the proper ways to use the new graphic designing software and techniques.



**Figure 1.** Learning through the aid of live assisted software  
(Source: OuYang, 2020)

This software are immensely helpful for the learning of music online. However, Blake, 2018, discusses the other problems of online and distance learning of instruments. Blake says that the prejudice against people gaining degrees online is still high and is oftentimes not regarded as quality education. This being said, the question has to be asked if the students that are learning music from distance education are actually inferior to the students that got face to face guidance. In order to examine this proposition the research done by Havrilova *et al.* (2019) can be referred to. This study states the problems that are faced by online learners. They highlight the fact that the students do not develop proper coordination among themselves playing online in an orchestra or band. The quality of music they hear is not adequate and the students do not develop the skills that enable them to judge by ear the various problems of playing together such as tune, technical requirements. However, they also state that the people are going to get the advantage of the various software that is being developed for the specific purpose of online, distance learning of music, however, the point of using supportive instruments still stands; Not just musical instruments, today there are

many types of electronic and analogue equipment that are used for a stage performance. The students do not develop a proper understanding of these things as they have no access to these instruments at home. One reason is that these instruments are very costly and are large in size that is very hard to have at home for the teachers and the students. According to Pregowska *et al.* (2021), distance education is one of the most viable means of learning in this pandemic situation. This is one of the most effective ways of learning without compromising the health security of the country and the community. Also, according to Prokopenko & Berezna, (2020), the limitation of the distance education of music is going to become more improved and solved over time since the need for these has arrived even for the choir based music lessons. According to Eren & Öztug, (2020), this is to say that for so long the students were not choosing the distance education of music hence the need for improvements never arrived. However, according to Bakhovet *et al.* (2021), with the need for distance education of music arriving, it is more likely that the existing issues are going to be solved.

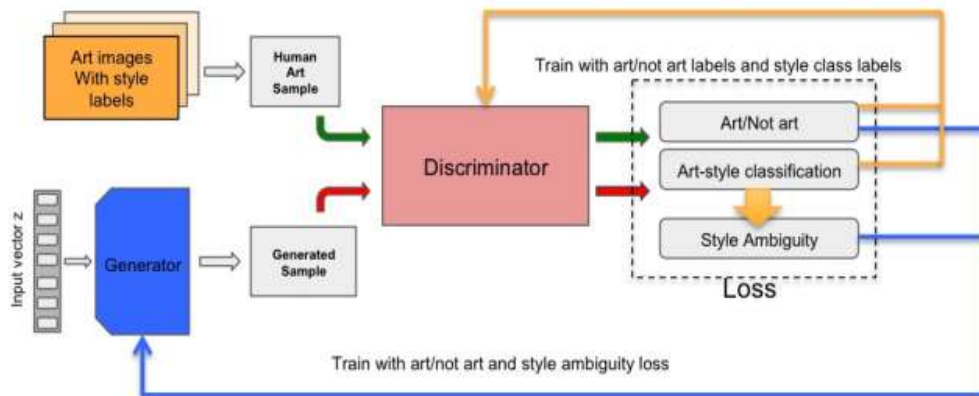
**Table 1.**  
Measurements of professional competence.

Measurement	Components
<b>Cognitive</b>	Hand positioning
	Air Blowing techniques
	Body positioning
	Understanding of scale
<b>Technical</b>	Use of new technologies
	Understanding of the new music-related software
<b>Integrative</b>	Coordination
	Listening to the difference of sound by ear while playing in a group
<b>Contextual</b>	The understanding of joint use equipment
	The reading of stave notes
<b>Relationships</b>	The use of coordinated guidance for learning
	Understanding of the personal playing styles of each other
<b>Ethical</b>	Developing an understanding of the role of one another
	Development of non-verbal stage communication among musicians
<b>Mental attitudes</b>	Cheating
	Using external help during lessons
	Motivation
	Effort
	Selfishness

Source: Hilt, (2019).

According to Briot & Pachet, (2020), the deep learning of music is possible. There are now ways to access the effectiveness of learning. Modern theories are being developed that examines the use of the processes of assessment that enable the teachers to evaluate their own performance as well as that of the students in

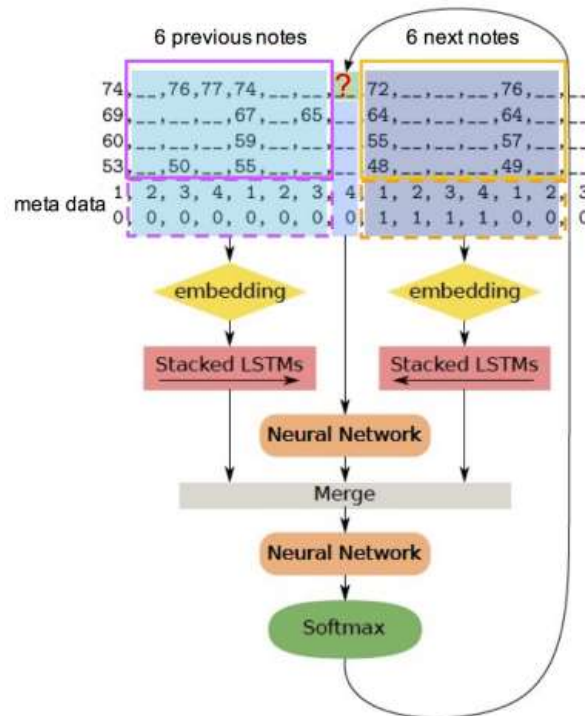
order to make for an effective lesson. It has been mentioned before that the need for such things was not present during the earlier times as the need for them did not arise at that time. However, now these processes are going to make the process of online music education much more effective and at par with personal class lessons.



**Figure 2.** The assessment criteria of the distance teaching of music.  
(Source: Briot & Pachet, 2020)

According to Li *et al.* (2019), the development of the concept of online and distance education of music are being developed. These are the advanced teaching principles being adopted from the offline classes with necessary changes to be

used in the distance learning setting. The teaching methods are improving and so is the quality of education. This is the way the Ukrainian distance education environment is going to develop and reach its potential.



**Figure 3.** The concept of online learning of music. (Source: Li *et al.* 2019)

According to Turchet *et al.* (2018), the use of the internet has changed the environment of long-distance learning and the existing hardware and software may have limitations, but they are useful for the teaching of the techniques of music and other related things. It is only in the advanced levels that problems start to arise. Otherwise, it is a proven fact that music teaching can be conducted effectively during the pandemic through distance learning.

**The Ukrainian perspective:** According to Chorna *et al.* (2018), the country of Ukraine is one of the more developed regions of the world and the people have access to good internet connections as well as the necessary hardware and software platforms that can be used for the conduction of the online classes of music. This makes it a suitable destination for the teachers to work on implementing the advanced solutions of distance education of music as the basics are covered already. According to Kolbina & Oleksenko, (2020) and Nagy, (2019), the digital literacy of the People of Ukraine is also relatively high that is going to aid the students to avail and learn the lessons more effectively.

### Methodology

For the purpose of this study, both qualitative as well as quantitative methods have been taken into consideration. This indicates that both primary

and secondary research has been taken into consideration and the assessment has been done on the basis of it. The secondary research has been considered because a vast amount of research has been already conducted by the previous researchers. A considerable number of them are also survey-based studies that yield the data that has been used in the formation of this study. The works of the most relevant and authentic researchers have been analysed after a detailed study of them. The clustering of these studies has yielded the results for and against the notion of using distance education for the teaching of music. These effectively highlight the major issues and the major advantages of learning music from the online perspective through distance education in Ukraine. The solutions to the problems have also been gotten and analyzed systematically in this study. Apart from that, as a part of the primary research, the survey of 51 people has been conducted of the music teachers and students separately to investigate in detail the current situation.

However, there are a set of specific criteria for this study that has been conducted. These are as follows:

- The assessment of the effectiveness of the distance education on music lessons
- The assessment of the issues that arise during the distance learning of music



- The additional learning curve of the teachers and students that arises for the situation
- The solutions and their effectiveness in solving the problems and limitations that arise

The evaluation criteria included in the assessment includes the assessment of the factors from the perspective of the teachers mainly and their effects on the students that are at the receiving end of the lessons. The other criteria are the lessons themselves and the validity of the techniques that are being developed today due to the pandemic for the solution of the issues that arise due to the inadequacy of distance learning of music in Ukraine. Apart from that, the solutions offered by the previous researchers have also been condensed in this study to yield the results on the basis of the trends and themes observed during the review and evaluation process. The processes are also going to be rated and evaluated separately for their effectiveness and relevance.

- 90 to 100 points can be termed as highly effective
- 80 to 60 points are going to be termed as effective
- 60 to 50 points are going to be termed as moderately effective

- 50 to 40 points are going to be termed as inadequate and needs improvement
- Below 40 points are going to be ruled out as non-effective

These are going to effectively help the researcher in evaluating the processes as well as the solutions.

**Results**

The results have been yielded on the basis of a few different things, mostly the observations done from the secondary research. The results are going to be displayed under this heading in the form of charts. The survey has been done on the basis of two survey questions:

*Survey Questions:*

1. Do you think that distance education of music is effectively possible?
2. Is it possible for the limitation in distance education of music can be solved to make it at par with regular offline music classes?

These two survey Questions are going to be asked to groups of 51 Music teachers that are engaged in teaching music by the means of distance education.

**Table 2.**

*The results obtained by the survey of the 51 teachers on the basis of the 1st survey question.*

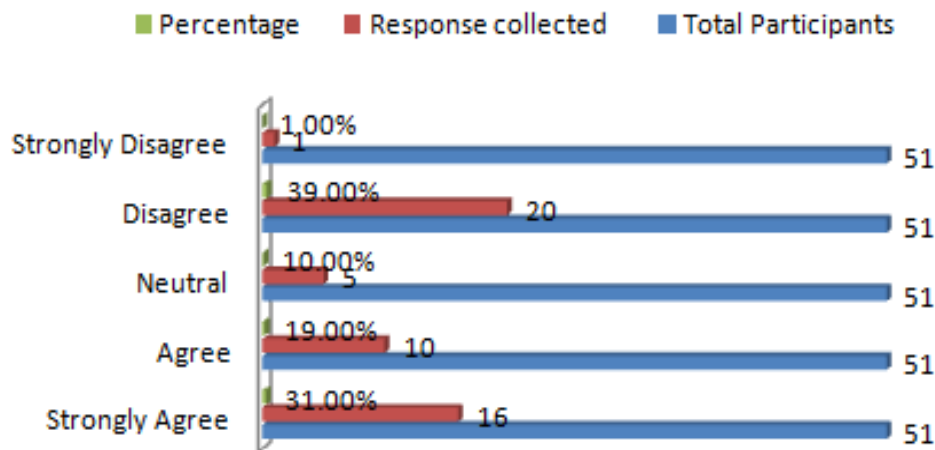
“Given options”	“Total Participants”	“Response collected”	Percentage
“Strongly Agree”	51	16	31.00%
“Agree”	51	10	19.00%
“Neutral”	51	5	10.00%
“Disagree”	51	20	39.00%
“Strongly Disagree”	51	1	1.00%

Source: compiled by the author

It can be clearly seen that the number of people that agree with the notion is 26 in total. 16 chose to strongly agree while 10 chose to somewhat agree. While the number of people that chose to stay neutral is lesser in number indicating the fact that the teachers themselves are highly divided among them regarding the issue; The younger

ones chose to say that the use of IoT and hardware/software in modern times can enable the effective tutoring of music. While the more traditionalists believe that music cannot be taught like that.

### Do you think that distance education of music is effectively possible?



**Figure 4.** The statistical representation of the answers obtained from the 1st question (Source: compiled by the author)

The graphical representation shows the difference between the amount of response each option has been able to collect and singularly judging, the number of teachers that shoes to

disagree are the largest group. This proves that there is a considerable number of people that think that the students cannot be taught music effectively online.

**Table 3.**

*The results obtained by the survey of the 51 teachers on the basis of the 2nd survey question.*

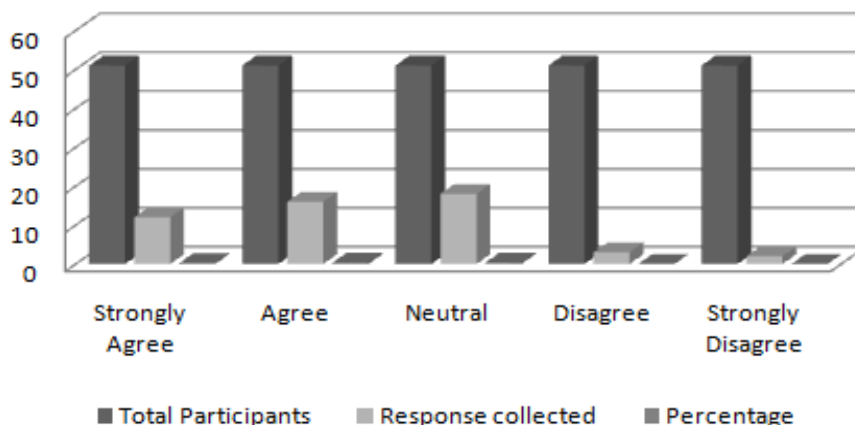
Given options	Total Participants	Response collected	Percentage
“Strongly Agree”	51	12	23%
“Agree”	51	16	32%
“Neutral”	51	18	35%
“Disagree”	51	3	6%
“Strongly Disagree”	51	2	4%

Source: compiled by the author

It can be observed here that the number of people that agree in total is much higher than the people that disagree in total. The people that strongly agree are 12 and the people that somewhat agree are 16. Bringing a total of 28 teachers that agree that the modern use of technologies can bring the distance teaching of music at par with the traditional music classes; however, the number of

people that chose to stay neutral also forms a group of sizable number. This proves that there are music teachers that still do not trust the technology and the technical know-how of modern times completely. However, the number of disagreements has reduced many times in this question with only 5 people choosing to disagree.

**Is it possible for the limitation in distance education of music can be solved to make it at par with regular offline music classes?**



**Figure 5.** The statistical representation of the answers obtained from the 2nd question (Source: compiled by the author)

The graphical representation shows the people that chose to stay neutral is the largest group amongst the surveyed teachers. This is a strong indication that still a large number of teachers are not comfortable or trust the modern developments to agree with the notion. The disagreement has however decreased significantly, proving the fact that people at least agree that it is possible for distance education in music to someday in the future to reach the level of proficiency of teaching and learning that traditional music classes have achieved over the centuries.

**Issues:**

The problem that has been found in the literature review is that the evolution of distance education comes with a significant learning curve for the teachers. This problem remains unsolved. That is to say that the solutions gotten for them are marked at below 40 points and are ineffective. The teachers need to learn the use of new software and hardware platforms to be able to teach effectively in distance education. The other major issue was that of the development of common musical coordination and musical sense through online learning. The solution to this also stays ineffective. More technologies need to be developed for an effective solution to these problems.

**Theme 1: Impact of pandemic on the development of distance learning of music Teacher.**

The Sustainable Education system has always aimed to reduce the negative impact of Covid 19

pandemic. It actually helps in the identification of educational institutions for the future problems and the main sustainability of the technological tools for the sustainability of Music Teacher in the Ukraine. Music education in schools of Ukraine has been facing a lot of crisis as a result of Covid 19 pandemic with singing, instrumental lessons and Extracurricular Activities by the teacher and student. It has been seen that more than 68% of primary school teachers and more than 39% of secondary school teachers reported a reduction in music provision as a direct result of the pandemic. The Health and wellbeing of both the children and the music teacher has been affected due to the changes due to not being able to supply the music (Kushnir *et al.* 2021).

It has been seen that music is actually central for the recovery which is needed and plays a vital role in schools. It actually helps to create the strong relationship between the student and teacher, and it creates a variety of emotions that they have explored during the pandemic. It has also been said that in Ukraine 28% of secondary schools have discontinued instrumental lessons in person. The teacher has said that it is very much vital that every child in Ukraine school can access the quality of music education. The teacher also said that the Ukraine government has to make sustainable policy and leadership who will actually encourage actively the music teaching in schools, so that they can have a better bond with teacher and student. The main effect of the pandemic on Music Teachers is very bad as they cannot interact with the student, side by side they the student and teacher are having psychological impact on themselves. The



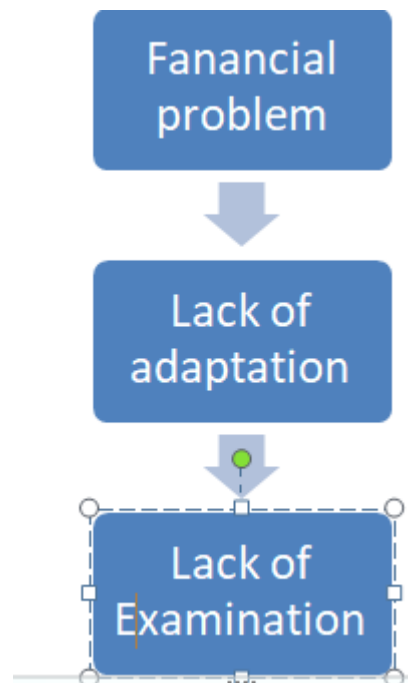
teacher of music in Ukraine has faced many challenges because it is not easy to teach elementary students for engaging music lessons because they are missing the basics of music education. It has been discussed the impact of pandemic Covid 19 on music education in schools more focused on schools of Ukraine. The situation where Ukraine has already accepted the Epidemic declaration, the main concern is how the government will implement the policy for teachers to start distance education using different digital platforms (Poplavska *et al.* 2021).

The main challenges that came in the path of a music teacher are how to teach the music through digital media, the next issue is how to make the rules and regulations regarding the classes that will happen during online classes. The main challenges that faced by the music teacher during the pandemic in Ukraine is that stated:

**Financial:** This is the biggest challenge that is faced by the Ukraine music Teacher. This

happens due to the effects of the pandemic, the schools are not able to keep the teacher as they are short listing the teacher for mitigating the loss that happens to the school. The higher authorities are either suspending the teacher for which the teacher is facing the financial condition, or the people who are kept in the schools are actually not getting the salary they used to get for which they are seeing the financial problem (Ovcharenko *et al.* 2020).

**Loss of Adaptation:** The next challenge that comes is the loss of adaptation because the teacher and the student are not able to do adaptation regarding the use of technology such as digital media. The teacher has been not able to properly meet the criteria of teaching the music through social media. They are not flexible about the teaching method and style of teaching the student about the music. It has been that the students also sometimes have problems in adaptation as they understand the method of learning new things. This actually creates a chaotic situation among the teacher and student.



**Figure 6.** Impact of pandemic on Music Teacher (Source: compiled by the author)

**Lack of taking assessment or examination-** As music is one of the subjects where the assessment and examination need to be done on the basis of physical examination on theory paper. On the other hand, due to Covid-19 pandemic there are no physical classes. It has become very difficult for the teacher to take either the physical exam or

the practical exam because of the difficulty of playing the instrument due to the reason online.

### Discussion

The impact of Covid-19 pandemic has created a lot of problems in the life of the Musical teachers,

many of them don't know about the use of the new technology during the pandemic for the taking of the classes for students. The schools in the Ukraine cannot provide the proper training to the teacher about the usage of technology. As it was not possible for the teacher to produce the proper training during the pandemic it was not possible for giving training. The lack of training is actually making the loss for the music (Miksza *et al.* 2021). The Music Teacher is not able to make the proper conversation and cannot apply the method of teaching as there is no proper flexibility within the teacher and student. There are no creative strategies and good practices that are not happening in this situation of pandemic because for creativity in music the physical appearance in the school with students is needed. The music teachers are getting the bad effect of Covid-19 they are getting affected by psychological effects. Sometimes, they are not getting the full salary because they are giving the problem of Covid-19. The impact of the Covid - 19 getting the bad bonding with the teacher and the student, they are not giving the correct attention to the student as they are not able to give perfect training to the student. If they are not giving the perfect policy regarding the rules and regulation of rules there will be no proper training to schools student (Habe *et al.* 2021).

### Conclusion

In conclusion, it can be said that the various things relations between the teachers and the students that could be done in a traditional music class are missing in distance education. This is mostly because previously the students did not usually seek the option of distance education in terms of the music. However, with the coming of the recent and ongoing global pandemic, the need for distance education has become a viable option for music students. This is the reason the shortcomings are being or are trying to be overcome with the help of software and hardware innovations as well as the technical know-how of the people.

However as the survey results show, the music teachers of Ukraine do not trust the various different things. But contrastingly most of the teachers were found to believe that the music classes of distance education are one day going to reach the level of the traditional classes. In this research, the scope of discussion, however, has not included the traditional Slavic music instruments, the players of that are decreasing in number, these traditional instruments come with various limitations and problems of their own as

they are tried to be taught through the medium of distance learning.

The conclusion can be drawn at the end of the study that the tools and techniques that are necessary for online distance learning have been only started to be developed recently. The reason is the recent pandemic and is going to take some to mature as an entire ecosystem. Or it may not develop at all as soon as the pandemic ends in the near future. The developments may stay stagnant after that.

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