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Original research paper

REALISATION OF ONLINE MUSICAL INSTRUMENT INSTRUCTION DURING THE COVID-19 PANDEMIC: PERSPECTIVES OF MUSIC SCHOOL TEACHERS

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ABSTRACT

Since the COVID-19 pandemic made online classes a necessity throughout the world, Serbia included, the music education system has gone through an extensive transformation, and the teachers faced a number of difficulties and challenges in their work. With this paper, we wanted to provide a clear insight into the teaching practices that were established after the pandemic was declared. The goal was to identify the obstacles that appeared in online classes for musical instruments, but also the advantages that, according to the teachers, may be integrated into traditional classes once the pandemic is over. The research was based on a sample of 220 teachers of elementary music schools, combining a qualitative and quantitative analysis of the obtained data. The results have shown that teachers, younger ones in particular, overcome the obstacles of online teaching without major difficulties. As to the particular difficulties they encountered, the teachers most often mentioned those of a technical nature, and the inability to properly work on the techniques of playing an instrument due to the lack of a direct contact with the students. Almost all of the teachers feel that the students cannot improve their skills through online classes as effectively as in a regular class. However, in their future work, the teachers would continue to make audio and video recordings of themselves and their students playing, and practice online teaching when the students are sick or otherwise unable to attend regular classes. The pedagogical implications of this research are that it is necessary to implement technological solutions that would support all aspects of instrument instruction, but also to intensify technical support for teachers, particularly older ones, regarding competences needed for online classes.

Key words:

musical instrument instruction, online teaching, teachers, students, pandemics, COVID-19.

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■ INTRODUCTION

As a relevant feature of the XXI century, technology impacts all the aspects of modern society in a fundamental way. Revolutionising not only the living and working environment, technology brings about radical changes in the field of education, and is consequently recognised as a significant determinant in the development of the education system. Hence, with state support from many European countries, strategies related to enhancing digital competences of the teachers and using digital technologies in the online teaching process are being adopted (European Commission, 2012). The online teaching process, as the fourth type of education that Afrić speaks of (Afrić, 2014), is entirely reliant on using the internet via digital technologies, while the teacher and the student are physically apart (Kentnor, 2015). Besides relativising the category of space, online teaching can also imply a temporal distance between teacher and student, but that depends on the type of communication technology that is used, or, rather, on whether the communication is synchronous (directly following the class through video and audio conferences) or asynchronous (delayed participation via e-mail, discussion forums, etc.). In order to obtain a clear view of the possibilities for a realistic simulation of instrumental instruction through communication technologies, it may be useful to briefly outline its specific features. Instrumental instruction is an individual form of teaching, demanding differentiated tasks that are organised according to the predispositions, abilities and potential of each individual student. This makes for a complex educational process, because the teacher is required to make individual lesson plans for each student, guided by the psychophysical and cultural aspects of their personality, on top of the general lesson plans required by the institution. By obtaining a realistic assessment of the student's personality and abilities, which is key in choosing the appropriate methods of instruction, the teacher simultaneously forms a bond of understanding with the student. Throughout the process of instrumental instruction, the teacher is responsible not only for helping the students to develop professionally, but also for influencing their behaviour and upbringing. As practice has shown, the teachers can be a "safe haven" in those situations where the students are troubled by emotional or interpersonal problems (Vulfolk, Hjuž i Volkap, 2014). This is particularly true of instrumental instruction, where the nature of the work process, tasks and content is such that it is conducive to the development of a close relationship, which is often a decisive factor in the success of the student (Bogunović, 2010). To what extent can the specific features and activities of instrumental instruction be simulated by communication technologies is discussed in certain research papers that will be reviewed shortly. Namely, the practical aspects of instrumental instruction require, first and foremost, a real-time verbal and visual communication, which means that using a synchronous type of communication is preferred since it allows for a more realistic simulation of these activities. Of course, this does not mean that the use

of asynchronous communication is entirely excluded. Furthermore, according to a number of studies dealing with online instrumental instruction, a combination of synchronous and asynchronous technology, provided that the teacher's digital competences are sufficiently developed, has proved to be a solid way to acquire music knowledge and skills (Damon & Rockinson-Szapiw, 2018; Enloe, Bathurst & Redmond, 2013; Karahan, 2014; Pike & Shoemaker, 2013). On the other hand, when it comes to the realisation of online instrumental teaching, the research done so far points to numerous challenges and difficulties which undermine its efficiency, such as: a lack of interaction with the teacher can have a demotivational effect on the student (Koutsoupidou, 2014); poor quality of the audio and video feed (Kruse Harlos, Callahan & Herring, 2013; Ververis & Apostolis, 2020); delayed transmission, whereby the most challenging part of instruction is keeping the rhythm and joint performance (Brändström, Wiklund & Lundström, 2012); insufficiently developed digital competences of the teacher, lack of adequate technical equipment on both sides (Koutsoupidou, 2014); a lack of concrete support from the state regarding online instruction (Calderón-Garrido & Gustems-Carnicer, 2021).

Such support is particularly important in this situation, that has affected the entire world deeply. Namely, after the COVID-19 virus outbreak was declared a pandemic, the entire work in education, at all the levels, had to be conducted exclusively online. The unpreparedness for this sudden transition from direct to online teaching, putting a lot of pressure on the teachers to quickly adapt to the new way of working (Schiavio, Biasutti & Antonini, 2021), has inevitably caused numerous difficulties that the teachers had to face throughout the pandemic. Accordingly, the findings of numerous studies that have examined instrumental instruction in music schools throughout the world after the pandemic was declared point to the fact that the teachers were insufficiently prepared to give online classes, that the adaptation to new working conditions was marked by a lack of material and methodological resources, along with a lack of concrete instructions from the relevant state authorities (Calderón-Garrido & Gustems-Carnicer, 2021); Daubney & Fautley, 2020; Encarnação, Vieira & Brunner, 2021). For example, 62% of teachers throughout Scotland stated that they were not adequately prepared for online teaching (Moscardini & Rae, 2020). On the other hand, the results of research conducted by the Associated Board of the Royal Schools of Music (ABRSM, 2020), an organisation dedicated to music education that has long been a global leader in this field, shows that 87% of the teachers are mostly happy with how they adjusted to new working conditions. However, 93% of the teachers from the same sample stated that, while using synchronous communication technologies during online classes, they have met with poor sound and image quality during video calls, making the assessment of the students' work and progress quite difficult. The teachers have also expressed concern for those students who had a problem finding a quiet place in order to have their class undisturbed (ABRSM, 2020). Teachers who participated in other studies

(Cheng & Lam, 2021) have also expressed concern regarding the students' adjustment to new working conditions. In June 2020, a study was conducted with instrumental teachers from 48 music schools in Greece. Poor image quality, and worse still – poor sound quality during video calls kept the teachers from obtaining a clear insight into the playing of their students. Describing the technical issues that came up during video calls in more detail, the teachers pointed out problems such as frequent sound interruptions, and the inability to hear both high and low frequency tones. Namely, the teachers felt that the *WebEx* online teaching platform, officially recommended by the Ministry of Education of the Republic of Greece, was inadequate for online instrumental instruction. In their opinion, the problem lies in the fact that the said teaching platform is better suited to transfer speech than music. Most of the teachers, therefore, had to include an asynchronous type of communication in their classes, with the students sending them audio and video recordings of their playing. Thanks to this teaching system, the teachers could study the recordings that allowed them to hear a student's performance in its entirety and analyse their work (Ververis & Apostolis, 2020). For the same reasons, after the COVID-19 pandemic was declared, this practice was also applied by the teachers from Portugal, Germany and Turkey (Encarnação, Vieira & Brunner 2021; Kivi, Dimitra, Sezen & Hatice, 2021). Apart from poor sound and image quality during synchronous communication with the students, another common problem in the realisation of online classes was a weak internet signal (Encarnação, Vieira & Brunner 2021; Medňanská & Strenáčíková, 2021; Ververis & Apostolis, 2020). However, the biggest problem singled out by all the teachers is the lack of direct contact with the students that is essential for working on the technique that allows them to master the art of playing a musical instrument. Implementing methodical actions that are meant to activate and automatise certain physical movements is just not possible in an online environment. For example, the wrong position of the body and/or hand during playing cannot be corrected unless the teacher is physically present (ABRSM, 2020; Encarnação, Vieira & Brunner, 2021; Kivi, Dimitra, Sezen & Hatice, 2021; Medňanská & Strenáčíková, 2021; Ververis & Apostolis, 2020). Furthermore, as a representative example, we will set out the following comment made by a violin teacher: "The position of the student's hand during playing was gradually worsening, and since I could not attend classes physically, I could not provide adequate assistance" (Ververis & Apostolis, 2020:8). Since this problem is often cited as the reason behind the teachers' attitude that online classes cannot fully replace face-to-face instruction (Moscardini & Rae, 2020), we can unreservedly state that the use of technology in instrumental instruction is still in its early stages. That certain approaches to teaching that work well in the classroom are not necessarily as efficient in online classes can also be seen from several papers published in Serbia. Using qualitative and quantitative methodological approaches, these papers, examining different aspects of distance education in music schools (Ačić i Nedeljković, 2021; Škojo i Ristivojević, 2021), have shown that

distance learning has served its purpose during the pandemic state of emergency. However, according to the teachers, it was quite difficult to fully accomplish learning outcomes, mostly due to limited interaction with the students, technical issues, and insufficient preparedness of the teachers for online instruction (Ačić i Nedeljković, 2021; Škojo i Ristivojević, 2021). Considering the similarity of the results that were obtained in research undertaken in other countries with the results of the research undertaken in Serbia, we can see that the circumstances surrounding the music education throughout the pandemic have brought about similar difficulties for teachers involved in distance education.

Given the results of the cited research – and the fact that the research context, in which online instruction was set as the only possible form of teaching, equals ours, the decision of the Government of the Republic of Serbia on closing down schools (“Official Gazette of the Republic of Serbia”, no. 30/20), based on which the transfer of music instruction to an online environment was implemented in a very short amount of time, the fact that modern technology has never been used up to that point as a mediator between the teachers and students in regular instrumental instruction, we wanted this research to provide the clearest possible insight into the experiences of the teachers and the teaching practices that were used after the COVID-19 pandemic was declared. Apart from that, the focus was on identifying obstacles to online instruction and the advantages that may be integrated into traditional classes once the pandemic is over.

■ METHODOLOGY

The goal of this research was to establish what the opinions of music schools instrument teachers were on providing distance education, and whether or not their opinions differed based on their age group. In addition, we wanted to find out what were the obstacles that the teachers faced in the beginning of the transition from regular to online classes, but also the advantages of this type of instruction that the teachers feel could be implemented in their future work. Based on this goal, but also on a detailed analysis of other relevant research (ABRSM, 2020; Buabeng-Andoh, 2012; Cox, Preston & Cox, 1999; Encarnação, Vieira & Brunner, 2021; Kivi et. al., 2021; Medňanská & Strenáčíková, 2021; Moscardini & Rae, 2020; Ververis & Apostolis, 2020), we defined the following six tasks: (1) determining how the teachers adapted to distance instrumental instruction in general; (2) determining if there is a statistically significant difference of opinion on adapting to distance instruction considering the teachers’ age group; (3) determining which modes of online instruction the teachers use most and in what way; (4) establishing the opinion of the teachers on whether students can thrive in an online learning environment just as well as in a regular classroom, and if not, why; (5) identifying the main difficulties

that the teachers faced in the realisation of online classes; (6) examining the opinion of the teachers on the possibilities of online instruction that they may wish to keep in their future work.

The research sample consists of 220 teachers (168 – 76.36% women and 52 – 23.64% men) of instrumental instruction, employed in music schools. These teachers from 34 cities across Serbia teach piano, violin, flute, guitar, clarinet, accordion, cello, trumpet, oboe, saxophone, double bass, percussions and harp. The sample was further divided into four groups.

The first group, that is also the largest (96 teachers – 43.64%), consists of teachers aged 34 or less (A). A somewhat smaller number of teachers (64 – 29.09%) makes up the second age group, aged 35 to 45 (B). The third group are teachers aged 45 to 54 (40 – 18.18%) (C). The smallest group consists of teachers aged 55 or more (19 – 8.64%) (D).

During research we used appropriate procedures and data collection instruments. The selected method was a survey, with the questionnaire as the data collection instrument. The survey was anonymous. The first part of the questionnaire consisted of questions related to the sociodemographic data: the teachers' gender, age, occupation, town or city in which they work. In order to gather data related to the research goals, the second part of the questionnaire consisted of seven questions, three of which were of a closed type, and four were open-ended. We would like to point out that the open-ended questions did not contain any suggestions as to the answer, hence providing an abundance of valuable material for analysis. Relating to the first two research goals, the teachers were asked about the way they adapted to online instruction. This question was closed-ended, encompassing 8 claims that the teachers assessed according to a five-level Likert scale (1 – strongly disagree, 2 – mostly disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree). In order to gather data related to the third research goal, two questions were included. The first question – closed-ended, with an exhaustive set of responses on platforms and applications, was directed at identifying the dominant means of realising distance instruction. The second question, open-ended, required the teachers to describe how they used the services they specified in the previous question. Gathering of the data for the fourth research goal was realised through two more questions: a closed-ended one where the teachers answered whether or not they thought that students can thrive through distance instruction, and an open-ended one where they could elaborate why they thought it might not be the case. In order to gather data for the last two research goals, the questionnaire was rounded up with two more open-ended questions. The questions were aimed at identifying the main difficulty that the teachers faced in online classes, and the distance learning possibilities that they may wish to keep in their future work.

Quantitative and qualitative analysis was used for the processing and evaluation of data. Basic descriptive parameters were calculated based on the obtained results, and certain inferential statistics procedures were also applied. The SPSS Statistics V26 programme was used for statistical data processing. The non-parametric Kruskal-Wallis H test was used to compare the differences in answers considering the teachers' age group (Opić, 2010; Petz, 2007), with a statistical significance of 0.05.

Since we decided to use a random sample, the conclusions cannot be considered general and applicable to the entire population of music school instrumental teachers. It is, however, possible to reach some conclusions based on this research. The research was realised via a *Google* questionnaire, and it was based on voluntary participation. Apart from being distributed through social networks during a period of two weeks, the questionnaire was also forwarded (in e-form) to the administrative offices of music schools in Serbia, from where it was further distributed to the teachers.

■ THE RESULTS

We asked the teachers to give us their opinion on how they adapted to the realisation of online instrumental instruction in general, after the COVID-19 pandemic was declared. Most of the teachers stated that they had adjusted successfully when it came to planning online classes ($M = 4.08$), cooperating and communicating with the students ($M = 4.05$) and parents ($M = 4.00$), and working on technical devices ($M = 4.00$). A slightly smaller number of teachers stated that all the necessary technical conditions for online instruction were met ($M = 3.84$). More than half of the teachers feel that it was very difficult to evaluate learning outcomes with this new way of working because it lacks a complete insight into the real activities of the students ($M = 3.85$), and that preparing online classes requires a lot more time than preparing regular ones ($M = 3.63$). Apart from this, the teachers are not entirely contented with the support and help from the relevant ministry in the area of organising online instrumental instruction ($M = 2.69$). The biggest dispersion in answers was related to the statements regarding the technical conditions for the realisation of online instrumental instruction and the time the teachers spend to prepare it ($\sigma = 1.21$), and the smallest for the answers on the level of satisfaction with the support and help from the relevant ministry in the area of organising online instrumental instruction ($\sigma = .98$). Considering the obtained results, we can say that most of the teachers are generally satisfied with how their online classes had turned out, but not with the support and help from the relevant ministry, which leads us to the conclusion that the teachers overcame the difficulties they encountered in this new way of teaching mostly on their own.

We divided the teachers according to their age into four groups: teachers aged 34 or less (A), aged 35 to 44 (B), aged 45 to 54 (C), and aged 55 or more (D). We compared their opinions on how they adapted to the realisation of online instrumental instruction in the first three months. The results have shown that the youngest teachers are the most satisfied with their technical skills (operating technical devices) ($M = 4.32$); compared to other age groups, they also pointed out more often that they had all the technical requirements for realising online classes met ($M = 4.14$). Also, the youngest teachers are slightly better satisfied with how they planned their online classes ($M = 4.28$), and with their cooperation and communication with the students ($M = 4.14$) and parents ($M = 4.10$). The oldest teachers stated that, when compared to preparing face-to-face classes, the preparation of online classes took a lot of time ($M = 4.15$). In general, all the teachers, particularly the eldest ones ($M = 2.32$), were dissatisfied with the support from the relevant ministry in the area of organising online instrumental instruction.

By applying the Kruskal-Wallis H -test we checked for the statistically significant differences between the teachers' responses in relation to their age. The testing has pointed to a statistically significant difference at a level of .05 for the statements concerning the skills to operate technical devices ($H = 31.135$, $p = .000$) and for meeting the technical requirements for the realisation of online classes ($H = 11.924$, $p = .008$). For the statement "I am satisfied with my technical skills", a statistically significant difference was found between the first and second group ($H = 4.605$, $p = .032$), the first and third group ($H = 7.223$, $p = .007$), the first and fourth group ($H = 27.873$, $p = .000$), the second and fourth group ($H = 14.450$, $p = .000$), and the third and fourth group ($H = 12.170$, $p = .000$). For the statement "I have everything I need for the realisation of online classes", there was a statistically significant difference between the first and second group ($H = 5.961$, $p = .015$), the first and third group ($H = 7.393$, $p = .007$), and the first and fourth group ($H = 5.400$, $p = .020$). Considering the obtained results, we can say that the youngest teachers have the highest level of skill when it comes to operating technical devices, and that they were also adequately equipped for the realisation of online classes. There were no statistically significant differences relating to other statements, considering the teachers' age group.

The teachers used different platforms and mobile apps for the realisation of online instrumental instruction, most of all *Viber* (193 – 64.33%), *Skype* (116 – 38.67%), *WhatsApp* (90 – 30%), *Zoom* (81 – 21%) and *Google Classroom* (68 – 22.67%). Considering that *Viber* is nowadays one of the most used communication apps in general, this result is hardly surprising.

Table 1: Platforms used by the teachers for the realisation of online classes

Means of realising online classes	<i>f</i>	%
Viber	173	78.64
Skype	98	44.55
<i>WhatsApp</i>	66	30.00
Zoom	51	23.18
Google Classroom	44	22.00
Microsoft Teams	30	13.64
Yammer	23	10.45
<i>YouTube</i> channel	21	9.55
Messenger	18	8.18
Google Duo	15	6.82
E-mail	13	5.91
Telephone	7	3.18
Edmodo	2	.91

When it comes to the open-ended question “Please explain how you used the chosen platforms and mobile apps in online classes”, 80% of the teachers answered. Considering that musical instrument instruction only happened in real-time, the teachers used those services which could provide synchronous communication (videoconferencing). However, touching upon different problems in synchronous communication in their answers, such as poor sound and image quality, their frequent interruptions, and occasional misalignment, most teachers said that they additionally practiced asynchronous communication with the students. As they said, since they were occasionally unable to hear the students play fully and without interruptions during video calls, the teachers would ask the students to record themselves playing, and send them the recording. That way the teachers had the opportunity to analyse the students’ work in more detail, and to provide precise feedback and further working instructions. The teachers would also send the recordings of their own playing to the students, so that those students who did not understand all the particulars of an online class could listen to the recording several times over, and not fall behind. The asynchronous type of communication was also conducted through digital media

messages (written feedback on the students' playing based on the recording they sent, sending musical notations, announcements, arrangements, and such).

When I give a class, it's usually through Viber video calls; on top of that, the students will often send the recording of their playing in between classes, and I write back, with comments on what needs to be corrected, or I tell them in class. Other than that, we use messages to agree on time slots for class, and if something comes up, I send an e-mail or a Viber message, also notes, announcements and such. (Belgrade, 29 years old, flute)

I mostly teach through Viber, because almost everyone has and uses this app, sometimes Skype, Google Classroom... Between classes I often send the student a recording for something that they should rectify, if I see that they did not understand something... That's really useful, because the student can go through the recording I sent several times. They also send me (recordings), and that allows me to hear everything, beginning to end, without interruptions, which sometimes isn't really possible when we have a class through these apps! (Kruševac, 45 years old, piano)

I give my classes through videoconferencing exclusively. Sometimes through Viber, sometimes through Skype, Zoom... it depends on the students and what they can use. Although this isn't where all the work is done, because the students have to send me the recordings of themselves playing regularly, that I then comment on and analyse in detail in my e-mails, adding some useful exercise examples and such. (Novi Sad, 34 years old, violin)

I give my classes through video calls. In between classes I send the programme that the students should learn, I correspond with them and their parents, report on their progress, and so on. I send video and audio recordings to the students, mostly through Viber, so that they could listen to it several times over, in case they did not catch everything in class... on the other hand, how they can get everything to begin with is beyond me, because the sound and image during the video calls are often disastrous, so that we have to shout, reconnect... (Belgrade, 42 years old, clarinet)

We asked the teachers to single out the key problems they met with in the realisation of online classes. Three of the teachers did not answer this question. The predominant difficulties were poor sound and image quality during video calls (154 – 70%) and a weak internet connection (63 – 28.64%). Another problem was the tuning of certain musical instruments that the students play at home, a lack of technical equipment in some of the students' homes, and inadequate home conditions for classes. We would like to point out that some of the teachers, when describing the problems that they faced, emphasised how dissatisfied they were with the support from the relevant ministry.

There's the poor internet signal and working conditions (there is a lag in audio and video calls which most often disturbs the normal flow of a live class, and the recordings are sometimes very slow to load), a few of the students have no instrument to practice on, most of the students do not own a tablet/laptop, and the ones they got from schools are in poor condition and of poor quality. Some of the students do not have an instrument of their own, which makes keeping the continuity of classroom learning impossible. Again, some of the students have low-quality instruments, and that hinders the class as well... In general, while we make do with what we have, the minister doesn't pay nearly enough attention to the arts. (Niš, 55 years old, cello)

The internet connection is sometimes weak, the sound and video are of a poor quality, and I don't have an accurate idea of the tempo, because something is always speeding up or lagging behind. The sound is also distorted, and I have to be very careful not to hurt my students with some (undeserved) remark on their playing. Another problem is that the younger students who play the violin cannot tune the instrument by themselves, which makes it impossible for them to play at all. That takes a teacher. Everything I've done in the past 6 weeks in online classes I would have done in 15 days in a regular class, and that is very frustrating. (Novi Sad, 37 years old, violin)

Poor sound, so that I cannot really hear what the student is playing. I won't even mention the details in dynamics... few professional digital tools available for students and teachers alike, weak internet connection, for this type of instruction every student and teacher should have at their disposal high-class studio equipment, both audio and IT (microphones, cables, screens, sound cards, powerful computers...) with the support and help from the state. In this situation that we have found ourselves in, the ministry has completely ignored the fact that there are art schools in Serbia that their instructions cannot be applied to. (Belgrade, 43 years old, guitar)

Apart from the fact that the sound in video calls is terrible, some of my students have the piano in the living room, where the rest of the family spend their time during class. I think it's very disturbing for their work! They cannot concentrate properly. The class requires absolute peace and quiet. Also, because of the poor internet connection and the sound lag, it's impossible to provide quality instruction in certain aspects of the class. Rhythm, for example... working on dynamics is also damaged because of the poor sound quality. (Trstenik, 29 years old, piano)

When asked *Do you think that the students can thrive working and learning in online classes just as well as in regular ones* most of the teachers (203 – 92.27%) responded in the negative; a mere 7.73% of the teachers feel that the students can thrive equally well in both settings. By splitting the answers according to the teachers' age groups, we have obtained results which show that the vast majority of the youngest teachers (34 years or less) – who indicated that they had a higher level of skill when using technical devices compared to their older colleagues – state that the students cannot thrive in online classes as well as in regular ones (YES – 18, or 18.75%; NO – 78, or 81.25%). In that respect, the teachers from the third group have shown to have more confidence in the ability of students to thrive in online classes (45 to 54 years; YES – 10, or 25%; NO – 30, or 75%), along with the teachers from the fourth group (55 years or more; YES – 4, or 21.05%; NO – 15, or 78.95%), while the teachers from the second group (35 to 44 years) have the least faith that thriving is possible in online classes (YES – 10 – 15.63%; NO – 54 – 84.38%).

We asked the teachers who believe that students cannot achieve the same amount of progress through working and learning in online classes as opposed to regular ones to explain why they feel that way. Just as Alan Fraser, Canadian pianist and pedagogue, states that learning the structure of music requires a maximum of kinaesthetic wealth and clarity (Frejzer, 2011:388), so the teachers point out the lack of direct contact between themselves and the students as the main reason. As they say, direct contact is crucial for solving problems that arise during the formation of the students' technical and performance habits (especially when it comes to beginners), that is, for helping the students to perfect the proper body posture needed to avoid the unpleasant side effects of incorrect practice (tendon injuries, muscle spasms), the position, coordination and agility of the hand during playing, whose automatisations are key in achieving a beautiful, expressive tone. Apart from this, the teachers touched upon the lack of non-verbal communication in online classes, which, in their words, is another key element in correctly interpreting the emotions and attitudes of the students, also relevant for minimising the risk of misunderstandings in communication. A slightly smaller number of teachers pointed to problems with tuning and string replacement, and the students' inability to have a live practice session accompanied by the *répétiteur* due to poor sound and image quality during video calls. In the words of the teachers.

Since contact – touching hands and the like – is very important in instrumental instruction, we have a big problem, especially with the beginners. The hand gradually becomes either too stiff or too relaxed, too low, too high, and I am not physically present to help them. Developing the proper feeling in the fingers and hands is impossible without contact with the teacher! Besides, the beginners cannot tune their instruments. (Belgrade, 55 years, violin)

Direct contact between teacher and student is very important for learning a musical instrument. No platform can provide a faithful reproduction of an instrument's sound, the teacher cannot really hear and correct the intonation of the student, nor the dynamic nuances, colour and precision of articulation. Also, in order to master performance technique, many things must be shown hands-on, practically, otherwise everyone could learn to play masterfully just by listening to instructions! (Kruševac, 34 years, flute)

Physical touch, "reading" the situation, the proximity to the students and their instruments, perceiving details during playing, the sound nuances, physically pointing to the text, the position of the hands or the instrument, a touch during demonstration or correction... these are all but a small number of a lot of features that can never be present in online classes, and they each make such a great difference. Also, there is no replacing the word of mouth, the facial expressions, gestures, socialisation... all of those have an influence on the students' development and learning. (Belgrade, 47 years, harp)

It isn't possible to establish a real connection with the student, so that I know just by the look in their eyes if I need to clarify a figure, a skip, or to apply some other solution to a potential problem. Besides, the students, beginners in particular, need 3D feedback in learning an instrument to develop posture and embouchure in real-time. That takes embodied, real teaching. (Novi Sad, 47 years, piano)

Instrumental instruction is individual and interactive. In such a type of instruction, it is much easier for the students to concentrate in normal conditions, when they are in the same room with the teacher, than in distance learning. I give classes through video calls, which is as close as it gets to a regular class, but it still cannot compare with regular classes, because in a classroom I can observe the students from different angles, and it's easier to correct the way they hold their instrument or the playing technique. Also, it is much easier for the students to listen to and analyse my playing when I give them an example when we are in the same room, than in distance learning. There is also the fact that calls are disrupted due to poor internet, the sound and image are bad, so it's impossible to have a really satisfactory cooperation of two instrumentalists – the student on a bowed string instrument and the répétiteur at the piano (to set a tempo that the student is comfortable with, to actively listen...). That is only possible in practice where the répétiteur and the student are next to each other. (Niš, 31 years, violin)

When asked about an online class feature that they would keep in the future, 37% of the teachers couldn't find a single possibility or positive feature of distance learning. The remaining, larger number of teachers (138 – 63%), usually named the possibility

of communicating through the internet with the students who cannot attend regular classes due to illness, or another valid reason. Also, this type of learning, as a smaller number of teachers believes, should be applied as additional instruction for those students who meet with difficulties in their studies, or for students who are particularly talented. As they further say, the teachers would keep the possibility of exchanging audio and video material in the future, both of their students' playing and their own, in order to solve some of the issues that students encounter in their practice. They pointed out in particular that recording their own playing may be very useful for the students, because comparing and analysing their own recordings in detail allows them to develop more autonomy and the ability for self-checking and self-evaluation. Also, the teachers believe that students practice more often if their parents are more involved in online classes. Namely, the parents are often those to record the younger children playing, and they are the ones who send the recordings to the teachers. The teachers also state the following.

Giving extra online classes for talented students, or for students who find the programme difficult. I would keep the possibility of sending video and audio recordings, because I can tell by those recordings whether the student has been practicing or not. I also like that the parents are much more involved with the classes, because they listen to them and record them, and the students practice more when their parents are recording. (Trstenik, 38 years, piano)

It's very useful to send the students my recording of a certain passage of a composition, or the entire composition, as they can use it to correct their work. They also record themselves and compare the recordings. That way they listen to and check themselves more often, they learn to stand on their own and to develop a critical view of their own playing. (Belgrade, 47 years, flute)

I would definitely keep distance learning for quick checks or for solving some problems that the students encounter while practicing. As a teacher I think that this has certainly been a new, positive experience, although I do believe that we should have been given a standardised set of instructions on how to provide online education from some "umbrella" organisation. (Novi Sad, 54 years, violin)

■ DISCUSSION

During the state of emergency that ensued after the COVID-19 virus outbreak was declared a pandemic, the music education system in the Republic of Serbia suffered a massive transformation. In a very short period of time, music education had switched

to the distance learning system which, on top of requiring new methods and forms of work, brought about completely new didactic demands, pointed towards new media. Consequently, considering the new state of affairs in the music education system and the results of relevant research dealing with the functioning of the music education system throughout the state of emergency, we wanted to gain a broader view of how online instrumental instruction functioned in Serbia, from the perspective of the music school teachers.

According to the results of the survey, the teachers have generally adapted well to online classes, in spite of numerous difficulties; they maintained communication with the students and managed to keep the “vital functions” of the music education system alive. However, the teachers were not fully satisfied with the support and help from the relevant ministry in the area of organising online instrumental instruction. Although the relevant ministry had offered certain solutions that would allow the schools to continue working in those difficult circumstances soon after regular classes in schools were shut down, the education process was insufficiently coordinated, as our teachers say, and it depended almost exclusively on their own resources. The probable reason behind this was the fact that the main, and perhaps only goal of the ministry in these new circumstances was to finish the school year in time. Although reliable, the system is still quite large and slow, and the schools themselves could use their autonomy, in that respect, and be more active by suggesting certain proactive strategies that would better support the complexity and specificity of instrumental instruction. Following upon that, immediately after things return to normal there is work to be done on the digital transformation of music education, because it cannot simply be “grafted” onto the existing way of work in music schools. That way of work needs to be examined in a different light and fundamentally reorganised.

Analysing available research on online instrumental instruction during the pandemic, we have not found any data indicating lower technical competences in older teachers; instead, we relied on results of older research pointing to the fact that the teachers’ technical skills were mostly dependent on their age (Buabeng-Andoh, 2012; Cox, Preston & Cox, 1999). Hence, when it comes to the teachers’ age groups, the younger teachers adapted to online teaching with more success than their older colleagues, particularly in the realm of using technical devices and being adequately equipped. Considering the implication that not meeting technical requirements can lead to a lower skill level in using modern technologies, which results in older teachers needing more time and effort to prepare online classes (as confirmed by this research), this information hardly comes as a surprise. Moreover, considering the period in which the younger teachers grew up and received their education, it is also not surprising that they should possess more technical aptitude. With all this in mind, it is important to emphasise the need for intensifying technical support to teachers, especially older ones, regarding competences for online instruction. It is also necessary to intensify financial support to the teachers, considering the deficit

in technical resources that are needed for a more efficient realisation of online classes.

When it comes to means of realising online classes, the results have shown that the teachers use platforms and applications which provide options for both synchronous (videoconferencing) and asynchronous communication. Although it was never intended for education and does not belong to online learning systems, the *Viber* application turned out to be the most used. We suppose that the reason behind these results is previous knowledge of tools that both the teachers and students used for everyday communication before the pandemic broke out.

Describing the instruction system, the teachers pointed out that musical instrument classes took place in real-time exclusively, while the activities that made up asynchronous communication took place in between classes (exchanging audio and video recordings of the students' and teachers' playing, sending music scores, written feedback and other notifications). The main reason for including asynchronous communication in the teaching process was to make up for poor sound and image quality during video calls through the exchange of recordings, since the lack of quality in transmission kept the teachers from gaining a clear insight into their students' work. Thanks to the recordings sent by their students, the teachers could listen to their playing in continuity, and analyse it in more detail. The teachers would also send recordings of their own playing to the students, much like their colleagues from Greece (Ververis & Apostolis, 2020), to help them solve certain problems they encountered in practice.

Other than sound and image that, according to 75% of the teachers, did not reach the quality needed for the fulfilment of technical, tonal and dynamic requirements, weak internet connections represent the next dominant difficulty in the realisation of online instruction, according to 23% of the teachers. Apart from technical problems, the teachers also single out low quality, out of tune instruments that the students use for home practice, along with a lack of adequate technical equipment, but also domestic circumstances that are inconducive to undisturbed learning. These types of issues met by the teachers in online instrumental instruction also came up in the above-mentioned research (ABRSM, 2020; Ververis & Apostolis, 2020). Furthermore, when talking about the problems they faced during online teaching, the teachers also pointed out a lack of concrete instructions and support from the relevant ministry, that, according to their words, "completely ignored the fact that there are music schools in the Republic of Serbia". The lack of a concrete set of instructions by the governing bodies was also pointed out by teachers who participated in other research (Calderón-Garrido & Gustems-Carnicer, 2021; Daubney & Fautley, 2020; Encarnação, Vieira & Brunner, 2021). Regarding this, it is necessary to keep in mind that the complexity and specificity of instrumental instruction require an entirely different methodology of work, and that the approaches to continued work during the pandemic, as proposed by the relevant ministry, do not function properly in

an online environment (for example, approaches to the formation of performance technique which are impossible to undertake without the teacher being physically present), and are therefore not efficient in developing music knowledge and skills.

In connection to this, when asked whether the students can achieve the same amount of progress working and studying in the current online learning conditions as in direct instruction, 92% of the teachers responded in the negative. What is interesting is that the youngest teachers, although they successfully adapted to the realisation of online classes and to the use of technical devices, while also being quite satisfied with the cooperation and communication they had with the students, feel, just as their older colleagues, that the students cannot thrive in an online learning environment as well as in regular classes. This attitude stems from the fact that, unlike direct instruction, online instruction falls short of non-verbal communication that is crucial for the correct interpretation of emotions and attitudes of the students and the mitigation of misunderstandings during the transfer of information. Furthermore, it is impossible to achieve a coherent practice that includes a student and *répétiteur* playing together due to technical difficulties, and the physical contact with the students, which is crucial when working on the technique of playing a musical instrument, is also lacking. Teaching any instrument, especially in the early stages of music education, is extremely complex and demands a direct contact with the student, especially when checking the position and hold of the instrument, the student's posture and the tension in their hands during playing. That is the main reason why our teachers, but also the teachers from other countries, feel that the students (beginners in particular) cannot progress at the same pace by working and learning in an online environment as they can in regular classes (ABRSM, 2020; Koutsoupidou, 2014; Ververis & Apostolis, 2020). The analysis of the aforementioned research did not produce any suggestions as to a potential technological solution to the problem of building up performance technique without direct tactile involvement or mutual tactile reactions with the instrument.

The unpreparedness for the sudden transition from regular classes to online teaching was bound to produce negative experiences and numerous obstacles that not only our teachers, but teachers from other countries as well, had to face (considering the similarities in results obtained through research in other countries, compared to our own). Regarding this, a smaller number of teachers who participated in this research failed to recognise a single positive side to online teaching. Still, the majority of the teachers are not entirely conservative in that respect, and they list the possibility of communicating through video calls as a positive potential of online learning, to be used as additional instruction for talented students or students who find the programme challenging, or when students, due to illness or other valid reasons, cannot attend regular classes. Exchanging recordings of the teachers' and students' playing, to solve certain problems that the students encounter in practice, is the next option that would

be kept in further work. Such practice would allow the students, by comparing their recordings, to analyse their performance more carefully and to develop a healthy approach to self-criticism. According to the teachers, that also develops their independence and the ability to self-check and self-evaluate. The teachers who were part of other research samples agree with our teachers in this respect (Encarnação, Vieira & Brunner, 2021; Ververis & Apostolis, 2020). Their opinions should serve as a framework for improving the possibilities and conditions for a more successful realisation of online instrumental instruction.

■ CONCLUSION

Considering that the process of online instrumental instruction within the music education system of Republic of Serbia was “in force” faster than it was planned, and that a clear, consistent and applicable strategic initiative for this type of instruction did not exist at the moment, the teachers generally adapted well to the realisation of online classes, and managed to keep the communication with the students at a high level. However, the *ad hoc* approach to distance learning has brought about a plethora of problems and challenges that the teachers had to face in the first few months of work. Due to problems with a weak internet connection and poor sound and image quality during synchronous communication, the teachers were not able to obtain a clear insight into the work of their students. On the other hand, pointing out that some approaches that are crucial in the development of music knowledge and skills cannot function in an online environment, the teachers expressed their concern for the students’ progress. In spite of the problems and challenges, the participants in the survey were not entirely conservative in their views and were open to the application of distance learning, but only when it was absolutely necessary.

The results of this research provide valuable information on the way distance learning works in music education, because the goal was to establish what difficulties the teachers had met with in their work, how they managed to overcome them and in what degree, and what experiences they planned to use in their future work. An important implication stemming from our research, but also from similar endeavors, is tied to the logistic and financial support from the state, institutions and relevant governing bodies (considering the lack of technical means and overtime work), and to technical support related to competences relevant to distance learning. With regard to this particular issue, the schools should also take a more proactive approach, because the system, although reliable, is quite large and slow. Apart from adequate working conditions and support to the teachers for realising online instrumental instruction, achieving satisfactory learning outcomes and a rounded quality of online instruction demands a coherent, applicable, clear strategic plan and an adequate

technical solution which completely supports the specificity and complexity of the methodology of work that is characteristic to instrumental instruction.

We believe that it is necessary to conduct research that would focus on the challenges, obstacles and values that the students and their parents had met with throughout the realisation of online instrumental instruction.

Considering all of the advantages, experiences, and results achieved in the realisation of distance instrumental instruction, the online learning model, as a part of experience that all the teachers have now gone through, represents a relevant issue to be discussed in the framework of future music education. Finding a solution to this problem can be achieved through the implementation of appropriate strategic, technological solutions that would provide realistic support to all the aspects of instrumental instruction, and through the creation of an adequate social environment which would affirm this type of music education.

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ДИСТАНЦИОННОЕ ОБУЧЕНИЕ ПО УЧЕБНОМУ ПРЕДМЕТУ «МУЗЫКАЛЬНЫЕ ИНСТРУМЕНТЫ» ВО ВРЕМЯ ПАНДЕМИИ COVID-19 С ТОЧКИ ЗРЕНИЯ ПРЕПОДАВАТЕЛЕЙ

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Аннотация. В связи с тем, что пандемия вируса COVID-19 вызвала необходимость введения онлайн-обучения во всем мире, включая Сербию, система музыкального образования претерпела значительные трансформации; учителя столкнулись с рядом препятствий и проблем в своей работе. В данной статье мы высказали наше намерение дать чёткое представление о преподавательской практике, реализовавшейся после объявления пандемии. Мы задались целью определить препятствия в проведении онлайн-обучения предмету «музыкальные инструменты» (обучение игре на музыкальных инструментах), а также преимущества, которые, по мнению учителей, можно было бы интегрировать в традиционное обучение после окончания пандемии. На выборке из 220 учителей начальных музыкальных школ было проведено исследование, в котором сочетались качественный и количественный анализы собранных данных. Результаты показали, что учителя, особенно самые молодые педагоги, хорошо справляются с трудностями в онлайн-обучении. Из трудностей, с которыми сталкиваются, учителя чаще всего выделяют те, которые по своему характеру относятся к техническим, а также жалуются на невозможность работы над техникой овладения навыками игры на инструменте, по причине отсутствия непосредственного контакта с учениками. Почти все учителя считают, что учащиеся в онлайн-обучении развиваются не так хорошо, как при обучении в классе. Тем не менее, в своей будущей работе учителя продолжили бы вести аудио-видео записи своей собственной и игры учащихся, а также проводить онлайн-занятия в ситуациях, когда ученики болеют или по какой-то другой причине пропускают занятия в классе. Педагогическое значение статьи относится к необходимости внедрения технологических решений, поддерживающих все аспекты инструментального обучения, а также к более интенсивной профессиональной поддержке учителям, в частности старшего поколения, в области тех компетенций, которые относятся к онлайн-обучению.

Ключевые слова: преподавание предмета «музыкальные инструменты» (обучение игре на музыкальных инструментах), дистанционное обучение, учителя, учащиеся, пандемия, COVID-19.

