Michael Pabst-Krueger / Annette Ziegenmeyer (Editors)

Perspectives for music education in schools after the pandemic

A joint publication by authors of the network of
Music Teacher Associations in Europe

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Preface
Annette Ziegenmeyer & Michael Pabst-Krueger (Germany)

How and *what* can we learn from each other in times of a worldwide pandemic that effects the education system as a whole and music education in particular?

The global outbreak of the coronavirus pandemic showed that on the one hand people had to learn quickly how to manage how to interact and how to organize learning processes within a new framework. On the other hand, it became clear that it had never been so easy to look beyond the borders of one's own country and to get connected: The sudden need to interact via video conferencing (a possible tool that existed already before though) opened new doors to exchanges on a national and international setting. Everybody was participating in a world-wide learning process.

Since 2016, the Network of *Music Teacher Associations* in Europe (MTAs) under the umbrella of the *European Association of Music in Schools* (EAS) has exchanged and developed ideas and strategies on political work for music education in schools throughout Europe. Due to the outbreak of the pandemic, the annual meeting in 2020 had to take place on a video platform. The participants were very happy to exchange their recent experiences in teaching music during the pandemic and many forward-looking ideas for the further development of musical education were exchanged during these meetings. Furthermore, the idea arose to bring all these different perspectives from the different countries together in a joint publication.

This led to the idea of this joint publication entitled *Perspectives for music education in schools after the pandemic* for which representatives of European MTAs were invited to bring together the different experiences and perspectives that could be drawn from these challenging times during the pandemic (which is still going on).

Almost all articles were written by teams of authors from different European countries which made it possible to get a broad perspective on the specific aspects that became relevant during Corona.

The first article focuses on reactions and good practices for music teaching in schools from three countries: Germany, Greece and Turkey. The authors Alexis Kivi, Dimitra Koniari, Sezen Özeke and Hatice Çeliktaş analyze and compare how teachers reacted in different phases of the lockdown. In their different research projects, they focus on challenges of online and face-to-face teaching under the hygiene routines and analyse positive and negative effects of online teaching.

The second contribution presents one of the last articles by Irena Medňanská from Slovakia who unfortunately passed away shortly after drafting her contribution. In the article, Medňanská reflects on the challenges of teaching music in schools in Slovakia during the pandemic which were additionally impaired in many places by difficult technical and social framework conditions. Her assistant Mária Strenáčiková, Jr. helped us edit the article for this publication.

Third, Manuela Encarnação, Maria Helena Vieira and Georg Brunner bring together Portuguese and German perspectives and discuss results of their research on approaches and benefits of online teaching at schools and universities.

The fourth article by Benno Spieker and Morel Koren describes the general potential of digital media, focusing on music education in the Netherlands and Romania. As an example of best practices in online teaching and practicing Solfege, a platform called *Solfy*, which is already operating in its BETA form in Romania, is described in this article.

Finally, Mitsi Akoyunoglou (Greece) and Nataliya Domnina (Switzerland) draw their attention to the question of how to reach socially disadvantaged students in a hybrid music classroom and present various approaches that can be used by music teachers to promote an all-inclusive music class. Based on the *Universal Design for Learning* (UDL) the authors offer an educational framework guided by principles that promote equity and access to education for all.

With this publication and the ongoing exchange within the MTA-network, we want to encourage music educators in all European countries to get connected, to look beyond the borders of their own country, to learn from each other and seek to solve the challenges of these pandemic times together. The various perspectives brought together in this rather small publication shows that it is worth taking a step back from one's own experiences and to open up for wider perspectives and new impulses.

As the editors of this joint publication, it was a pleasure for us to work together with a team of highly engaged colleagues, to bring together their expertise and work on perspectives for music education during and beyond the corona pandemic. We would like to thank every one of our authors very much for their commitment, their dedication and their thoughtful collaboration.

(Luebeck & Hamburg, Germany, 15th March 2021)

Content

Reactions and good practices to new Corona conditions for teaching music in schools by music teachers in Germany, Greece, and Turkey

Alexis Kivi (Germany), Dimitra Koniari (Greece), Sezen Özeke & Hatice Çeliktaş (Turkey)

Abstract

The first lockdown of schools due to the Corona pandemic in March 2020 prompted a wide range of reactions from music teachers. This article presents several reactions by music teachers in Germany, Greece, and Turkey. We qualitatively analyzed interviews with music teachers in different phases: first, music teachers in Germany during the lockdown and partly during the first days of a limited reopening to face-to-face teaching in May 2020; second, music teachers after the lockdown in Greece in June 2020, and finally, music teachers in Turkey after a long lockdown in September 2020. This article outlines general reactions that music teachers reported and describes good practices and creative strategies in the three fields of online-teaching, face-to-face teaching, and hybrid teaching (a combination of both). As a reflection of those interviews with music teachers from three countries, the article summarizes positive and negative effects of online teaching and tries to develop future perspectives on how music teachers might continue teaching in this demanding situation.

1. Introduction

In March 2020, the coronavirus pandemic forced an abrupt shift of teaching conditions, including music education. Most governments around Europe temporarily closed educational institutions and promoted online education. In May 2020, some countries cautiously reopened schools with a lot of hygienic restrictions. However, countries across Europe are still experiencing a resurgence in the coronavirus pandemic, so we can still see evolving different types of music education in the beginning of 2021: face-to-face learning, with severe hygienic restrictions and/or the use of face masks, online synchronous and asynchronous education or a hybrid type of distant and face-to-face education. During this new situation, music teachers felt an enormous challenge: how to efficiently organize their music teaching respecting new coronavirus restrictions and following new technological demands? How to sing, how to play with musical instruments or how to stimulate students' creativity from a distance, or behind a face mask? Or even more, how to teach behind a screen without losing the energy of teaching "live" and to realize, in such a limited context, musical interaction as a human communication? We asked music teachers from primary and secondary schools in Germany, Greece, and Turkey how they reacted to this new situation: Which main challenges did they experience? How did they

react to them? What might be good practices they found after a while in order to overcome coronavirus restrictions? Therefore, we used data from guide-line based interviews with 15 music teachers from Turkey and 15 music teachers from Germany, and from an online questionnaire organized by the Greek Society for Music Education, that has received responses by 118 Greek music teachers. The collected data have been processed with qualitative analysis. Since we found that the answers and suggested practical solutions have been influenced by the different political reactions to the pandemic in each country, we will first give a short overview about those partly different situations.

2. Situation in Germany, Greece, and Turkey

Music teachers in Germany, Greece and Turkey had to find solutions in different frame conditions given by the school administrations or the ministries of education. Germany went into a first lockdown of all schools around March 17th in 2020, but at different times in its 16 federal states. But even in the single states, there was not always a clear order regarding how and when online teaching was to be started. Those decisions were often also taken by the single schools. As a result, we saw a wide range of reactions in Germany when the lockdown began: teachers trying simply to connect to their students, thinking alone or together with colleagues about next steps for starting first activities; meanwhile, Turkey and Greece had already started more online teaching. This first lockdown of schools lasted in all federal states until the end of the Easter vacations, after which schools started again between April 13rd and 27th. But already in this first lockdown phase, there were often sporadic, e.g. weekly meetings, especially with older students in the school, for example to let them pick up some papers and tasks, etc.

In Greece, the first lockdown started on March 11th and the government decided to suspend the operation at all levels of education nationwide. The *Ministry of Education and Religious Affairs* allowed the teachers to choose the way of online teaching that they would like to follow, and music lessons were not mandatory. The *Panhellenic School Network* provided digital classes for synchronous teaching (via *Webex*), asynchronous distance learning platforms (*E-class* and *E-me*) and web portals with digital education material. Additionally, on March 30th, the broadcast of educational programs for primary school students started on television, covering all subject areas. Online teaching was extended until May when schools gradually reopened with precautionary measures and with not more than 15 students in the classroom. Secondary education opened first and was followed by preschool and primary education. At that time the wearing of face masks was not recommended. However, indoor singing and playing wind instruments were prohibited. In September 2020, preschool, primary and secondary education started with face-to-face teaching and the mandatory use of face masks in the classroom. In the beginning of November, secondary education switched again to distance teaching and in

the middle of November, preschool and primary education switched to online education as well.

The first lockdown in Turkey began on March 16th. Education stopped in the schools and face-to-face education was expected to restart after some weeks. However, due to the increasing numbers of cases, on March 23rd the *Ministry of National Education* announced that the education in public schools would be given online via the government's platform *Educational Information Network* (EBA) or the educational television network called *TRT Okul*. Unfortunately, only subjects like maths, science, etc. were supported by them and not music. Therefore, the adaptation became more demanding for music teachers in public schools while private schools used *Google Meet*, *Zoom*, etc. earlier. The school year of 2020/2021 started again with online teaching and/or hybrid education on September 21st, while only students of pre-school and 1st grades began face-to-face education. Later, other grades gradually came back to school for certain days, for instance: two days in the school face-to-face and the rest of the time online. Since subjects like music, art, and physical education were and are excluded on the face-to-face or hybrid system, music teachers continued to give lessons online. Finally, on November 18, 2020 the government asked online teaching to start again until the end of the year.

3. Reactions, creative strategies and good practices of music teachers

3.1. Five phases of reactions in Germany, Greece, and Turkey

Before we describe creative strategies and examples of good practices, we find it important to give an overview on the broad scope of responses of music teachers to the pandemic conditions. On the one hand, due to the different political reactions in all three countries, music teachers and their students faced different possibilities of teaching and learning. On the other hand, it was striking, that teachers in all those different countries still went through the following five phases to a greater or lesser extent and at different speeds.

1st phase: No teaching

At the beginning of the lockdown, in all three countries schools had already been closed, but online teaching hadn't started yet. With regard to the differences of political decisions that we have described above, the phase of "no teaching" was observed in different time periods in Germany, Greece, and Turkey. While Turkey started online teaching after one week, Greece started around 10 days into the lockdown, while Germany began, on average, even later (although the timing in Germany was heterogenous due to specific laws in each federal proactive state). Because of the diversity of decisions, teachers sometimes had to become very active themselves to get in contact with their students. Out of these situations we received

a couple of reports that teachers didn't contact their students for several days or even a week and felt irritated and blocked in a psychological way. Some teachers described feelings of stiffness, helplessness, and despair. In Turkey and Greece, we received similar reports, but with fewer days characterized by a feeling of numbness and psychological despair than in Germany. This phase of "no teaching" changed in Germany sporadically and slowly into first contacts of e-mailing or even sending paper letters to the students with copies of music sheets, etc. Some teachers expanded this time more than others, so much so that they did not have regular contact with all students. Some students were difficult to contact due to a lack of appropriate technological equipment or internet connection or because of being in a difficult emotional or social situation. This lack of contact with single students continued in some schools for as long as several weeks.

2nd phase: Casual contacts via e-mail, messaging, and letters

In Germany, due to the described differences of reactions, we mainly found reactions of only sending e-mails or letters to their students or even some single telephone calls, but these contacts lacked meeting the full class in a group online forum, such as *Zoom*. Some music teachers from Germany worked like this for weeks before they saw their students online for the first time. This type of reaction particularly produced a lot of tasks such as listening to certain music pieces, researching mainly for information, and reading texts that were sent to the students. But interestingly, already during this phase some of the teachers had started sending creative tasks like learning a certain song at home, describing experiences with a given piece or even recording music themselves, etc. In this type of asynchronous learning and teaching, teachers and students did not meet directly at the same time in an online meeting.

3rd phase: Regular contacts via Zoom, Skype, Webex or e-learning platforms

After some weeks in all three countries, teachers set more or less regular contacts with their students. But even at this point we found a wide range of differences: Some teachers only used asynchronous e-learning platforms, while others had weekly online video meetings with their classes as a way of synchronous teaching (via *Zoom*, *Skype*, *Webex*, *Google Meet*, etc.). It was mostly during this phase that music teachers faced limitations to singing and making music in the context of meeting on *Zoom* or *Skype*. Mainly in Germany, due to these limitations, a minority of music teachers, who participated in the study, continued in asynchronous learning methods like messaging, calling, sending e-mails or uploading tasks to their students via online platforms, etc. At this point, some of the teachers reported that they could adapt more easily to the new situation because they had already used online platforms or even had their own website for sharing music examples, music theory, etc. with their students. In Greece, teachers mainly used the e-learning platforms provided by the *Panhellenic School*

Network. Most secondary music teachers used a combination of synchronous and asynchronous online teaching, while primary music teachers organized mainly synchronous online classes for 4th to 6th grade students and offered more asynchronous online teaching to grades 1 to 3. In Turkey, in the beginning of the pandemic, teachers were mainly asked to use the online platform *EBA*, provided by the government, where they could also find presentations for their lessons. However, music lessons were not supported on this platform by then. Therefore, schools asked music teachers to use platforms like *Zoom*, *Skype*, *Google Meet*, etc. Some teachers found ways to communicate easily through messaging platforms such as *WhatsApp*. Later, during the fall semester of 2020, music teachers are offered the use of *EBA* or *TRT Okul* alongside the other platforms. Nevertheless, in all three countries, music teachers first tried to carry out usual activities as far as possible, although retrospectively speaking, it would have been more productive for the learning processes if more music teachers had adapted the conditions for the entire school year earlier. For example, they could have just as easily focused on listening or reading tasks and joint discussions in order to then consciously concentrate more on practical music-making again after schools had reopened again. But even within regular online contacts with students via video meeting or learning platforms, we found differences in Germany, Greece, and Turkey: in Germany and in Greece, each school council and each teacher was responsible for deciding the type of teaching (synchronous, asynchronous, etc.) and the program of online teaching. Meanwhile, in Turkey online lessons were made synchronously, and the duration of the lessons was shortened to 30 minutes so that, in total, students had in one week also a shorter time of lessons than usual.

4th phase: Hybrid teaching: Online teaching in combination with single meetups in school

Until the summer break, Greece returned gradually and with severe precautions to face-to-face teaching, while Turkey stayed in only online teaching until the summer break on June 19th. But after the summer break, hybrid teaching was used in Turkey, in which students gradually started face-to-face learning in the fall semester of 2020. In Germany, this type of hybrid teaching had been going on until the summer break. Therefore, online teaching was often combined with one weekly meetup in the school to hand out some papers and to see the students at least once a week. Those meetups have been described by students as emotionally important in overcoming the isolation at home.

5th phase: Getting back to face-to-face teaching

Getting back to face-to-face teaching was realized in Germany, Greece, and Turkey at different times. In the sixteen federal states of Germany, school first started again with

full face-to-face teaching after the summer break between the 3rd or 31st of August (with start dates staggered depending on the individual federal state). Greece had started this phase of working already before the summer break in May, and in Turkey, with hybrid teaching, students started face-to-face learning occasionally. But even in this phase teachers faced a big challenge since, in all three countries, singing was highly restricted, while in Greece wind instruments also had to be avoided indoors.

3.2. Creative strategies and good practices

Despite the abrupt shift of the teaching situation and all the technological challenges, the lack of the appropriate equipment or of internet connectivity, music teachers showed an extreme ability to adapt to online teaching or face-to-face teaching with coronavirus restrictions and they remained, in a fairly large percentage, creative and flexible. Data from our surveys with music teachers from Germany, Greece, and Turkey showed that music teachers did find ways to overcome coronavirus and technological restrictions and developed their own good teaching practices during the pandemic. We present results under three main music teaching situations in general education:
1) online teaching, synchronous or asynchronous,
2) face-to-face teaching, with personal precautions and the use of face masks, and
3) hybrid teaching.

Good practices for online music teaching

Since online teaching was not often used as an active teaching model, especially when it comes to music lessons, this became more complicated during the pandemic. How to sing, how to play, how to create online? These unanswered questions are still in discussion but when it comes to reality, besides having an enormous workload, teachers mentioned that they also had fun through the learning process and created some unique experiences in their lessons. A couple of good practices/creative strategies for online teaching follow:

1. *Online concerts – live or recorded*: Music teachers conduct their lessons both in the classroom settings and in private studios. If they teach instruments, they basically do one-on-one face-to-face teaching. During the Corona pandemic, since there was no possibility to do face-to-face lessons, teachers tried to find ways to make students practice their instruments. For example, they asked students who were learning to play instruments (such as piano, violin, flute, etc.) to record themselves. Later, they prepared online concerts from these recordings and put them on their school's website. This gave not only the students and teachers but also the families and schools a motivation to hold on to the music. Through this, students were able to practice their instruments and teachers motivated them to

practice. Similar to this, at some schools, with the same idea, teachers organized online concerts through online platforms (e.g. *Zoom*, etc.) and invited the families and relatives of the children to the live concerts.

2. *Listening:* Interestingly, it was precisely this central activity with music that was intensified by online learning, as so many other practical activities were no longer possible. The music teachers who participated in the survey sent listening lists to their students, who found themselves in a situation where they had more flexible time to listen to whole pieces. On the other hand, the condensed situation at home in the family sometimes meant that it was difficult to find a good environment for listening to music. We found that those listening activities were better used as a kind of homework listening and less as a shared experience inside a *Zoom* meeting, etc., which also would have been possible. Older teachers even sometimes sent listening lists by letter, but mostly by e-mail, or listening lists were announced via teachers' own websites or e-learning platforms. Such listening tasks were sent out more in connection with "classical" themes such as "The Romantic Era" and less in connection with individual interpretation tasks. Looking at the reactions of the music teachers, it is striking how intensively the majority of teachers initially tried to carry out the customary music lessons and implement familiar practical activities. Viewed from a distance, a quicker change in concept would have been conceivable by focusing more on listening for the time being and taking the opportunity to build up a large listening repertoire. One best practice example was the so called "Corona Radio", where the music teacher regularly collected from each class music playlists and streamed them at certain times back to them as the "Corona Radio" of this certain class, which also served to keep the group together.

3. *Video clip making*: Music teachers are very active preparing ceremonies, especially for special days (e.g. national holidays, etc.). During these ceremonies, singing the national songs together with a choir or with friends and families are the most important activities. But during the Corona times, since this was not possible, teachers developed some online strategies instead, and video clip making counted as one of these ways. In order to make these videos, teachers first had to record themselves via audio singing the song with accompaniment and send it to their students via e-mail or other communication services (*WhatsApp, Telegram*, etc.). Later, they asked students to listen to these recordings and to record their videos while listening to the song with the headphones (this recorded accompaniment became a metronome for the student as well). These recordings were collected by the teacher and were put into one file merging all the students' recordings. Then all the students were able to sing the parts of the music and were able to see themselves on the video.

4. *Evaluation of singing and playing skills by video/audio recording*: Since music teaching reduced its activities by a great deal, assessment became a new challenge. Music teachers used assessment through video/audio recording also for assessing skills of singing and playing, since there was no chance to play face-to-face. This way, teachers understood and assessed their students' learning. An unforeseen upside to this method is that in order to make better recordings, students practiced more than usual.

5. *Teachers' own recordings*: In online education, teachers unfortunately do not have the opportunity to work effectively with students' playing and singing skills as in the classroom. In order to solve this problem, they shared their own performances of singing and playing via video/audio recordings to serve as a good model for the students. In this way, teachers also tried to create the best video/audio quality for their students.

6. *Using technology in teaching without limitation*: Teachers tried to use all the technological sources around them freely, became more aware of the sources around them, and created their own way using technology. One good example of this involved creating a white board from a paper mirroring with a webcam, using interactive online sources for learning and experiencing music, like apps on smartphones or tablets, sharing screens, etc.

7. *Using students' technological abilities*: During the Corona pandemic, teachers have more often and more intentionally made use of certain technological abilities of their students regarding devices, websites, cloud services, or music editing. This use of student skill was an advantage for the whole teaching process, and teachers often learned new technical skills from their students. For this, teachers encouraged their students to use technology with well-prepared questions during online lessons, so that the students could develop their music knowledge and music culture using internet sources efficiently.

8. *Family involvement*: During this process, families who were interested in music sometimes supported music lessons with their own instruments or by other means. This family music-making can be a good motivational tool for students and families and can be a good way for teachers to access the local community easily.

9. *Shifting the content on possible contents*: The sooner and faster teachers adjust themselves and their contents to the new limits on online possible contents like listening, talking about music, music theory or history or planning together, the next concert after the pandemic, etc. the more satisfied they seemed to be with their work and with themselves.

Good practices for face-to-face music teaching

The return to school after the lockdown was accompanied by strict hygiene routines, recommendations about physical distancing and wearing face masks in the classroom or even outdoors. Thus, teachers and students had to be at least one metre apart from each other by spacing the desks, limiting the sizes of classes and of age groups, or wearing a face mask all the time. All these measures disturbed the usual activities of music lessons and music teachers faced a number of new challenges:

1. *The face mask challenges:*
   a. *Speech listening*: Talk less, express yourself more with your eyes and gestures. Wearing a face mask affects the quality of the spoken words. Depending on the type of the mask, speaking behind a mask attenuates the high frequencies of the spoken words by various decibels. This means that teachers, in combination with classroom noise/reverberation and the absence of visual cues from the mouth, have to speak louder in order to be intelligible to their students, and, in that way, they are more vulnerable to voice fatigue. However, music teachers have a great advantage over their colleagues. They are used to using a variety of visual and bodily cues while conducting, such as eye gaze and bodily expressive gestures, to communicate, for instance musical information such as meter or tempo. So Greek music teachers, who were obliged to wear a mask all the time during teaching, took advantage of all these expressive gestures for music that they use with their students during choral or orchestral conducting, and they used it on purpose in the classroom, instead of "yelling behind the mask", as a music teacher reported. They agreed with their students upon the meaning of different hand gestures and encouraged pantomime games between students in order to find funny new ways of communication through eyes and gestures, with minimum of talking.

   b. *Mouth placement*: Make videos of yourself singing or speaking. In order to show their students how to sing properly and the correct mouth placement, many teachers proceeded with recorded videos of themselves singing or speaking without the mask and showed them in the classroom. They also encouraged students to prepare at home their own videos with singing or playing music without the mask and to show them to their classmates too.

   c. *Singing*: Singing with close-mouth (*bouche fermée*) or using the "humming" technique. The "Humming" exercise is a very common warm-up activity for singers. While keeping the lips closed the singer produces a "hmmm" sound. This kind of vocal exercise was reported by Greek music teachers as an option of singing inside the classroom, during June 2020, when indoors singing was

forbidden. However, they reported that they still continued to use it even in September, with the reopening of schools and the mandatory use of face masks.

2. *Encouraging students to make their own music instruments*: In order to avoid exchange of music instruments, music teachers asked students to make their own "homemade" music instruments from recycled materials and bring them in the classroom.

3. *Practicing body percussion activities*: Teachers explored sound body percussion activities encouraging students to make as many sounds as they can with different parts of their bodies and performing body percussion sequences.

4. *Practicing music listening*: Music listening activities were the most frequently chosen activities to replace the absence of singing, moving or performing with music instruments, following Coronavirus restrictions. Music teachers engaged students to actively participate in listening to music following listening maps or creating their own, or by patting a rhythm or playing a rhythm part with body percussion.

5. *Making parents/caregivers teachers' allies:* Parents and caregivers may become great allies for music teachers. Many teachers testified that staying connected with them helped their students to make things with music at home. They mainly advised them how to structure a music routine at home and encouraged them to sing and share music moments with their children.

Good practices for hybrid teaching

Hybrid teaching, which is an approach that combines both face-to-face classroom teaching and online learning activities, started to be intensively discussed during the time of the pandemic. When this is the case during this special period, above mentioned approaches of face-to-face and online teaching can be counted as examples of hybrid teaching as well. Perhaps strengthening the idea of family involvement, enhancing music at home and community can be counted as one of the important creative approaches during the Corona pandemic.

4. New challenges as an opportunity for change

Teachers from Germany, Greece, and Turkey shared their experiences of coping and "surviving" during the first lockdown of the Covid-19 epidemic. It was striking that in all three countries, music teachers described positive and negative sides of teaching music online very similarly, since its characteristics are somehow universal and mainly based upon social interaction principles.

4.1. Positive and negative effects of online teaching

Music teachers from Germany, Greece, and Turkey found both positive and negative reactions concerning online teaching. The main points are the following:

Positive	Negative
• Since there are enormous numbers of materials and online sources, teachers became more aware of the many existing materials and online source. It was thus very convenient to access online materials and present them to students. • More inner differentiation and new presence of "invisible shy" students due to the lack of group dynamic inside a classroom. • Increased communication between colleagues. • Partially more discipline from students within online lessons. • There are no distractions in the classroom setting. • Lessons are available from all over the world. • The child's participation in the lesson can be more active through visual and audio materials. • Students can express themselves more confidently and comfortably rather than in the classroom environment. • Children do not hesitate to sing. • Teachers tried to create the best videos for their students, therefore, they practiced more, and they involved more on music making by playing or singing.	• Strongly limited practical activities (singing, playing, choirs, orchestras, big bands, etc.), and therefore practices remain abstract in the music lesson and music is hardly connected to the body. • Effects on musical life in schools like lack of preparation of music for (e.g. graduation ceremonies or national holidays). • The forms of work within online learning are clearly dominated by small steps (longer phases of personal creativity but possible outside of lessons). • Didactic reduction becomes more important (complexity of content may decrease). • Students do not gain many new social skills. Online courses are suitable but limited (or insufficient) for the acquisition of social skills. • Social inequality was reinforced. • Limited in terms of gaining knowledge and skills. • Students sometimes could not take the lesson seriously enough and thought of it as a game. • Hardly any change of work phases and social forms possible and faster fatigue. • Technical inadequacy negatively affects the course (lack of internet, computer, sound system, projection device, more preparatory work, etc.).

First and most interestingly, participating music teachers in the three countries clearly described positive side effects of teaching in the time of the pandemic. A question for further research would be to understand if these positive effects are related only to certain ways of online teaching or if they may also appear as an effect simply due to a change in the lives of students and teachers. Did the fact that teachers and students suddenly found themselves in an environment outside their usual classroom settings and rules, beyond all their familiar habits, in which everybody has to shape and to contribute to the educational process, have a positive effect? Secondly, in looking at

the reported negative aspects or effects of online teaching, we could also ask: How much are these negative effects an inevitable consequence only of online learning or partly also an expression, that we have not found yet a bigger shift to new ways of teaching music, that can offer singing, playing, teaching, and learning music in locations or environments, that even cover Corona rules of keeping distance to each other?

4.2. Perspectives and thoughts towards a different future

As we mentioned before, music teachers from all over Europe had to adapt quickly to entirely new conditions at the beginning of the pandemic. It was understandable that disappointment would be part of the process (as well as a couple of new ideas and creative solutions that we have mentioned above), seeing as how the majority of teachers were trying to transfer as many aspects of their music lessons as possible in the new digital space in a short amount of time. But the longer the pandemic lasts, the more music teachers seem to understand that our initial question of this article – how to react to new Corona teaching conditions as a music teacher – would not be wide enough, if its answers only guide us to a couple of new technical skills, such as using better online learning platforms or conference tools like *Zoom*. For us, it seems important to broaden this question in two ways: first, by asking which of the technical skills or didactical ideas we learned, could be included in our music lessons also after the pandemic ended? Second, it seems important to broaden this question to an even more general reflection of our ways in music education before and after the pandemic: Like in a burning glass, the crisis puts a spotlight on social problems, social inequalities on the one hand that won't disappear with the end of the pandemic: for example, families who don't have the equipment or knowledge to support online learning of their children or have to provide technological equipment for three or more children at the same time or cannot offer more space than a shared table in the kitchen. On the other hand, the crisis has the potential to question our previous didactical habits and our general ideas of music education. It seems to be a missed opportunity if we come back after the pandemic only to our old way of teaching music without any changes – extended here and there with some new online learning elements or skills in using *Zoom*. The pandemic reminds us that school does not necessarily have to take place in a school building, that students do not have to be fixed at the same certain times in the same classroom. It reminds us also that there might be more locations and social activities around traditional school buildings that might offer students experiences in learning, and not every student has to inevitably follow the same activities at the same time in the same classroom, being assessed with the same scales. In analyzing the reports of the music teachers, one of the main positive sides was that the pandemic provoked a substantial development in dialogues between music teachers. If this new communication could be not only used to exchange sources,

ideas, and material for online teaching, but also to interpret every single challenge during the pandemic as a way to a deeper understanding of teaching music, we could use the crisis and all challenges as opportunities for developing new ideas of experiencing, teaching and learning music in the future after the pandemic. Overall, we would suggest a general shift away from the teacher's perspective of our initial question "How to teach music in Corona conditions?" to a more empathic view on the needs and interests of our students on the one hand and to the question, what music is and could be on the other hand. So, aside from many possible consequences we would underline at least:

- to keep students in mind, who might be at risk of falling behind or being beyond our "radar,"
- that all technical resources are only tools for different meanings of bringing people together to make music together as a group,
- to inspire their students and families to make music together,
- to be curious about new ways and locations of teaching and new ideas of creating music.

As reported from the majority of music teachers that participated in our research, even in these dystopian times, the main idea of teaching music remains the same: to enhance students artistic and musical development and to cultivate the joy and pleasure of experiencing and making music together.

Reflection on teaching music in schools in Slovakia during the pandemic and description of online teaching

Irena Medňanská & Mária Strenáčiková, Jr. (Slovakia)

Abstract

The Coronavirus pandemic, which hit Slovakia, other European countries and the whole world with various strengths and consequences in March 2020, changed the lives of people and the functioning of society. No one was prepared for the epidemic, which developed into a pandemic, and it was necessary to react quickly and effectively. Alternative solutions for full-time (in person) studies were sought for educating children and students in all school types and school levels. Online teaching, which we had little experience especially in primary schools with, became an accepted alternative. Another problem was the uneven accessibility to information-technical equipment, internet connection, and the different levels of digital user competencies. All that made online teaching difficult. This study reflects the online music teaching a) in primary schools, b) in the music departments of primary art schools, c) in the programs for kindergarten teachers, and d) at conservatories, higher secondary music schools. It presents the most suitable platforms that have been applied in teaching and it provides links to suitable music-educational DVD programs.

Introduction

Epidemics of deadly diseases have threatened humanity from the earliest times. Their consequences and interferences were often so radical that they affected the development of civilizations almost all over the world. In the spring of 2020, a new virus, referred to in medical terminology as SARS-CoV-2, caused COVID-19 to hit Europe. When first reports about the outbreak of the disease arrived from China to Europe in the beginning of 2020, we may have taken note of this, but the geographical distance from China (of which Europeans are aware), created certain barriers and frontiers that protected us. We did not take into account the existing migration of people between Europe and China, and we suddenly became cautious only after we became aware of the situation´s severity when Coronavirus spread rapidly in Lombardy, Italy. We realized the possibility of being affected by the virus. Gradually the new virus hit Europe; many countries and regions counted the infected, the victims, and the cured. The epidemic has escalated into the pandemic that has disrupted all sectors of all European countries' economic and social lives, including education.

From the history of the interruption of teaching at primary schools in Slovakia

In Slovakia, primary and secondary education went through the teaching process interruption already in 1960, when the schools were closed in December and January due to the so-called coal holidays[1]. Also, in the spring months, "flu holidays" are declared locally until present days, if 30% of students miss classes due to the excessive incidence of respiratory diseases. In some localities in Slovakia, people were used to short-term interruptions. In such a short period, teaching was not happening; the missing learning content was simply "added" to the next learning period, or it was taught in the afternoons, within the "nursery" or school club.[2]

In Slovakia, the new epidemic of coronavirus SARS-CoV-2 started spreading on March 6th, 2020[3], and in the second week of March, the "face-to-face-teaching process" was stopped at all levels and types of regional schools and also at universities and colleges. The worsening epidemiological situation required schools in Slovakia to stay closed for the entire spring period[4] and the educational situation had to be addressed in alternative ways.

The situation was also complicated due to the fact that, in this difficult situation, the government was changed after the parliamentary elections in February 2020, and all ministerial seats were taken over by new ministers.

Online teaching during the pandemic in Slovakia

Online teaching, as the only distance form of education, was initiated and coordinated by the school administrators themselves, and it depended on the technical and personnel conditions of the particular schools. It had to start as soon as possible. The transition to the online teaching surprised many Slovak teachers and this situation was new to them. The teachers had mixed feelings about it, because they had to overcome their own fears of virtual teaching.

Compared to other western European countries, online teaching in Slovakia has encountered a number of problems and limitations of a technical nature. One of the

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[1] The coal holidays were declared for 1 to 3 weeks due to the lack of heating fuel in schools. This was caused by various objective reasons, such as the lack of fuel funding, but the most important reason were insufficient fuel supplies in the cities' coal depots.

[2] "Nursery" is the name for the afternoon time after the classes for the students in the 1st to 4th grade at primary school. The school club is the organization of afternoon activities for students in the lower secondary school.

[3] As the number of positively infected people began to rise rapidly, the Ministry of Health announced strict hygiene measures to protect the population. Public and private organizations and institutions had to implement appropriate organizational changes very quickly.

[4] Based on the regulations by the Minister of Education and the Crisis Staff, all types of schools were closed and the full-time teaching at universities and colleges was interrupted (initially until March 29th, 2020; later, according to the regulation from March 24th, 2020, schools remained closed until further notice.).

largest was the lack of technological background of schools (ICT) and students' households.

Basic ICT equipment with internet connection at the required level in Slovakia has changed after 1990, and the level of ICT equipment increased noticeably after 2020, thanks to the implementation of the Infovek project[5]. Unfortunately, Slovakia does not reach the digital competences level of western countries in the educational field – neither in digital equipment and access to the Internet, nor in the level of ICT skills in the majority of the teaching community. The outbreak of the COVID-19 epidemic in the springtime showed that a full equipping of schools with digital technologies (internet connection in each classroom, and a complete PC set with an interactive whiteboard) is not a matter of course[6]. The biggest problem with the smooth transition to online teaching was the insufficient (or outdated) information-technical equipment and satellite coverage of the Internet, especially in the students´ households. The students´ technical conditions showed a wide range of differences, from the problem-free technical equipment for online teaching at home (or at their relatives, acquaintances or classmates), to the total absence of this possibility.

Unfortunately, when analyzing online teaching in Slovakia, it should be noted that there is a group of students, which could not attend online classes due to the absence of ICT equipment and internet connection. These students are from socially disadvantaged environment[7] and they are integrated into standard schools. Many of them must also have a personal assistant. These students are mainly of Roma ethnic group and live in communities. Despite unequal information conditions, teachers have tried to maintain regularity in learning and stabilize the schooling habits in each student, including the disadvantaged ones. In order to do so, they prepared worksheets with tasks, they made copies and once a week – usually on Monday –, they distributed them to the Roma communities, where parents distributed them directly to their children. Subsequently, the teachers collected the filled in worksheets, usually on Friday. Afterwards, they brought new ones, and this is how it worked until the end of the school year. The decline in

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[5] The project *Infovek* helped to equip every primary and secondary school in Slovakia with computers and internet connection within five years. The aim of this digitalization of all schools in Slovakia was to prepare the young generation for life in the 21st century´s information society, so that this generation would be competitive in the emerging global labor market, especially compared to their peers from the European Union countries.

[6] Schools have a computer room; some of them have even more than one – for teaching the basics of computer science.

[7] We talk about the socially disadvantaged environment when the student´s family is in material need, when the family's income is at most at the subsistence minimum. The highest completed education of parents is usually at primary or lower secondary level; often one of the parents did not even graduate lower secondary school; the families do not have standard housing and hygiene conditions; the students do not have a separate place to study, miss their own beds or there is no electrical connection.

schooling habits was evident in online teaching, despite the great efforts of teachers and parents.

Teacher survey 2020

After the end of the first pandemic wave, the Slovak company KPMG Business Institute conducted a survey *How do you perceive the transition to online teaching* in the form of an online questionnaire. The data were collected on April 17th-22nd, 2020. More than 330 teachers, who had registered for a series of webinars *How to teach online* were contacted.

37% of respondents were high school teachers (higher secondary education), 31% were university pedagogues (tertiary education), and 24% were teachers at primary or lower secondary schools.

The results of the survey showed that half of the respondents taught online less than 2 hours a day on average and one third of the teachers were in contact with their students for 3 to 4 hours on average. Slovak teachers mainly used the platform *Microsoft Teams* (38%). The second one was the *Zoom* application free of charge.

Teachers disagreed on the suitability of the online form of teaching. Only 52% of respondents said that they could adequately teach their students online.

The results of the teacher survey 2020
57% expressed that a better technical background would make it easier for them to teach online
48% considered the main challenge to be the interaction with students during online class
45% said that the main advantage was maintaining the contact with students

The results of the survey reflect the reality in the weak technical background of teachers, but they support the idea about positive impact in mutual communication and cooperation.

Music, its meaning, place and scope in formal online education

The idée fixe of this study is to reflect the position of Music in various school types and school levels of compulsory (formal) education in Slovakia during online teaching due to the COVID-19 pandemic.

The following types of schools represent the system of formal education in Slovakia:

a) **Primary and lower secondary schools:**
   1. level; 1st – 4th grade – primary education
   2. level; 5th – 9th grade – lower secondary education
   Subject Music is taught in 1st – 8th grades, 1 hour per week.

b) **Primary art schools** with five artistic departments **–** music**,** fine arts, dance, literary-dramatic and audiovisual

c) **Secondary vocational pedagogical schools** – higher secondary schools for teachers in Kindergarten

d) **Conservatories –** higher secondary art schools.

Online education in selected types of formal education

Primary and lower secondary schools

Based on the document *Content of education in primary school during the emergency interruption of teaching in schools*[8], the education content in primary and lower secondary education was divided into main and complementary[9] subjects. Complementary educational areas include (among others) the subject Music. According to the instructions of the Ministry of Education, the subjects were not divided into separate groups according to their importance, but according to the possibilities of learning in the home environment. The ministerial recommendation brought an instruction to integrate the content of complementary educational areas into the content of the main educational areas and at the same time, not to include this complementary content in the pupils´ indicative daily workload. Activities, which were tied to subjects in the complementary group, were recommended to be performed once a week.

The Ministry of Education has created its own and well-arranged platform www.ucimenadialku.sk with various teaching resources, a summary of instructions, materials, articles and educational content suitable for overcoming this difficult situation.

In the overview, the platform included eight sources for the subject Music: Global education, Music through a game-songs for children and the whole family, Kompasito, Kozmix, Phenomena of the world, Datakabinet, Fred, and Educational articles with educational activities on the portal Art Web Portals[10]. The above-mentioned overview contains electronic educational resources, not primarily intended for the online distance mode of teaching. They contain methodological manuals for teachers, and music appears only marginally added to non-musical activities. The most suitable educational source in the overview is the portal Music through game-songs for children and the whole family[11], which primarily links school and extracurricular music education. The integration of digital technologies and the selection of music material for Music at primary level was designed

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[8] https://www.minedu.sk/data/att/16217.pdf

[9] The **Main educational areas** include *Language and Communication, Mathematics and Information Work, Man and the Society, Man and the Nature*. The **Complementary educational areas** include *Man and the values, Man and the world of work, Arts and culture, Health and movement.*

[10] https://www.ucimenadialku.sk/odporucania/zdroje

[11] http://hudbahrou.pf.unipo.sk

by the music informatics and pedagogue Radovan Šašala[12] in 2017, when this area had not yet received increased attention.

Even though the subject Music had its place in the above-mentioned groups of subjects, in practice it was not taught. The teacher's sovereignty in selecting and integrating the complementary educational areas[13], as well as the amount of content in the main educational content, put Music in a position where it was confronted with the music teacher´s personality: the music teacher as an active musician and as an internally motivated teacher. Another important factor was the parent, who, even with the best of intentions, may not have been willing or able to perform musical activities with his/her child.

The implementation of education in primary and lower secondary schools took place through the platform Microsoft Teams, which enabled video conferencing with all students and teachers at once. Teaching music had a chance to take place in such conditions. The platform Edupage, which is already very widespread in Slovakia, enables sending didactic materials and communication via text messages. Through this platform, it is possible to send ideas for activities in Music to students. Their implementation remained at the students´ and their parents´ discretion.

Primary art school (PAS, Slovak abbreviation is ZUŠ)

PAS is a type of school[14], which provides basic artistic education to students aged 6-15 in five artistic departments: music, fine arts, dance, literary-dramatic and audiovisual under one directorate.

The Music department at PAS, which is the subject of our interest, is characterized by a combination of individual teaching, instrument playing[15], singing and group activities; subjects Music theory, chamber and ensemble playing, playing in an orchestra, chamber and choir singing.

Teaching an instrument playing/solo singing is the main subject. Its time allocation is 70 minutes a week, divided into two days; children attend so-called long classes for 45 minutes and short classes for 25 minutes. The teaching of instrumental classes – as the

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[12] ŠAŠALA, R. 2017. Základy hudobných technológií. Prešov: Prešovská univerzita. Pedagogická fakulta. ISBN 978-80-555-1817-6.

[13] Music struggled along with other subjects, such as ethical/religious education, technical education, art education and especially physical and sport education in educational groups.

[14] Primary art schools fulfill two conceptual lines: They prepare for study at higher secondary schools and at the conservatories, and also for university studies with artistic and especially artistic-pedagogical focus; they train amateur artists who are able to create, interpret and perceive art.

[15] In Music department at PAS, students can study in the following instrumental groups: Keyboard instruments: piano, harpsichord, keyboard; Bowed string instruments: violin (viola), cello, double bass; Plucked string instruments: guitar; Wind instruments: flute, clarinet, (oboe, bassoon), trumpet, trombone, French horn and accordion.

main subject at PAS did not stop during pandemic, and it smoothly transferred to distance (online) format. Students connected with their teacher at regular lesson time and worked on holding the instrument, on specific compositions, correcting mistakes, fingering, creating tone and on both, technical and expressive aspects of the composition. The online connection was simplified by interactive communication between students and teachers. Applications such as Skype, Viber, or WhatsApp Messenger were mostly used during individual forms of teaching. For students who had problems with the Internet, teachers uploaded instructional videos and posted them on *Facebook*, *Youtube* or the school's official website. Students who had insufficient technology and slow Internet connection sent recordings of their own interpretations to their teachers, and teachers gave them feedback (either via messenger, or just by phone or email).

Teaching at PAS took place regularly during the pandemic and some PAS continued to prepare for all concerts and occasional performances planned until the end of the school year[16].

Higher secondary education – Secondary vocational pedagogical schools for teachers in Kindergarten (15-19 years of age)

At the higher secondary school level, distance education took place without reducing the subject content. This was made possible by a more mature mental level of high school students and at the same time, by their more advanced skills in using digital technologies, which have become the main teaching method and tool at all levels. The students were equipped differently concerning their technological devices. At the same time, not all students could deal with this situation very well and thus ignored the messages and tasks given in the distance form, had a negative effect.

The subject Music Education with Methodology[17] took place as a professional subject in full scope with unchanged content and it was taught through several platforms. Multimedia textbooks created in the environment of the Microsoft SWAY platform, conference calls via Microsoft Teams, sending materials via the Edupage platform, multimedia tasks, digital music games, or watching documentary films proved to be effective.

In the subject *Musical Instrument Playing*, teachers used the already mentioned Microsoft Teams. In addition, they created their own video-courses and posted them on the Youtube platform. The teaching of professional music subjects also took place during the distance

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[16] A good teaching practice example at PAS is the program prepared for the public on Mother's Day. https://www.youtube.com/watch?v=nM3i9vXNa30&feature=youtu.be&fbclid=IwAR3lYH43L1_fMMe1YQO_Y7-i657wu4j-SJNGsB9QN-vssqG_kvlPFVOkwn0

[17] *Music education with methodology* covers the whole spectrum of music sciences: e.g. musical instruments theory, acoustics, history of music, folklore, popular music, music theory, jazz, methodology of music education for pre-primary education. During the studies, the total time allocation for this subject is 5 hours per week.

form, although teachers and students realized that the educational process without personal contact between teacher and student lost the necessary spirit and emotions.

The subject Music is not only a set of knowledge, exercices, evaluations, seminars, and documentaries. It also encompasses active music making, improvisation, singing and other musical activities. It was the active nature of music education that contradicted the static processes presented by digital technologies. However, the period of distance learning has shown the necessity to find a way to apply digital technologies to the whole spectrum of school subjects. In art-educational subjects, the importance of the teacher's personality has been emphasized, since the person gives the meaning to art, and no digital technologies can replace the teacher's human approach; in case of music-education subjects also underline the artist´s approach (interpreter, singer, conductor).

Conservatory – higher secondary art school

Conservatory in Slovakia (and in Czech Republic) is a higher high school that includes the secondary vocational school (grades 1-4) completed by graduation (15-19 year old students) and postgraduate studies (grades 5-6) completed by a graduation concert, teaching exams and defending the thesis (20-21 year olds). The profile of the graduate is directed to professional art orchestras or to pedagogical work at PAS. Similarly to PAS, the most important one is the main subject – playing musical instrument / solo singing / conducting, to which the highest attention was paid.

As the teaching of learning how to play an instrument or to sing requires permanent direct teacher-student interaction, teachers had to find the most appropriate online teaching platform that was available for both sides. Teachers communicated with students mainly via email, *EduPage*, by telephone and by other visual contact options (*Viber*, *WhatsApp*, *Messenger*). Some used *Zoom* to teach theoretical subjects.

Teachers of practical subjects regularly assigned tasks to students via the EduPage website. The mastery in interpretation of new repertoire teachers controlled through two basic alternatives:

- recordings of students' work evaluated by teachers through online communication (by phone, by email)
- direct contact with the student through the screen; the teacher and the student were not in the same place

In an effort to enable students to study the new repertory, students received scanned notes or links to download free music scores. Teachers also sent their own demonstrations, composition recordings, so that students could see the correct hand position, fingering etc. The accompanists recorded materials to students studying melodic instruments and solo singing for enabling them to study the repertoire.

The evaluation of the students´ work took place according to the special instructions of the Ministry of Education, Science, Research and Sport of the Slovak Republic, both in the final grades, in school leaving and graduation exams, as well as in other grades.

Positive aspects of online education

- maintaining continuity in education; the quality of online teaching increased gradually,
- increasing the digital skills of the teaching community,
- positive attitude of teachers and students to online teaching
- mapping the ICT equipment of students' households

Negative aspects of online education

- insufficient ICT equipment and slow internet connection (up to the absence of internet signal), especially in primary school pupils,
- different (insufficient) level of teachers' digital competences,
- absence of educational digital programs,
- variable students´ activity in completing online tasks (from non-fulfilment to excellence).

Summary

Although the pandemic seized schools unprepared, it can be stated that the continuity of education through distance forms was maintained at all types of schools, thanks to the enthusiasm and efforts of those who were involved. The initial teachers´ hesitation to use the advanced functions in communication platforms was overcome in a few days after they entered the world of virtual education.

In spite of online education not having the potential to fully replace the contact teaching process (especially in music education), it has clearly provided many opportunities for reflection and sufficient impulses to improve education after returning to standard conditions. At the same time, new experiences with virtual education were gained across the board. Based on the persistence of the coronavirus infection, we may also need these experiences in the autumn 2020.

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Epilogue

Mária Strenáčiková, Jr

Dear readers, you have the opportunity to read one of the last contributions of Prof. Irena Medňanská to the music-educational world, since her sudden departure abruptly interrupted her rich activities. Professor I. Medňanská dedicated her whole life to music and music education. She held leading positions in schools, in artistic institutions and ensembles, and in several associations. She spread her love for music everywhere and emphasized the need to educate teachers ... Her rich publishing activities underline her expertise, enthusiasm and efforts to promote music pedagogy in Slovakia. She has received many awards for her work, both in Slovakia and abroad.

As her former student at the University in Presov, I dare say that she has influenced many lives during her career. She inspired them not only with her high expertise, but especially with her passion for excellence, and her enthusiasm and fantastic energy. She helped everyone she could; she was open to challenges, and cared about maintaining the high level of Slovak music education. She educated many music teachers, many of whom also established themselves in the field of music pedagogy, and continue to educate future generations of children, potential music teachers. Her thoughts and ideas thus spread and her legacy influences and will influence many generations of Slovak music teachers.

The experience of music teachers from Portugal and Germany during the Covid-19 pandemic: hard times and creative solutions

Manuela Encarnação & Maria Helena Vieira (Portugal), Georg Brunner (Germany)

Abstract

The effects of the Corona pandemic that started in March 2020, in music classes all over the world most certainly present similarities and also national or local differences. Several months after the outbreak of the virus, music teachers started realizing that the same phenomenon that was isolating them and separating them from students and colleagues was also bringing them closer together in different ways, in digital ways, and was also generating new contacts across borders and across languages. Following the suggestion of the network of Music Teacher Associations in Europe three researchers from Portugal and Germany decided to take a closer look at the changes brought about by the pandemic in music classes in both countries (Portugal: schools; Germany: universities). The goal was not so much to compare changes in similar groups and classes, but to explore the deeper meaning of those changes and the reactions of the Portuguese and German teachers by putting them into perspective: an international perspective.

Introduction

The two studies presented here focus on music educators during the corona pandemic in summer 2020. Our explorative goal (Stebbins, 2001) was to report the experiences of music teachers during the pandemics in different countries (Portugal and Germany), in different levels of studies (Basic/Secondary and University levels), and in different types of schools (general and specialized). The Portuguese study focused on a group music subject offered at the Basic and Secondary levels in specialized schools as "Formação Musical" and at the Basic level in general schools as "Educação Musical"; the German study focused on music teaching at the university level, with emphasis on special professional practice areas such as individual vocal/instrumental tuition, practical piano lessons, ensemble conducting, music making in class, ensembles, and didactic events with practical components.

In both studies the aim was to find out what kind of management systems and video platforms were used, how synchronous and asynchronous teaching was designed, what concrete media were used in teaching, how communication and feedback took place and, above all, what educators see as positive effects of online teaching and what they would like to integrate into their teaching in a post-pandemic period. The results show similar approaches by the teachers in both countries, but differences in the levels of studies, types of schools and school subjects, and also some specific solutions for certain subjects.

Above all, the results show that all educators faced these hard times creatively and with a positive outlook.

The school subjects of "Formação Musical" in specialized music schools and of "Educação Musical" in general schools in times of Covid-19 pandemic. Sharing results of a study of the Portuguese Association of Music Education

After the Portuguese Government approved, on March 13th 2020, a group of exceptional and temporary measures concerning the epidemiological situation caused by COVID-19 through Law-Decree nr. 10-A/2020, the Portuguese Association of Music Education created a website to support teachers (APEM, n/d[18]) and it also decided to gather more specific information from music teachers about the functioning of some school subjects of the General Education system (GE) and of the Specialized Education system (SE) during the pandemic period.

The school subjects chosen for the initial study were collective or group school subjects (not individual teaching): the "Educação Musical" school subject of the 5th and 6th grades of GE and the "Formação Musical" school subject of all grades of SE. The choice of these school subjects was made in consideration of the facts that they were both collective subjects and that they share some contents and pedagogical procedures, despite belonging to different educational subsystems. Two focus group meetings were organized online, one gathering "Educação Musical" music teachers of the GE subsystem and the other gathering "Formação Musical" music teachers of the SE subsystem.

The main goal was to obtain a descriptive panorama of what happened in those school subjects in terms of the teaching and learning processes during the pandemic period and also to gather perspectives for music education in schools after the pandemic.

Methodology

The selection of teachers for the organization of these two Focus Groups was done according to a few convenience sampling criteria (Etikan, Musa & Alkassim, 2016): they had to belong to the public system of education, either to the GE subsystem or to the SE subsystem (because of the similarity in their organization, functioning and funding principles); they had to teach the selected collective school subject (and therefore be able to provide the specific information desired); they had to fulfill the "1 teacher/1 school ratio" (all the contacted schools and all the main geographic areas of the country – North, Center, South, Azores and Madeira – could be represented in the study).

All SE and GE selected teachers were sent an e-mail before the online meeting with the description of the organization and timings of the Focus Group, and with an Interview

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[18]   https://apem.org.pt/apoio-ao-professor/recursos-web/

Script indicating the three main areas of research focus. The group interviews would last for 2 hours maximum and the interview script was the same for both Focus Groups. It consisted of the following parts:

Part I – Adaptation to distance learning
   a) Adaptation to distance learning: processes, decisions and summing-up
   b) Digital communication tools: platforms and apps
   c) Synchronous and asynchronous communication management
   d) Percentage of students with regular attendance of online "Formação Musical" (SE) and "Educação Musical" (EG) school subjects

Part II – Pedagogical practices
   a) Pedagogical practices and strategies
   b) Evaluation practices
   c) Changes during the pandemic period in the program domains of experimentation and creation (Composition), interpretation and communication (Interpretation) and appropriation and reflection (Audition)

Part III – Positive outcomes
   a) Positive outcomes of the pedagogical experiences during the pandemic period
   b) Selection of what will be adopted next school year: digital tools, pedagogical practices, evaluation procedures, a.s.o.

This initiative was well accepted by all participants as it represented an opportunity to share information and reflect collectively upon the effects of the pandemic. Some teachers underlined that they seldom have the possibility to get together, even within the same school, and professional isolation was mentioned as a problem that characterizes the profession of a teacher and the history of these school subjects. Therefore, the meetings, which took place on the 6th and the 13th of July through the APEM *Zoom* platform, began in a tone of motivation and eagerness.

There were 12 "Formação Musical" SE teacher participants (one of them was an instrumental teacher in representation of the "Formação Musical" teacher) and they represented 12 specialized music schools: Braga, Porto, Aveiro, Coimbra, Lisboa, Loulé, Funchal and Ponta Delgada Conservatories; the Instituto Gregoriano, and the School Groups Luís António Verney, Vialonga and Bemposta. Only two of the country's public specialized schools didn't send a "Formação Musical" teacher representative (Horta and Angra do Heroísmo Conservatories, both in the Azores Islands).

In representation of the GE subsystem schools there were 15 "Educação Musical" teachers of 13 different districts and archipelagos: Bragança, Viana do Castelo, Porto, Abrantes, Odivelas, Amadora, Sintra, Almada, Mértola, Beja, Portimão, Funchal e Ponta Delgada. This selection covered the desired regions of North, Center, South, Madeira and Azores.

This article focuses on the results of Part III (Positive Outcomes) of the Focus Group Interviews that took place both with the Specialized Schools music teachers and the General Schools music teachers. The interpretation of these results aims to contribute to the broader European perspectives on music education after the pandemic.

Focus group of teachers in specialized music education: Results, positive outcomes and future perspectives

The exceptional situation of the pandemic created opposite feelings in the teachers of specialized schools. On the one hand, the weaknesses of the school system and of social and family structures became more visible; on the other hand, teachers had a new opportunity to look at the students from a different angle. This section describes the opinions of these music teachers about the positive things they believe will remain after this pandemic experience in the next school years:

a) *Educational system and organization*: to keep using the institutional e-mail address created for all students during the pandemic period; to promote online school meetings for teachers in order to reduce the distance and isolation among them; to create resource centers for the students; to fight for a National Curricular Program for the "Formação Musical" school subject

b) *Technology*: to develop more technological skills in order to promote students' autonomy; to gain more confidence in the use of technologies; to develop students' technological skills, so that they might benefit from the diversity of digital tools available

c) *Communication*: to review the offer of the types of classes and lessons: face-to-face, online or mixed models; to consider reducing face-to-face time and increasing the use of mixed models in order to alleviate the students' schedule for other autonomous work; to use *Google Classroom* for student work management and better availability of pedagogical resources for each class; to enforce compulsory use of an open camera during synchronous online classes for better knowledge and recognition of students; to promote the sharing of information and ideas; to do more networking and to use the musical part of the website of the *Associação Portuguesa de Educação Musical* more often; to promote other long distance communication channels

d) *Pedagogy*: to increase the students supervised individual musical work; to use more technological tools for work on aural skills, such as Teoria.com and Ear Training; To reflect upon the values involved in education, such as cooperation and sharing of materials and resources; to reconsider and reorganize evaluation criteria; to pay more attention to formative assessment in comparison to summative assessment

Focus group of teachers of general music schools: Results, positive outcomes and future perspectives

This section describes the generalist music teachers' opinions about the positive things they believe will remain after this pandemic experience in the next school year. The aspects mentioned by the teachers that they are keeping in mind for pedagogical use next year are the following:

a) *Educational system and organization*: to keep using the institutional e-mail addresses of students and teachers created during the pandemic period; to reduce inequalities in the access to computer equipment and digital tools; to gather a variety of efforts to improve schools' digital connectivity (government, town halls, businesses, firms); to always have the goal of maximizing school meetings time by promoting more online meetings; to regularly evaluate and reflect upon the music section of the national TV program *#EstudoEmCasa*

b) *Technology*: to explore online resources for music creation, interpretation and critique; to keep using and promoting the use of online resources for teaching and learning; to ensure that all students know how to use the main digital tools and platforms recommended by the school from the beginning of the school year; to plan to attend regular teacher training short courses on the theme of the use of educational technologies for music teaching and learning and for music performance and creation projects

c) *Communication*: to keep using digital tools and platforms such as *Google Classroom* that might allow for these new forms of teaching, both in face-to-face and in remote situations, or in mixed models; to privilege mixed modes of teaching and learning (face-to-face and online); to promote asynchronous activities as a way to develop students individual work; to support the rhythm and progress of classroom activities and goals; to promote asynchronous activities as a way to involve shy students

d) *Pedagogy*: to see the role of the teacher more as a facilitator and supervisor of the learning process; to consider the digital tools provided by the schools (even if outdated) when creating pedagogical materials and activities; to plan more organized asynchronous classes, taking into consideration students with different learning rhythms and making room and time for clearing doubts, giving feedback and also for assessment of contents and competences; to reinforce project work; to foster cooperation among students through specific work projects; to create a list of web resources; to reconsider assessment models in accordance to teaching and learning strategies; to promote video recording of solo performances and of student compositions in order to promote sharing and class discussions about them; to place formative assessment at the center of the teaching and learning process; to consider video recording as a means of assessment of student learning; to create pedagogical strategies that might allow for a more frequent use of the mobile phone as a learning tool; to develop evaluation and reflection habits about the teaching and learning

process among teaching professionals; to value *gamificaton* as a motivational strategy in the learning process; to consider and to experiment with the possibilities of the *flipped classroom* approach: anticipated posting of video classes followed by synchronous classes (in which music performance, oriented aural exercises and group discussions might then occur)

Some conclusions

The adaptation of the specialized music teachers of "Formação Musical" and the generalist music teachers of "Educação Musical" to remote teaching and to the sudden change of their pedagogical practices was not very different, as the analysis of the focus group interviews transcription showed. The perspectives of the positive outcomes that might remain in the future in a post pandemic period are also generally similar. Convergent ideas predominate.

One of the most important findings is that all teachers consider that it will be very important to keep valuing asynchronous activities mediated by technology and to promote student autonomy in work and study. Another important finding is that teachers underlined the importance of reflecting upon the professional practice and of developing more cooperative work.

All participants mentioned that such a sudden change of their pedagogical practices and routines caused profound reflection and evaluation of their values and goals as educators and generated a state of permanent uneasiness at different levels, a state of unusual awareness conducive to more conscious decisions.

Most teachers consider that a change into a mixed model of face-to-face and online activities will be very plausible, if not desirable, in the future. However, they underline the absolute need for face-to-face teaching and learning processes. Considering classroom face-to-face interaction as fundamental for the experience of the learning process itself, teachers defend that a mixed model would be a suitable strategy to enrich synchronous face-to-face activities in the classroom, by actually promoting more student involvement and more adequate student differentiation in pedagogical supervision by the teachers.

"Music is communication and sharing. No matter how much you try to find digital alternatives nothing can replace classroom face-to-face interaction completely, what you live there and what you feel there" (PEG 10)[19] one of the teachers underlined. This means that the face-to-face musical and learning experience can be enriched, and even become more democratic, through the use of complementing asynchronous musical activities, adjusted to the characteristics of each student, and allowing even for the revelation of

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[19] Original transcription translated by the authors: "Música é comunicação e partilha. Por mais que se tentem encontrar alternativas digitais nada substitui completamente o contexto presencial de uma sala de aula, o que lá se vive e o que se sente".

surprises and student diversity and exceptionalities. This idea was reinforced by teachers in both focus groups, who also made a point to remind us that without technologies and without this new time management and online procedures some (new) realities would never have been known.

The circumstances that forced teachers to adjust to a new way of teaching ended up allowing also for the recognition of the need for improvement in school contexts and pedagogical practices. In fact, they transformed the externally provoked digitalization of schools and pedagogical processes (which was already slowly taking place) into an endogenous phenomenon searched by teachers and students themselves. Many digital tools and strategies that were already available in schools finally started being used. The experience made it clear for teachers that there is a need for more teacher training and for permanently setting lifelong learning goals, particularly with reference to the use of digital technologies.

It is obvious that only a great financial investment in schools, in the educational system, and in all its dimensions will make these ideals come true. It is also obvious that only well-defined educational policies and strategies will make it possible to promote and stabilize a real change in the pedagogical practices in the whole of the educational system of music education, both in the generalist and the specialized branches. Otherwise, all these "positive outcomes" identified by the music teachers might be forgotten.

Finally, it is interesting to note a few differences between the two groups of participating teachers concerning their teaching strategies: while the specialized music teachers seem to underline the importance of musical training (aural skills, reading and writing skills, theory) the generalist music teachers seem to pay more attention to interpretation and experimentation. This might actually reflect traditional perspectives already occurring in face-to-face classroom activities. One of the teachers mentioned that he felt "a musical evolution in the knowledge of music contents not usually found in the traditional classroom, a knowledge that resulted from the use of gamification strategies and other strategies implemented and generated more student involvement"[20] (PEG6). Another teacher pointed out the opportunities of the online ambience and underlined that "the dimension of experimentation and creation might be one of the most interesting areas to explore in a remote learning context"[21] (PEG10).

Another difference between teachers from specialized music schools and teachers from general schools is that the specialized music teachers became concerned with unifying a national curricular program, while the generalist teachers (who already follow a national

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[20] Original transcription translated by the authors: "uma evolução musical a nível de conhecimentos musicais como não costumo ter em sala, pois através da *gamificação* e de toda a estratégia que montei à volta, (os alunos) foram muito mais empenhados".

[21] Original transcription translated by the authors: a área da experimentação e da criação pode ser uma das áreas mais interessantes a explorar num contexto não presencial".

curricular program for many years) seem more concerned with social justice and with reducing inequalities in computer and technology access for all students. Generalist teachers also seem more eager to discover new and diverse pedagogical approaches mediated by technology.

In a word, the specialized music teachers of the "Formação Musical" school subject and the generalist music teachers of the "Educação Musical" school subject adapted quite well to the new conditions brought about by the Covid-19 pandemic, evolving from a more intuitive adaptation to a more conscious perspective of the structural, political and philosophical implications of the change. Teachers are also aware of the paradigm shift that is occurring in the teacher-student relationship which is characterized by the need to promote more moments of asynchronous and autonomous student work, more individualized supervision of that work, and differentiated attention to each student. Instead of inducing massification, digital technologies are opening communication doors to the understanding of each student as an individual.

The experience of music teachers at higher education institutions (HEI) in Germany in times of the Covid-19 pandemic. Sharing results of an online survey

A research team from Germany (Georg Brunner, University of Education Freiburg; Gabriele Schellberg, University of Passau; Ilona Weyrauch, University of Koblenz-Landau) conducted a survey with university teachers who teach future music teachers for various school types about their experiences with online teaching during the semester following the first outbreak of the virus (March to July 2020)[22]. The survey was conducted via an online questionnaire[23].

Sample

A total of 127 people took part in the survey. Since lessons with practical musical activities play a central role especially in the area of music teacher training, the results concerning these broad activities are presented below. They refer to group 1 and encompass expert practitioners: individual vocal/instrumental tuition, school-practical piano, ensemble conducting, music making in class, ensembles. However, it is interesting to take a

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[22] As an example for a university in Germany during the Corona summer semester, see Brunner, 2021. For further research, see Krämer & Hammerich, 2020; University Göttingen 2020.

[23] The questionnaire was composed of items from the questionnaire of the eLCC lecturer survey 2018 (version 3, as of 19.11.2019) of the University of Osnabrück as well as newly formulated items that resulted from results of discussion forums on online teaching in the summer semester 2020 at the participating universities.
(https://www.researchgate.net/publication/329075054_Ergebnisse_der_Lehrendenbefragung_2018_-_Digitale_Medien_in_der_Lehre_Hochschule_Osnabruck[06.01.2021]). The questionnaire was sent out via distribution lists of various university organisations. The procedure is based on convenience sampling criteria (Etikan, Musa & Alkassim, 2016).

comparative look at group 2 (expert academics) which covers the areas of Music Education (including music history, music theory/aural training) and Teaching Methodology and therefore has a stronger focus on the teaching of theoretical-cognitive learning content. This creates a nuanced picture of the effects of distance learning.

The two groups of the sample are almost equal in their size: group 1 (G1; expert practitioners, n = 63) and group 2 (G2; expert academics, n = 64). Of these, 47% (n = 64) were female. Further details about the sample can be found in the tables[24]. There are noticeable differences between the two groups (Tab. 1) with regards to the distribution of the positions of the teachers. While in group 2 the individual status groups (adjunct teaching staff/others are seen as one status group) are more or less equally represented, adjunct teaching staff clearly predominates in group 1. This is structurally due to the fact that at HEI, music practice is often taught by adjunct teaching staff. This is also reflected in the type of courses taught (Tab. 2), Since in G1 the focus is on music practice, over 2/3 of the courses were applied exercises. Students from the following school types were taught (Tab. 4).

Use of learning management systems and video platforms – synchronous teaching

Unlike schools, HEI have their own intranet with systems for campus management and learning platforms that make it possible to provide digital learning materials. In addition, all teaching staff as well as students are equipped with digital devices. Basically, a distinction can be made between synchronous teaching (e.g. personal attendance in class; during the pandemic via video conference systems) and asynchronous teaching (learning materials including assignments are made available to learners on learning platforms in the intranet for a certain period of time). For synchronous teaching - especially for larger seminar groups - the HEI were still poorly equipped with digital video conferencing tools until before Covid-19. The individual HEI sought to obtain suitable solutions very quickly - after examining data protection issues.

Table 5 shows whether and which learning platforms (intranet) were used. It also clearly shows that G1 made significantly less use of the provision of materials for asynchronous teaching via intranet than G2 (G 1: 34.9%; G 2: 92.2%). The most used platforms were Moodle and ILIAS (s. Tab. 5). Both groups made intensive use of video conferencing systems (G 1: 87,3%, G 2: 92,2%) – especially *Zoom* (G1: 63,5%, G2: 76,6%) (s. Tab. 6).

This is also reflected in the proportion of synchronous teaching. Here, despite the high use of learning platforms (intranet) and thus asynchronous shares, there can be seen a particular high proportion of synchronous teaching via video conferencing systems in G2. In other words, asynchronous teaching was frequently supplemented by synchronous teaching (s. Tab. 7).

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[24] The tables are available in the appendix following up on this article.

Feedback

In times of distance learning, communication with students including feedback plays an important role. (Here, the items were taken into account which had a mean value of more than 2.5 on a scale of 1 to 5 (does not apply at all - fully applies)). In both groups, feedback on assignments is very important. This took place mainly via e-mail or in the video conferences (s. Tab.8).

Teaching design in times of Corona

What was the design of the teaching (in the following, only statements are included which in the mean value were above the value of 2.5 in at least one of the two groups; since not all questions were answered by the participants, "n" is given in each case)? Digital learning units were created in both groups. The use of assignments, tests or quizzes, screen-sharing during *Zoom* sessions played an important role in both groups.

By comparison, G2 provided more PowerPoint slides in their teaching, as well as audio recordings or ready-made videos, which is most likely owed to the specific content of their teaching. G2 also made more use of breakout rooms (e.g. for group work) during video conferencing. On the other hand, singing/playing music to students during the video conference, as well as the submission of student-produced audio recordings, played a more important role in G1 than in G2. It is also interesting to note that - despite the general scepticism about videoconferencing in the context of collaborative singing/music making (see Tab. 9), - a few (G1 n=22, G2 n=13) did indicate that they had made music via videoconferencing.

How was teaching assessed?

Analogue teaching is unanimously rated significantly better than digital teaching. Nevertheless, participants also say that students engage at a deeper level with the learning material. G2 saw the assessment of the performance in the exams as less problematic than G1 (s. Tab. 10).

Advantages of online teaching

The responses to the open questions in which the advantages of online teaching were described by both groups are very important with regard to perspectives for Music Education after Corona. Different generic categories can be distinguished. These may serve as indicators for what could remain after the pandemic.

Flexibilization/Organization

- free time management for students (self-regulated/individual learning)
- flexibilization of class hours

- independence of location (no journeys, savings on travel costs, also internationally)
- interactive working across time and space
- accessibility (disabled or sick students can participate),
- higher and more timely student attendance

New ways of learning

- more in-depth acquisition of content by creating student videos and audios
- intensification of analytical work on teaching sequences (with analytical short films)[25]
- in the area of new media (apps/programs) optimised work through screen sharing in video conferences development of a range of skills (e.g. reading scores, percussion technique, interpretive questions, practicing with tuning forks in breakout rooms)
- Wide accessibility and visualisation of work results, also afterwards (e.g. artistic-practical activities, text work, essays, chats, files, recordings)
- Optimization of work in small groups (breakout rooms)
- Reduced hierarchies in discussions via video conferences
- Possibility of self-monitoring (self-tests, self-directed learning)

Increasing effectiveness

- More individual and effective feedback (made possible via submitted videos or audio recordings, thus changing practice strategies; for international and technical aspects)
- Better learning outcomes through digital asynchronous provision of learning content and self-reflective tasks;
- Forcing teachers and students to structure/focus more (no distraction by "side conversations")
- Intensification of learning success through targeted (written) tasks and feedback

Improved communication

- Better accessibility including in difficult situations (also outside of fixed teaching hours)
- More focused conversations
- Providing opportunities for peer feedback
- More individualized relationship management

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[25] An analytical short film (ASF) is understood as a short film of about 2–3 min length together with an explanatory text (Complementary Information) that shows a specific perspective on videotaped classroom praxis

(New) learning materials

- Video recordings, audio and film footage in addition to PowerPoint presentations
- new types of assignments (e.g. creating an audio or video file, self-tests),
- faster and better visualization of results
- less paperwork
- quicker access to documents such as texts, etc.

Meta level

This point also includes critical comments: The following is brought forward, especially by G1:

- G1: online teaching as an "emergency program", ("acceptable emergency solution", "better than no teaching at all")

but also - especially from G 2:

- class preparations are more precise
- sustainability
- transparency, participation for all, changeability
- use of experts from abroad.

Final evaluation and outlook

Despite the innovative approaches born of necessity, the verdict on online teaching in the field of expert practitioners (G1) is rather negative. In the area of one-to-one teaching, the limitations (no interaction possible due to time latency, no fast and direct communication via video as in face-to-face teaching, no perception of the whole person via video possible, audio quality even at best rather moderate, etc.) are considerably higher than the benefits. For musicological, didactic or music-theoretical lectures (expert academics), digital teaching is certainly seen as having potential to be further developed for the post-Corona period.

This is reflected in the answers to the question "What could remain after "Corona"?": On the one hand, considerably more items came above the threshold value of M=2.5 (s. Tab. 11) when using comparable questions to those used in "Teaching during the Corona pandemic". This could be related to the fact - indications of this can be found in the free responses - that one has been inspired by the questions for future teaching. On the other hand, however, there is a clear difference between the two groups.

Although many people want to return to their old teaching concepts after Corona, the sudden switch to distance learning has opened up new perspectives. In face-to-face teaching, an attempt will be made to integrate some elements of digital teaching. In particular, the communication channels with students via digital media will be retained,

and digital forms will be used for feedback. In the same way, learning platforms have worked well and will be retained. Video conferencing tools also seem to have met with a good response and their use may be continued, including screen sharing options. Digital learning units and the provision of self-created and ready-made audio files are to be made more permanent. On the other hand, students are also expected to submit self-produced videos and audio files.

Teachers in G2 will continue to provide PowerPoint slides with their own audio narration, as well as learning videos. These teachers will also put more emphasis on tasks, tests or quizzes (s. Tab. 11).

Conclusion

Quotations from the free responses should serve as a summary for the perspectives after Corona:

"A good and responsible balance between digital and in-person teaching would not harm at all." And with regards to professional practice: "In principle, online teaching is more of an 'emergency solution' for me as long as there are no better programs available". "My students, in their isolation, were very happy that I made contact and we were able to work together on a weekly basis. They had time to practice, to enjoy the discussion and to make music". And last but not least: "Stay open, enthusiastic and willing to learn!"

What can we learn from the Portuguese and the German studies about the impacts of the Coronavirus outbreak in music teaching and learning processes?

Despite the many differences between the studies – and maybe because of them – some final thoughts emerge. The Portuguese study focused on pre-university levels of music education (Basic and Secondary) and the German study focused on the university level. The Portuguese study selected two collective school subjects, aiming at a general comparison between what was happening in the specialized and the generalist subsystems while the German study evaluated corona virus impacts in a broader spectrum of university school subjects. The Portuguese study took a qualitative approach based on the analysis of the results of two focus group interviews and the German study took a quantitative approach based on the application of an online questionnaire.

Some conclusions, however, seem convergent: the pandemic period brought about a need to look at asynchronous work as a good complement to synchronous classes and to look at online classes as a good complement to face-to-face classes. These conclusions take into consideration individual advantages for the students and the learning process, but also collective and sustainability advantages, and they seem to point to permanent curricular changes that might occur in the future in both countries educational systems, if the necessary financial investments can be made by the governments.

The fact that the Portuguese study seems to convey a more optimistic approach to the technologically mediated teaching and learning process in its multiple possibilities than the German study may be explained possibly by two factors: the fact that the Portuguese study focused on two collective school subjects in which music performance is not the main goal, and the fact that at the Basic and Secondary levels in Portugal, many of the technological changes were in fact novelties for which there might not have been enough time yet for a more pondered appreciation. Nevertheless, it is important to underline that the Portuguese teachers in fact pointed out that face-to-face teaching can never be replaced: "No matter how much you try to find digital alternatives nothing can replace classroom face-to-face interaction completely, what you live there and what you feel there" (PEG 10; cf the conclusions of the Portuguese study and footnote nr. 2).

The extraordinary synchronicity and sound quality demands of music making (recalled by some of the participants of the German study) suggest that school subjects involving music instrument and voice performance as main goals might still need further technological advances in order to really benefit, in objective musical terms, from online classes and lessons. However, from the standpoint of subjective interpersonal connection between teacher and students, from the standpoint of differentiated pedagogical practices, and from the standpoint of student autonomous individual work and motivation, asynchronous online tasks and work and synchronous online debates might be good ways through which technology might, paradoxically, make us more human and connected, and more focused on our goals. Indeed, isn't it a fact that Portuguese and German researchers were brought closer together, as the result of the pandemic, precisely through synchronous and asynchronous work, in order to reflect upon common values and goals of music education in our lives?

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Appendix: The experience of music teachers from Portugal and Germany during the Covid-19 pandemic: hard times and creative solutions

Data German Study (Georg Brunner)

Tab. 1: Status of Academic Staff (G1 = Group 1, expert practitioners   ; G2 = Group 2, expert academics)

Status of Academic Staff	Frequency		Percent	
	G1	G2	G1	G2
Professor	5	22	7,9	34,4
Research Associate	12	22	19,0	34,4
Adjunct Teaching Staff	43	10	68,3	15,6
Others	3	10	4,8	15,6

Tab. 2: Types of Teaching

Type of Teaching	Frequency		Percent	
	G1	G2	G1	G2
Lecture	2	4	3,2	6,3
Seminar	13	56	20,6	87,5
Exercise Class / Tutorial	44	7	69,8	10,9

Tab. 3: Distribution to individual Courses

G1

	Frequency	Percent
Individual lessons – Instrument	25	39,7
Individual lessons – singing	19	30,2
Practical instrument for schools	8	12,7
Conducting an ensemble	5	7,9
Facilitating musicmaking in the classroom	3	4,8
Band practice	2	3,2
Choir	1	1,6

G2

	Frequency	Percent
Research in Music Education/Music History	15	23,4
Teaching methodology	42	65,6
Music Theory	4	6,3
Aural Training	2	3,1
New Media	1	1,6

Tab. 4: School Types to which the Teacher Training Program refers

	Frequency	Percent
Primary School (6-12 years)	84	62,7
Secondary School 1 (10-16 years)	89	66,4
Secondary School 2 (17-19 years)	49	36,6
Special Education Schools	24	17,9
Other	19	14,2

Tab. 5: Learning Platforms used

	Frequency		Percent	
	G1	G2	G1	G2
no	50	5	65,1	7,8
yes	13	59	34,9	92,2
Moodle	6	29	9,5	45,3
MS Teams	2	2	3,2	3,1
OLAT	1	1	1,6	1,6
ILIAS	3	16	4,8	25,0
Campusmanagement	6	12	9,5	18,8
Other	5	7	7,9	10,9

Tab. 6: Video Conferencing Systems used

	Frequency		Percent	
	G1	G2	G1	G2
no	8	5	12,7	7,8
yes	55	59	87,3	92,2
Zoom	40	49	63,5	76,6
DFN Conf	1	2	1,6	3,1
BigBlueButton	2	4	3,2	6,3
Skype	23	4	36,5	6,3
MS Teams	2	4	3,2	6,3
Jitsi	1	3	1,6	4,7
Cisco Webex	5	7	7,9	10,9
Other	7	1	11,1	1,6

Tab. 7: Share of Synchronous Teaching

Synchronous Teaching	Frequency		Percent	
	G1	G2	G1	G2
0%	5	4	7,9	6,3
up to 20%	8	2	12,7	3,1
up to 40%	4	7	6,3	10,9
up to 60%	12	5	19,0	7,8
up to 80%	7	14	11,1	21,9
More than 80%	27	31	42,9	48,4

Tab. 8: Use of Feedback (Indication of mean values (M); scale: 1 = does not apply at all, 5 = fully applies; n = size of the sample.

	G1			G2		
	n	M	SD	n	M	SD
The students always received feedback on their submitted assignments.	47	4,36	1,358	62	4,42	1,08
I sent feedback by e-mail.	46	3,11	1,524	54	2,85	1,309
I met with students via video conference to give them feedback.	49	3,78	1,545	61	3,48	1,273

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Tab. 9: Teaching during Corona Times (Indication of mean values (M); scale: 1 = never, 5 = always; n = sample size.)

	G1			G2		
	n	M	SD	n	M	SD
I created digital course units for students.	50	2,52	1,632	61	3,57	1,396
I provided students with PowerPoint slides.	44	1,66	1,293	61	3,61	1,269
I included an explanation of the slides via voice-over ...	32	1,75	1,503	47	3,66	1,632
... and I was also visible as the narrator.	41	2,9	1,998	56	3,87	1,696
I used videos that I had not created myself.	41	1,59	0,974	59	2,51	1,251
I provided students with audio files that I had produced myself.	47	2,38	1,526	61	2,1	1,35
I used ready-made audio recordings.	45	2,2	1,375	59	2,93	1,413
I gave the students assignments, tests or quizzes.	45	3,29	1,753	62	3,74	0,991
I used video conferencing for the lecture.	50	3,82	1,561	62	4,32	1,083
I used screen-sharing to visualize content.	48	3,15	1,774	63	4,3	1,057
I provided students with breakout rooms (digital group rooms).	43	1,63	1,291	61	3,34	1,413
I made music together with students via video conference.	22	4,5	0,802	13	3,85	0,689
I sang/played music to students via video conference.	54	4,02	1,421	61	2,16	1,331
Students submitted self-produced videos.	49	2,47	1,515	60	2,03	1,164
Students submitted self-produced audio files.	52	2,62	1,549	62	1,98	1,194

Tab. 10: Evaluation of Online Teaching (Indication of mean values (M); scale: 1 = do not agree at all, 5 = agree completely; n = sample size.)

	G1			G2		
	n	M	SD	n	M	SD
Analogue teaching is clearly better than digital teaching.	61	4,18	1,025	63	3,57	0,946
I have the impression that students work with the learning material more intensively in online teaching.	58	2,53	1,047	64	3,19	0,957
Students' examination results are lower with digital teaching.	60	2,93	0,918	60	2,32	0,813

Tab. 11: Teaching after Corona (Indication of mean values (M); scale: 1 = not at all likely , 5 = very likely; n = sample size.)

	G1			G2		
	n	M	SD	n	M	SD
After Corona, I will return to my accustomed concept of in-person teaching.	63	4,25	1,031	63	3,13	1,085
I will try to integrate some elements of digital teaching into classroom teaching.	60	3,07	1,219	63	4,41	0,816
I will add some in-class units in my course preparation for the summer semester.	53	2,72	1,364	63	3,6	1,185
I will continue using digitalchannels to get in touch with students.	58	3,53	1,188	63	4,3	0,733
I will provide students with feedback in a digital format.	57	2,54	1,364	62	3,58	1,017
I will mix in-person units and asynchronous digital learning phases.	57	2,47	1,311	63	3,84	1,05
I will use a learning platform (such as *ILIAS*, *Moodle*, *Blackboard*, *MS Teams* etc.) and …	57	2,56	1,547	63	4,35	1,034
… continue to work with video conference tools (such as *Zoom*, *BigBlueButton*, *MS Teams* etc.).	58	2,74	1,319	62	3,84	1,19
I will provide digital learning units for students.	57	2,61	1,32	63	3,75	1,177
I will provide students with PowerPoint slides, …	53	1,92	1,385	63	4,08	1,348
… to which I will add my explanations via voice-over.	51	1,67	1,125	60	3,13	1,641
I think that I will provide students with educational videos that I have created myself.	55	2,09	1,309	63	2,51	1,501
I will include other (learning) videos in my teaching that I have not produced myself.	56	2,48	1,362	61	3,05	1,371
I will also make audio files available to students that I produced myself …	57	2,79	1,555	62	2,52	1,4
… that I did not create myself.	56	2,84	1,57	61	3,15	1,537
Students will continue to receive assignments, tests or quizzes from me.	55	2,31	1,477	61	3,82	1,232
I will continue to use video conferences for teaching purposes …	58	2,53	1,354	62	3,5	1,34
… and screen-sharing.	19	4,0	0,882	49	4,22	0,798
I will ask students to send me self-produced videos …	55	2,55	1,463	61	2,72	1,318
… as well as audio files.	59	2,66	1,504	62	2,87	1,337

Perspectives for music education in schools after COVID-19: The potential of digital media

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Abstract

Innovations in research fields related to computer music and the advancement of the music industry have also influenced the digital industry for music education. Although many kinds of educational, edutainment, and entertainment music software appeared before the pandemic, and are still in use, with the COVID-19 crisis and restrictions it seems that music education in the primary classes has not systematically and fully benefited from the innovations and advances reported by science and the music industries. However, the current need to teach music online could have an effect on the use of digital media after the pandemic. We present examples from the Netherlands, Romania, and Israel that lead to observations and suggestions about the potential of digital media after COVID-19.

Introduction

More than sixty years after humankind successfully programmed a computer to generate sounds from a digital composition, and almost forty years after the invention of a standard for sharing musical information digitally – MIDI (Musical Instrument Digital Interface), and the invention of the Internet, it can be said that digital media brought significant changes in almost all fields of music. Writing, composing, performing, recording, storing, disseminating with or without video – all these activities always encompass producing and consuming computerized music and digital media. Exceptions are those musical performances that do not use any instrument or device requiring electricity.

In the last decades, an abundance of software dedicated to the educational market has appeared, offering digital solutions for the many challenges of music education. Private companies, governmental research institutions, and academies have all started initiatives on developing digital products for music education. This demonstrates the need for updating music education processes in accordance with developmental changes in the science and music industries.

This article describes the general potential of digital media, followed by international examples of how digital media were used for remote music learning during the COVID-19 pandemic, zooming in on music education in the Netherlands and Romania, and on an AI-based solution for online teaching and practicing Solfege, called Solfy, which has already been implemented in a pilot scheme in Romania.

Digital media in music education before COVID-19

Integration of technology

Although many amazing advances based on significant scientific research and inventions have been recorded in the field of computer music during recent decades, their influence in updating formal music education in line with these technological advances seems to be much slower – see for example the VEMUS (Virtual European Music School) project (Tambouratzis et al., 2008). This gap in technology integration has also been documented in other literature (see e.g. Bauer, 2014; Dorfman, 2013; Gall, Sammer, & De Vugt, 2012; Nart, 2016). It is also a fact that not all teachers embrace technology to the same degree (see e.g. Scherer, Siddiq, & Tondeur, 2019; Teo, 2011).

Potential of digital media

Despite the problem of technology integration, the different classifications used by music education researchers in the field of digital media and the provided examples indicate various technological potentialities for music education. For example, with reference to Reimer's musical roles (2003), Dorfman (2013) recognizes different roles that can be addressed with technology for technology-based music instruction (e.g. composing, performing, improvising, listening, music theory, and musicology). In a similar way, Bauer (2014) recognizes various types of activities in music education that can be addressed with technology. For creating music (e.g. improvisation, composition, audiation) and music theory training, Bauer states that technology can be helpful for instructional support, as a means to think in terms of sound, and for immediate reflection on a composition, even when no musicians are around. For performing music (e.g. feedback, modeling, motivation to practice, psychomotor learning), for example, he remarks that technology can be helpful for effective musical practice, for providing exemplary performances along with feedback, for learning aural and visual skills for improving musical literacy, and for providing new rehearsal and performance opportunities. Technology can provide access to abundant media for responding to music (e.g. intuitive and informal music listening), and also for the assessment of music learning (e.g. portfolios, summative assessments, checklists, rating scales, rubrics). Bauer also covers the use of technology for instructional design and productivity for professional development. Brown (2015) classifies different uses of music technology, namely for creation (e.g. sound recording, music production, aural awareness, and music theory training, music publishing, and music and other art forms), presentation (e.g. presentation platforms, sound reinforcement, electronic music performance, and machine accompaniment), reflection (e.g. the internet, music scholarship, and commentary, learning online, and assessment), and implementation (e.g. administration and productivity). Focused on education in general, Lai and Bower's (2019) classification of technologies in education shows that the range has broadened even

further, expanding applications to MOOCs, digital storytelling, feedback systems, programming, virtual reality, augmented reality, robotics, and blended learning.

Use in Use of digital media in Europe before COVID-19

The publication *European Perspectives on Music Education: New Media in the Classroom* (Gall, et al., 2012) presents ICT (Information & Communications Technology) in varying levels of mainly formal music education from different European perspectives. The presented research and examples of ICT implementation show a wide variety of different technologies and approaches, as well as differences between countries with regard to the implementation and availability of ICT. The presented applications range from digital media and portals for searching and retrieving music, information, and learning materials, and for music theory learning and musical skills training (e.g. online music learning methods, YouTube) to applications for practicing music (e.g. sequencing programs, music and video editors, notation programs). In addition, a variety of media is used in music education, ranging from CD-ROMs that accompany textbooks to mobile phones. On the other hand, there are also commonalities, especially with regard to the type of software programs that were reported. These include music notation (e.g. *Finale, Sibelius, MuseScore*), music editing (e.g. *Audacity, Wavelab*), MIDI sequencing (e.g. *Cubase, MAGIX Music Maker, Logic, Garageband*), and music accompaniment (e.g. *Band-in-a-Box*).

But which of these potentialities were more widely used during the COVID-19 pandemic? Since no research has been done on this subject, as far as we know, a comprehensive answer cannot be given. However, we can provide examples from different European contexts.

Remote music learning during COVID-19

Sharing knowledge to bridge distances

Born of the need to find alternatives to the frontal teaching of music, the Dutch Association of Music Teachers (VLS) called on its members (e.g. music teachers trained at a conservatory with a bachelor degree in music in education) to share lesson materials, links to online technologies, and assessments that they had used and liked for teaching music. These materials were collected on the VLS website (VLS, 2020) and are organized in six categories (translated from Dutch): 1) Music lessons at home for parents and children in primary education; 2) Teaching methods in primary and secondary education; 3) Online tools for secondary education; 4) Teaching materials for secondary education; 5) Teaching ideas from music teachers and others; 6) Final exams, secondary education special. In addition, general tips and other suggestions are provided via hyperlinks to an external blog on learning at a distance, an external *Microsoft Word*-document that contains a list of working methods and energizers for *Microsoft Teams*, and popular

Facebook groups in the Dutch primary education and secondary education communities. Furthermore, "wise words" from one of the VLS members are shared in a video.

The hyperlink to the first category, *Music lessons at home for parents and children in primary education*, opens a web page that lists a video with suggestions for remote music teaching in primary education and twenty-three hyperlinks that link forward to instruction videos, websites, and online portals, including songs, music activities, music lessons, blogs, and tutorials. Among these hyperlinks is a link to an online music app (*Google Chrome Music Lab*), which is accompanied by a hyperlink to a video tutorial by one of the VLS members. In addition, seven hyperlinks to online portals of commercially available music education methods are provided. During the COVID-19 lockdown in the Netherlands, much of their content was offered for free. Finally, also provided are two external lists of the Dutch National Centre of Expertise for Cultural Education and Amateur Arts (LKCA), and VONCK, VLS's partner association for arts, dance, and theater teachers. One or a few lines of explanatory text introduce all hyperlinks or items.

The second category, *teaching methods for primary and secondary education* overlaps the hyperlinks to online portals of music education methods and the lists of LKCA and VONCK provided in the first category, and extends the list to secondary education. Hyperlinks are listed to online portals of three Dutch music education methods (*BeatsNbits, Intro, Musicbox*), one music theory and ear training method (*Earz*), and a sub-portal of the Dutch music copywriter organization (BUMA), aimed at music education.

The third category, *Online tools for secondary education*, lists digital musical instruments and studio tools. These can be subdivided into dedicated virtual instruments (e.g. *Korg iKaossilator, Virtual Piano, Virtual Piano GM, Online Keyboard,* and *Online Pianist*), studio and recording tools (e.g. *Ableton Live, Bandlab, Garageband, Soundation, Soundtrap*, and *Spire*), instruction videos made by music teachers for different purposes (e.g. *Bandlab, Garageband*, and *Soundtrap*), tools with an educational aim (e.g. *learningmusic.ableton.com* and *learningsynths.ableton.com*), and an external list of music apps, compiled by LKCA. Some of these tools are free or were free during the COVID-19 lockdown in the Netherlands. An offer is also listed for a free online workshop for students and training and support for music teachers who want to get started with *Ableton Live*, offered by BUMA. All the listed items are introduced by explanatory text.

The fourth category lists teaching ideas from five music teachers. One of them suggests writing new lyrics on a current theme (e.g. related to COVID-19) for an existing song, using *Google Docs* from home, and having the students record their lyrics. The recordings can then be edited into one version. Another music teacher suggests using a conference tool, such as *Microsoft's Teams* or *Zoom*, to celebrate a pupil's birthday by singing a personal message and inviting house members to play along with anything that makes a sound. Yet another music teacher suggests using *Morse Code* (invented by S. Morse and A. Vail in 1838) for ear training, while another music teacher created a mix of seventeen well-

known music hits for students to guess. In addition, short music-related activities to be done at home (e.g. searching for things that make sounds, calling your grandmother and playing her a song, cleaning your instrument) were suggested. Finally, reference was made to a well-known Dutch nursery rhyme songwriter for his training videos to learn how to play the ukulele.

The final category, *Final exams, secondary education special*, offers information for taking music exams during COVID-19, including hyperlinks to official websites from the Dutch government.

Digital media most used during the COVID-19 pandemic

The items mentioned on these web pages provide a broad overview of digital media that music teachers' association members in the Netherlands would recommend to others for use in their music education during the COVID-19 lockdown. When focusing on the items included in four of the six categories of the VLS website, namely *music lessons at home for parents and children in primary education, teaching methods for primary and secondary education, online tools for secondary education, and teaching materials for secondary education*, many items classified in the literature are represented in the digital media listed on the VLS web pages, though in varying degrees. With regard to Bauer (2014), Dorfman (2013), and Brown (2015), all categories were represented in the lists, but mostly included performing music and creating music. Regarding Lai and Bower (2019), digital instruction through instruction videos and lesson designs are strongly represented in the lists. This is not surprising, since VLS requested this. Furthermore, the digital media listed do not represent all technologies in Lai and Bower's classification. For example, no applications of virtual reality or augmented reality are referred to. Additionally, website statistics suggest that the web pages were visited throughout the entire lockdown period with a peak during the first weeks of the lockdown. This could mean that visitors continued to look for learning materials and digital tools during the lockdown. In turn, this would confirm the potential of digital media for retrieving information, which is also illustrated by the EAS publication (Gall, Sammer, & De Vugt, 2012).

***Solfy*: A Solution for online music tuition**

Introduction

An example of a solution proposed for online music education during and after COVID-19, is the AI-based digital platform *Solfy* (https://www.4solfy.com/), for teaching and self-practicing Solfege. The initiative, which was led by Tzipi Koren (music teacher), Dr. Adoram Erell (expert in digital voice recognition, analysis, and processing), and Dr. Morel Koren (music teacher), received two consecutive grants from The *Israel Innovation Authority* that allowed the project to start operating. *Solfy* is still in development, but is already

suitable for teaching and (self-) practicing online, and is offered free throughout 2021, or until the restrictions imposed by the pandemic will be lifted.

It is an aid for music teachers and general teachers in approaching this subject locally or remotely, and is especially effective as an interactive tool for students to practice Solfege individually at home. *Solfy* includes voice synthesis, analysis, and machine learning, along with new methods of learning the musical language (among others proposed in the past by Dalcroze, Kodaly, and Orff). *Solfy* "sings" solfege with a synthesized voice from digital scores, "listens," records, and evaluates users' performances, provides feedback, and keeps records on progress. In the classroom, the platform can be used for rehearsal and teaching, singing together for about 10–15 minutes, and giving homework, while students will use it at home for individual practice, assisted by the artificial intelligence of the platform that provides feedback on the correctness of singing Solfege. Teachers can remotely monitor the results of asynchronous students' activities, after the students have practiced Solfege.

Description and specifications

Solfy displays two distinct modes: *Explore Solfy* and *Practice Solfege*. *Explore Solfy* does not require registration, permits trying out the teaching materials without restrictions, listening to the Solfeges (*Play*) or recording them (*Record*), but it does not provide feedback on the accuracy of the execution. The *Record* button includes a mini submenu for recording with *MIDI+beats* (MIDI generated guide, and metronome sounds), with *Beats* (only metronome sounds), with *Orchestra* (orchestral accompaniment), and with *Mute* (without any audio support, but only visual).

The mode *Practice Solfege* requires registration by filling out a simple form, accessible via the *Sign In* button. Registering, under the *Group* heading, teachers (or independent users) will choose *Independent*, and students will tick the name of the *Group* created by their teacher.

In order to prepare the groups, teachers will contact *Solfy* on mail (4solfy@gmail.com) to receive a *teacher status*.

The mode *Practice Solfege* provides feedback after each recording. This requires users to wear a headset (audio headphones with microphone), be in a quiet environment, and go through lessons and exercises progressively, according to the requirements stated by *Solfy* in short messages. In *this* mode, students listen to a Solfege exercise (pressing *Play*) and watch the notes on the digital score. Equipped with the headset and hitting the *Record* button they sing and record the Solfege, receiving feedback about the execution. Inaccuracies in the feedback: name of the note, pitch, duration and intensity, will appear in the score, in red. The accurate performances will appear in green, and will reward the user with an accompaniment, *Orchestra*, added automatically to the *Record* submenu.

These accompaniments are custom made, prepared by the composers Bogdan Focşăneanu (Romania, Canada) and Michael Dulitsky (Russia, Israel). The composer Inon Zur (Israel, USA) gave *Solfy* permission to use some of his musical works as Solfeges, including the use of the original recordings, as *Orchestra*.

The function *Review your work* allows users to examine the recorded Solfeges, both in form of a statistical table, and in a playable music score. The statistical table displays the name of the exercise, type of audio guide used, tempo, number of successful performances, and pitch, duration, syllables, and dynamics errors. The playable music score permits reviewing and listening to past recordings, along with the feedback score received at that time.

The function *Recording test* allows checking the headset connection, and the quality of the recording.

The function *Adapt* Solfy *to Your Voice* allows advanced users, who already know how to sing the notes, to take a short test, designed to help *Solfy* build an *acoustic voice profile* necessary to evaluate the user performance.

The function *Teacher View* can be accessed by teachers who received a teacher *status,* and have groups of students enrolled in *Solfy*. It allows the teachers to create and organize the students into groups, to monitor and coordinate their activities remotely, giving access to students' statistical tables and their feedback in an asynchronous manner, meaning at any time after the student activity.

The content

Solfy's content is progressively ordered in levels, lessons, and exercises. The lessons can be approached modularly, at an average rate of one lesson per week – as decided by the teacher.

A level contains 26–28 gradually staggered lessons, each lesson consisting of four Solfeges: two *exercises* and two *songs*. Each new lesson adds 1–2 new notions, with concrete examples, and the student needs to complete the respective Solfeges chronologically and consecutively in order to move on to the next lesson. Practicing the lessons from the first level, a beginner (aged 7–11) will start to understand his auditory and vocal possibilities, will learn and practice the sounds and notes *sol, fa, mi, re, do*, the *2/4 measure*, will know the *halves, quarters, eighths*, and their respective *rests*, the dynamics *forte* and *piano*, *arpeggio*, *legato* (tie), *syncope*, and *countertime*.

On the second level, the students will consolidate these notions, learning new subjects: the *3/4 measure*, *la, si, do* (on score), and *si, la* (under the score), singing in canon and using *1-2 sharps*.

The materials on the third level are to consolidate the previously learned notions, adding: the *4/4 measure*, *1-2 flats*, *modulation*, and *transposition* (offering the same Solfeges in different scales), and exercises with *3 sharps and 3 flats.*

To be able to proceed to the next lesson, students need to record all four Solfeges from the current lesson, and to succeed in at least one of them. At the same time, *Solfy* gives students who need more time for practice the opportunity to repeat during the homework, a few times a week, until they succeed.

Using *Solfy* in class, online, and in (self-) practice at home

For beginners (aged 7–11), *Solfy* can be used for 10 to 12 minutes in a local or remote music lesson, as an interactive teaching material, in combination with traditional methods (such as those of Kodaly, Orff, or others). Based on this, the teacher can give homework (to practice the Solfeges three times a week for approximately 10 to 12 minutes each time), and to monitor students' activity through the "Teacher View" function.

Teachers can implement a similar scenario, adapting teaching plans with *Solfy* according to the musical level of intermediate grade class (ages 9–12). For example, to consolidate first the materials from level one, then to proceed to level 2 giving homework each week, to self-practice individually at home. For more advanced grades (ages 10–13), the general scenario is similar, the final decision being made by the teacher.

For the primary classes in vocational schools, which benefit from specialized theory and Solfege classes, *Solfy* can be considered a teacher's assistant: assisting on preparing the homework, tracking the activities, keeping record of the feedbacks and progress, and reporting on these to the teacher.

Currently, *Solfy* contains only three of six designed study levels. It is planned to add collections of songs from different times and geographical locations.

Music education during COVID-19 in Romania

Implementation of *Solfy*

Professor Irina Florian, Music Inspector of Iași County, authorized the use of *Solfy* as a first pilot scheme in November 2019. It was first implemented by Professor Ciprian Juncă at the Ion Simionescu School, Iași, in two classes with pupils aged 11 and 12.

During the pandemic in Romania, especially in the small cities and villages, not all the schools were ready from an IT point of view to switch to online education, nor did they have experienced teachers in the field of technology. Other schools, especially from the big cities, adapted to online education in a relatively short time by using recorded music (CD, DVD, YouTube), the music library of *Radio Romania Musical* through the national project *Listen to Five Minutes of Classical Music*, video conference solutions, and some

interactive music education books. Among these online solutions, several music teachers from schools and universities under the authority of the Romanian Ministry of Education adopted *Solfy* as a new option.

In the period of restriction imposed by the pandemic, the number of teachers interested in implementing the platform in their classes increased promisingly, as did the same proportion of active students. *Solfy* was an immediate solution for online tuition and practice. The number of enrolled students is now eleven to twelve times higher than before the pandemic, and the number of active users increased to approximately 75 percent of those enrolled. From the learning analytics of the platform, we can see an ongoing decrease in the number of mistakes made by the beginners, who continued to make new attempts with better results after a few inaccurate recordings – which we consider gratifying. Subjectively, these data are promising for the developers of the platform, and, objectively, for the validation of the solution as being useful for the wider promotion of singing by practicing Solfege.

Between March and July 2020, *Solfy* was also used at the University of Oradea, Faculty of Social Humanistic Science, by students enrolled in the general teachers' courses. Dr. Muntean, who led the project, addresses in his book some of the requirements for implementation, and urges the use of digital media for contemporary learning (Muntean, 2017a):

> "[…] All digital resources can be used as long as they respect the specific features of the students' ages and the teachers' aesthetic and didactic criteria. […] In conclusion, we can assert that digital resources constitute a must-have for a school anchored in the contemporary world not only because they are part of everyday life, but also because they are beneficial for the education of primary school children."

In a written interview about the use of digital media during the COVID-19 crisis (2nd October 2020), Dr. Monica Buhai, inspector of arts from Tulcea Country, mentions some challenges and facts:

> "[…] the most useful are those programs/platforms that help not only the transmission of knowledge and the formation of skills, but also the evaluation of learning outcomes. The use of information technology in the act of learning is a definite necessity, taking into account the fact that man is a social being who needs to exercise group membership, to assume collective roles, and to emphasize."

In a webinar organized in December 2020 by Dr. Diana Sârb at the National Academy of Music G. Dima, Cluj, for students learning how to be music teachers, *Solfy* was presented as a new addition to the digital toolbox of future music teachers. Teachers with special interest in singing and practicing Solfege were encouraged to join *Solfy*'s initiative and make their contribution to promoting music literacy.

Potential of digital media after COVID-19

The examples provided illustrate some of the potential of digital media during the COVID-19 pandemic through suggestions of music teachers and their views, and those of other actors in the field of music education. Although the contexts of music education differ from country to country and analysis has been done only loosely, some general observations can be made from this.

From the Romanian context, it is possible to understand that aspiration and motivation to use technology in music education existed before the COVID-19 crisis. The use of technology in music education was conditioned by the technological base.

From the Dutch context, it becomes clear that VLS members (e.g. music teachers), shared a wide variety of learning materials and lesson ideas during the COVID-19 crisis, representing many categories of digital media published in literature – but not all. Not only do the digital media listed on the web pages illustrate the potential of digital media, but the website itself also served as a digital medium and illustrates the potential of digital portals for finding and sharing learning aids. This potential of retrieving information is also highlighted in the Romanian examples. Furthermore, many digital media, including *Solfy*, were made freely available during COVID-19. Apparently, there was not only a need to discover, but also a willingness to share.

The COVID-19 lockdown forced music teachers in the Netherlands to use digital media for teaching music online because they simply had no other option. It is likely that knowledge of the digital media (experience, skills) may have increased during the pandemic. In Romania, too, the pandemic practically forced the move to teaching online and therefore made it obligatory for music teachers to learn to use the technology.

Knowledge of technology is conditional on having so-called technological pedagogical content knowledge (TPACK). In other words, the knowledge required for a successful implementation of technology in music education (Koehler, Mishra, Kereluik, Shin, & Graham, 2014; Mishra & Koehler, 2006) also leads to the acceptance of technology (Scherer, et al., 2019). Thus, since teachers had to spend hours working with digital media during the COVID-19 lockdown, they might be more open to using digital media in music education after the pandemic. However, the opposite may be true for those teachers who had negative experiences with digital media during COVID-19. The lockdown also made it clear that synchronized music making through video conferencing platforms still presents a challenge, and that (music) education also serves a social purpose, which could be lost if solely online lessons are provided.

Finally, we hope that this article has shown the strength of collaboration through sharing ideas, learning aids, and views, which help to bring music education forward. Collaboration would also benefit the development of digital media for music education. Organizing a large pilot for technological and pedagogical tests in collaboration with *EAS*

members would benefit both. An interesting approach could be to collaborate with *Solfy* to provide a basis for systematic research, addressing the complex issues related to promoting singing and music literacy in formal music education in different countries.

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"Corona-lessons" for reaching socially disadvantaged students in the hybrid music classroom

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Abstract

During the suspension of face-to-face schooling due to the COVID-19 pandemic, socially, economically and technologically disadvantaged students in most European countries experienced additional inequality in attempting to continue their education via synchronous and asynchronous online lessons. This led educators to search for ways that would allow equal access to all. This paper focuses on the hybrid learning and teaching model for the music classroom and the benefits of a combination of face-to-face instruction paired with online, synchronous and asynchronous music lessons for all students. Suggested blended courses incorporate elements drawn from the Universal Design for Learning (UDL) framework and enhanced with mind mapping technique tools and the creative thinking music model. With a strong focus on maintaining an educational balance in the hybrid classroom, the paper provides music educators with tools to build on a student-centered approach and enrich their teaching programs in ways that would allow equal access to all. In conclusion, the "Corona-adapted-lessons" can prove to be beneficial to music educators in implementing more all-inclusive teaching methods in ways that will encourage and support disadvantaged students and boost resilience in all students during and after the current pandemic health crisis.

Inequalities in education during the COVID-19 pandemic

Even before the pandemic, the world had been undergoing a learning crisis, where most disadvantaged students struggled with various difficulties with accessing educational opportunities, frequently accompanied with learning deficits and higher dropout rates (Thomas & Rogers, 2020). During the first half of 2020, the COVID-19 pandemic forced most European education systems to suspend face-to-face teaching and close schools in order to limit the spread of the virus (ECDC, 2020). This resulted in classes mostly continuing via an online teaching model. The unexpected and abrupt lockdown of schools found most music educators unprepared to move to an online synchronous and asynchronous teaching mode (Daubney & Fautley, 2020). In addition, many students faced various difficulties on a technological, educational, emotional, psychological or social level. Inequalities and challenges ranged from having few or no technological resources to participate in lessons or sharing same resources with other family members at the same time to lacking parental support, struggling with conflicts within the family, not feeling safe at home, being homeless or experiencing loneliness and social isolation (UNESCO, 2020; Onyema et al., 2020; United Nations, 2020).

Socially disadvantaged students beyond the pandemic

Even though the entire educational system has been affected by the public health crisis of the COVID-19 pandemic, social, ethnic and economic disparities intensify inequalities among the student population (Williamson, Eynon & Potter, 2020). The lockdown that was mandated simultaneously in a number of European countries triggered an 'epidemic of educational poverty' (Green, 2020). Not all children had the same opportunities to attend online classes, be introduced to new knowledge and participate actively in learning during the lockdown.

According to the data of the European Joint Research Center (European Commission, 2020), in 22 European countries more than one fifth of children lack during the pandemic at least two of the following vital educational resources:

- Internet access;
- Absence of a computer or tablet at home;
- A quiet place to study;
- Reading opportunities;
- A key source of daily nutrition.

As Green (2020: 5) posits, "what potentially makes the experience unequal […] is that some locked-down children may be receiving far less mitigating schoolwork than others, and less help with that schoolwork from their families". These inequalities were especially true for the socially disadvantaged students (Green, 2020; Vignoles & Burgess, 2020) who were in need on various levels, such as access to a computer or a smartphone, an internet connection, resources especially designed for students with learning difficulties, online lessons designed for students with special needs and more. Looking into the future and beyond the pandemic, while schools are reopening in most European countries, perhaps we can learn from our distance education experience to rely more on technology and combine virtual learning environments with face-to-face teaching in the classroom in order to reach all students (Thomas & Rogers, 2020).

Existing literature shows that during normal times parents of a higher socio-economic status tend to be more involved in activities that positively influence children's learning outcomes (The European Commission's science and knowledge service, 2019). The current pandemic situation has affected people from all possible backgrounds and social groups shifting priorities and changing established routines. The effects of this "new normal" warrant additional research. However, one paradigm remains unchanged: Educational achievement and engagement of students start with their families/caregivers.

Equity in music education

Within the scope of the research for the application of Music Education in Human needs theory, Bates (2009) argues that "no comprehensive needs theory stipulates that music is

itself a basic need" (p. 24). However, it is vital to say that music is a part of every known basic need as it is part of us. We are born with the most powerful instruments: our voice and our body. These tools alone allow us to make music, to comfort, to entertain and to educate through music from the first days of our lives. We are lulled to sleep as babies, we sing and dance when we are happy, we listen to calming sounds of nature, and we feel the heartbeat of the environment around us while fulfilling our basic needs. But the older we get, the less space is dedicated to music development and education. Cultural and economic inequality, social stereotypes, educational programs shape our routine often in an unjust way.

Equity in music education has been the focus of research in recent years. Especially during times of Corona, it is even more urgent to make sure that all children, whether in class, in a hybrid mode or in a blended[26] online synchronous and asynchronous model of teaching and learning, are able to attend, to learn and to participate.

In 2020, existing teaching techniques and approaches were challenged by the "new normal." Remote classrooms, confinement restrictions, and homeschooling required new ways of reaching out to every student independently of their social and economic status. In order to promote equity in our music classes, we are looking to transform the landscape of music teaching and learning to a more contemporary format that celebrates the musical world students inhabit (Webster, 2017). Webster's realization is extremely relevant at the present times when we are all looking for engaging and inspiring teaching techniques. So what are the tools and ways that will make every student feel connected, included and valued? In search of a learning process that is comforting, easily-accessible and flexible to adapt for hybrid classrooms, we present various approaches that can be used by music teachers to promote an all-inclusive music class.

Revisiting Universal Design for Learning in the music classroom

During the COVID-19 pandemic, music educators faced the challenge of teaching remotely and were asked to find ways for all of their students to be able to continue their education from home, uninterrupted. In most cases, synchronous and asynchronous methods of remote teaching were both used. Other examples were radio and television educational programming, as well as distance learning and home schooling mostly led by parents, guardians and caregivers (World Bank, 2020). However, not all students were able to participate in the learning process equally well. Universal Design for Learning (UDL) offers an educational framework guided by principles that promote equity and access to education for all. In the shift to a hybrid or a blended mode of education that is emerging

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[26] The terms "blended" and "hybrid" are frequently used interchangeably. However, in the present paper, we use the term *blended* as a combination of face-to-face learning environment in combination with asynchronous self-paced learning (Graham, 2006) and the term *hybrid* as the combination of face-to-face and online synchronous and asynchronous teaching and learning (Linder, 2017).

during the pandemic crisis, UDL can be revisited and applied in order to reach and teach music to all students. Based on specific guidelines that draw from research on the three neural networks (the 'what', the 'how' and the 'why' of learning) (CAST, 2020), UDL focuses on a flexible lesson planning prepared in advance, so that all learners are included and all barriers are eliminated and dealt with from the start (Halkiadaki & Akoyunoglou, 2018, 2019).
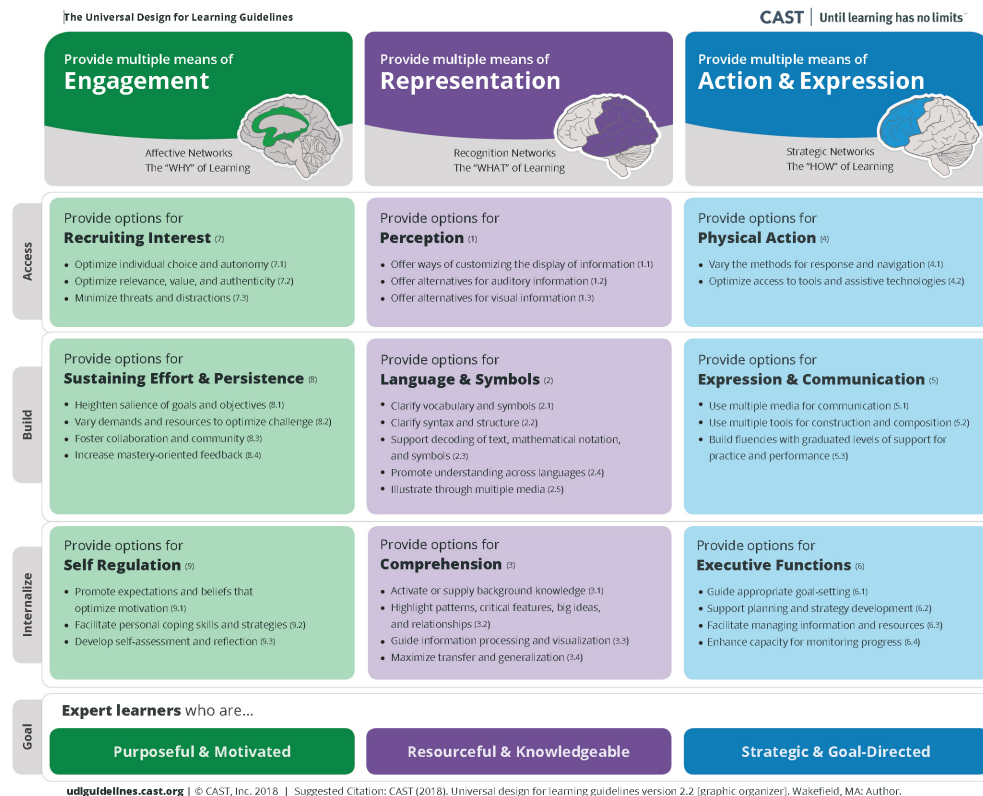

Table 1. CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from http://udlguidelines.cast.org

The application of UDL in music classes can re-inform teaching practices after the pandemic, so that learners with different capabilities, unique technological profiles, environmental limitations and individual characteristics will be acknowledged from the outset. Considering a blended or a hybrid form of teaching, the three basic principles of UDL that can be applied by music educators are (a) multiple means of representation, (b) multiple means of action and expression and (c) multiple means of engagement and participation. Explicitly, each principle underlies a number of interventions to aid all students in their efforts to participate in the learning process:

(a) Since students are unique in the way they perceive, learn and assimilate new information, **multiple means of representation** offer ways for each unique learning style. Variety in size and color of text and notation, an emphasis on specific

information, a speech-to-text software, tactile alternatives for notation or key visuals, vocabulary and symbols within texts, and digital text with voice recordings, offer students choices that will provide accommodations for possible learning difficulties. In addition, a variety of images or other visual cues, visual notations of music, audio clips, visual description for musical interpretations, as well as video with animation and physical objects can provide visual alternatives of the information presented and assist students in their learning. Also, the use of an interactive whiteboard, of a communication platform, social media, and other similar options can enhance students' perception, language and comprehension (CAST, 2018).

(b)   Navigating in a learning environment is different for every student, so providing **multiple means of action and expression** is fundamental for all learners. According to the guidelines of UDL, there are multiple options a music educator can offer to students for them to express their newly acquired knowledge, such as alternatives to physically responding or interacting with materials, including access to keyboards, touch screens or specifically designed software. Additionally, the use of multiple media, such as storyboards, film, visual art, sculpture, video, physical manipulatives, social media and interactive web tools, provides students with an array of choices for participation. Furthermore, the use of tools such as concept mapping, scaffolding and differentiated feedback can prove useful in responding to each student's individual needs (CAST, 2018).

(c)   The degree of **motivation and engagement** of learners varies within a classroom, so it is essential for the music teacher to find ways to recruit interest and curiosity for learning by optimizing individuality and autonomy of choice as well as minimizing distractions and barriers. There is a need to create an all-inclusive classroom environment, to use routines, calendars and schedules in order to increase predictability. It is important to provide alternatives in working styles, either alone, or in small groups of friends or even in larger groups, and ways that will foster collaboration and community. Moreover, in building community it is essential to promote whole class discussions, to emphasize process, effort and improvement, to create expectations for group work and provide ways for learners to engage in common interests or activities with peers (CAST, 2018).

Universal Design for Learning does not offer one solution but offers multiple alternatives for all (Halkiadaki & Akoyunoglou, 2019). In the wake of a new era following the COVID-19 pandemic, the aforementioned educational framework can be used by music educators of all levels of education, in order to combine creatively in class, online, synchronous and asynchronous modes of teaching, in ways that will make music learning accessible to all students.

Enriching the current model of music education: Best practices and scientific findings in music teaching adaptation

The post-confinement educational process has evolved and been modified to incorporate techniques developed during lockdown in combination with traditional teaching approaches. Taking into account the uniqueness of the current situation, educators are facing the need to create a continuous routine that will be beneficial and reassuring for students. This section provides examples of the hybrid techniques forming the gradual learning connection between classroom and home:

- Mind Mapping Techniques as visual learning tools in the hybrid music classroom.

  According to Tony Buzan, the creator of Mind Mapping, a Mind Map® is a powerful graphic technique which provides a universal key to unlock the potential of the brain (Tony Buzan Learning Center, 2017; Akbar & Taqi, 2017). It harnesses the full range of cortical skills – word, image, number, logic, rhythm, colour and spatial awareness – in a single, uniquely powerful manner (see fig. 1).
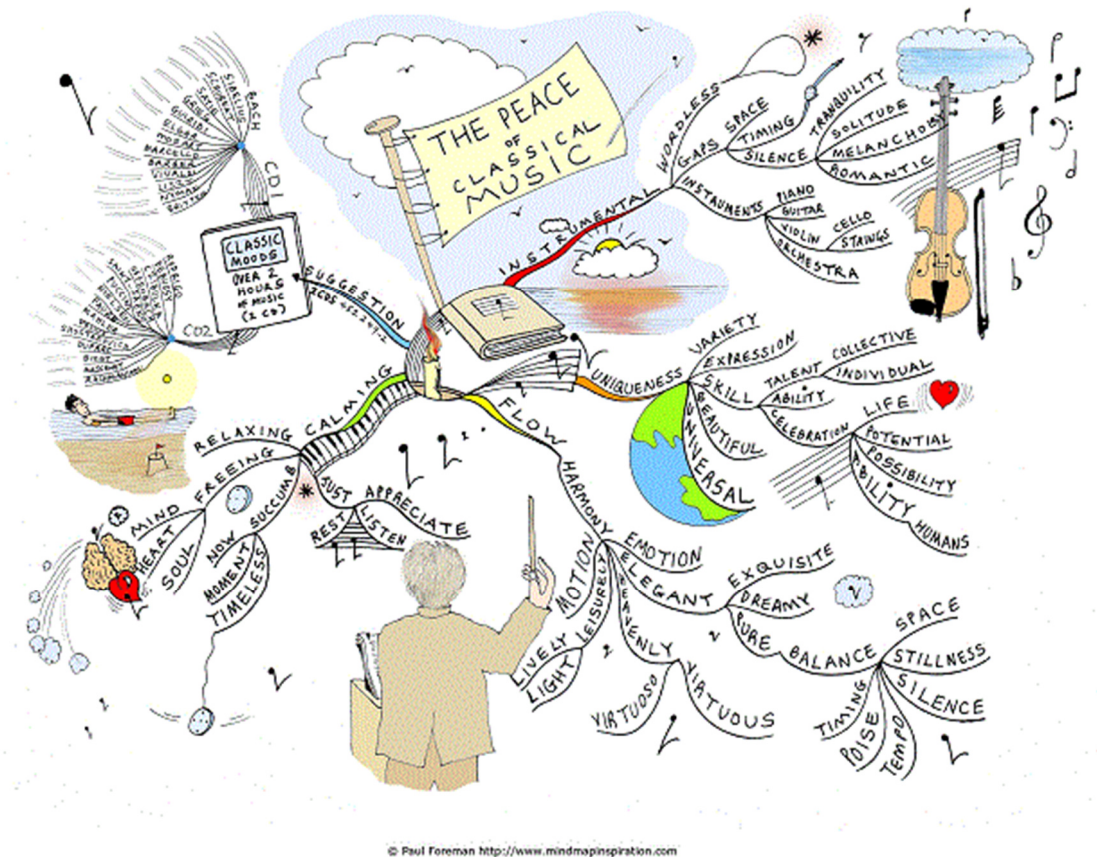

Figure 1. The peace of classical music. Foreman, 2011

The utilization of this graphic tool significantly increases memorization and retention of the knowledge acquired (Çoban & Tokatlı, 2017). Mind Mapping can be performed through software or manually (paper-pencil). Considering the current restrictions,

such as social distancing, limited time in the classroom, and the necessity for a substantial amount of independent study, this technique is widely accessible and easy to use by all students at home, in the classroom or online.

- Creative thinking in a student-centered model in music class

A student-centered model of music education is widely discussed (Coss, 2019). Nowadays, a controversy exists in the literature in relation to the implementation of a student-centered model in music education specifically. However, we would like to highlight the following suggestions to music teachers that will allow them to work closely with students of all backgrounds and maintain a balance for equal learning opportunities in the hybrid classroom:

❏ Learn and embrace musical traditions of students (Bates, 2018). Transposing and reflecting familiar musical motives close to their heart into education may motivate them to integrate with the class and engage in the music learning process.

❏ Infuse composition and improvisation (Webster, 2016). Experimenting with sounds and composing their own musical compositions encourages individual creativity and shows results to the families as well as to educators elevating music development to a new level.

❏ Effectual Theory (Hanson, 2020). An atypical, impactful form of music teaching, this approach requires students to contend with high levels of unpredictability while learning to make the best of the unexpected. The utilization of limited resources is maximized by placing the students at the center of instruction and applying collective thinking. This approach obeys the motto "Go fast alone or far together". This method boosts creativity and team work and can be implemented online as well as in traditional ways (letters, phone, printed information, etc.)

❏ Every class project needs to contain online as well as offline completion parts. It is crucial to keep every student responsible for equally significant parts of each assignment.

Boosting resilience in the music class after the pandemic

The pandemic has presented many adversities for students of all ages and more so for at-risk, marginalized or disadvantaged students. Drawing from central themes of positive psychology, resilience, as a term, has been used to describe one's ability to work through adversities, to succeed despite difficulties and be able to adapt in a positive way (Masten, 2001, 2011). Recently, the definition of resilience has been broadened to include "the capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability, viability, or development" (Masten, 2011: 494). Moreover, in the time of the pandemic, the capacity to overcome adversity has found even deeper meaning

and, as a shared experience of all "it involves struggling well and integrating painful loss experiences" into our daily lives (Walsh, 2020).

The importance of school programs in building and enhancing resilience in students has been stressed in a number of studies (Allen, 2014; Fenwick-Smith et al., 2018). Since art and music have proven to be powerful resilience boosters and confidence builders (White, 2018; Pasiali, 2012), it is crucial for the music educator to take into consideration the increased need to build resilience skills and strategies among their students during and after the pandemic. Three types of intervention can be identified as strategies for building resilience: asset enhancement, reduction of difficulties, risks or stressors, and facilitation of protective processes (Masten, 2001).

1. Focusing on asset-building interventions, the music educator can provide learners with multiple tools and resources to compensate for disadvantages and challenges they might face. A hybrid educational format that combines in class teaching with online learning platforms that are supported by various technological means (smart phones, tablets, laptops) and offline learning platforms with easy and free access from different communication devices (computer, television, radio, mobile phone), can make learning accessible also to students with minimal resources and, by extension, enhance their resilience and self-efficacy.

2. Since economic, social or environmental hardships restrict children's accessibility to classes (physical or virtual) and affect academic performance and learning outcomes, the music educator should strive to minimize difficulties by focusing "on altering the level of a particular risk" or difficulty in a child's life (Masten, 2001: 230). The hybrid learning environment provides the music educator many alternatives in order to reach and teach students, support the learning of new musical knowledge and expand their music skills as well as foster feelings of efficiency and achievement. This can be achieved by individually targeted teaching aids and assignments in class or sent by email or a shared free-access teaching platform, musical instruments that are accessible to all, individual tutoring whenever needed, engaging parents' contribution in joint parent-student music assignments, and providing ways of enriching the physical or virtual music classroom.

3. Drawing from the experience accumulated in online teaching methods during the COVID-19 lockdown, music educators are more equipped to put into practice a hybrid educational model. In combining both the physical and the virtual learning environments, the music teacher is able to moderate difficulties or adversities encountered by disadvantaged students, provide alternatives for students with learning challenges and engage students in both learning methods. This will result in facilitating the learning experience for all students, boosting academic and psychological resilience and maximizing protection against problems faced by children growing up in disadvantages and adverse life circumstances.

The "Corona-lessons" gained during the lockdown period, can prove to be beneficial to music educators in implementing more all-inclusive adaptable teaching models, using multiple online educational materials and solutions (UNESCO, 2020), framing the learning process to be accessible to all by using open educational resources (OER) available in the public domain, and using interactive web-based music tools, such as audacity, musescore, audiotool, beatmaker, chrome music lab, soundgym and many more to enhance collaborative work among students as well as individual learning.

Stephen Hawking said that "we are all now connected by the Internet, like neurons in a giant brain" (Swartz, 2014). This became evident during the lockdown period, when educators began to connect with other educators through various social media platforms, in order to reach out, collaborate and share knowledge and experiences. As the need for online education presented itself, music educators responded by connecting with the larger educational community and strived to maintain communication with their students. This has been a learning process for most of us, where we have confronted our weaknesses and have focused on our strengths, in order to move forward during and after the pandemic by putting in place a blended and/or a hybrid form of teaching, driven by the need to address the educational needs of all our students.

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