Distance Learning and Teaching in Group Settings at Primary Music Schools in Slovenia

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∼ During the Covid-19 pandemic, all stakeholders in education, including music teachers, had to respond to new challenges, including the adjustment of the learning process to the requirements of distance learning and teaching. The main goal of the present research was to determine music teachers' self-assessment of ICT competences and their use of teaching methods, strategies, techniques and assessment methods. A survey questionnaire was designed and the collected data were processed using the Friedman test and the Kruskal-Wallis test. The sample consisted of teachers of subjects that are taught in groups (i.e., Music Preparatory, Music Theory and Solfeggio) at public primary music schools in Slovenia. The participants reported no problems using most ICT tools and resources during the pandemic. In general, they were most confident with videoconferencing tools and least confident when recording explanatory videos unaccompanied by oral explanation. In the planning and implementation of the teaching process, they least frequently used activities of music creation and playing Orff instruments. More specifically, lessons in Music Preparatory most frequently included listening activities, while classes in Music Theory and Solfeggio focused on the transmission of theoretical musical and formal knowledge. Overall, the teachers mainly resorted to synchronous and frontal instruction. In terms of evaluation and assessment of musical abilities, skills and knowledge, they most frequently employed oral consolidation, testing and assessment, as well as student-produced recordings of rhythmic and melodic exercises.

Keywords: distance learning and teaching, music schools, information and communication technology (ICT), music activities, teaching and learning methods

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Učenje in poučevanje na daljavo pri skupinskih predmetih v slovenskih glasbenih šolah

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Med epidemijo covida-19 so se morali vsi deležniki v izobraževanju, med njimi tudi učitelji glasbe, odzvati na izziv, ki je zahteval prilagoditev učnega procesa in izvajanje pouka na daljavo. Glavni namen raziskave je bil ugotoviti samoocene učiteljev glasbe glede IKT-kompetenc ter njihove uporabe metod poučevanja, strategij, tehnik in metod ocenjevanja. Oblikovan je bil vprašalnik, zbrani podatki pa so bili obdelani z uporabo Friedmanovega in Kruskal-Wallisovega testa. Vzorec je vključeval učitelje, ki poučujejo skupinske predmete (glasbena pripravnica, glasbena teorija in solfeggio) na javnih glasbenih šolah v Sloveniji. Udeleženci niso poročali o težavah pri uporabi večine orodij in virov IKT med pandemijo. Na splošno so bili najbolj samozavestni pri uporabi orodij za videokonference in najmanj pri izdelavi videoposnetkov brez razlage. Pri načrtovanju in izvajanju učnega procesa so v najmanjši meri uporabljali dejavnosti ustvarjanja glasbe in igranja na Orffova glasbila. Natančneje, učne ure glasbene pripravnice so najpogosteje vključevale dejavnost poslušanja, medtem ko so se pri nauku o glasbi in solfeggiu osredinjali na prenos teoretičnega glasbenega in formalnega znanja. Na splošno so se učitelji večinoma zanašali na sinhrono in frontalno poučevanje. Pri vrednotenju glasbenih sposobnosti, spretnosti in znanja so najpogosteje uporabljali ustno utrjevanje, preverjanje in ocenjevanje ter posnetke učencev (ritmično-melodične vaje).

Ključne besede: učenje in poučevanje na daljavo, glasbene šole, informacijsko- komunikacijska tehnologija (IKT), glasbene dejavnosti, metode poučevanja in učenja

Introduction

With the Covid-19 pandemic in 2020, education moved out of the classroom and into the homes of learners. Distance learning (also e-education, distance education, online learning and/or distance teaching) was a temporary solution adopted by the Slovenian government to ensure an uninterrupted teaching and learning process while simultaneously guaranteeing the safety of students and teachers at a time of crisis. The rapid adoption of decisions related to the Covid-19 situation forced schools to quickly organise and adapt to the new modality of delivery (Kustec et al., 2020). According to Hodges et al. (2020), such *emergency remote teaching* differs considerably from the "online learning" known and developed prior to 2020. Consequently, all education stakeholders faced unexpected challenges.

Although distance learning and teaching was not a solution that education stakeholders would implement without difficulty, research by Rupnik Vec et al. (2020) nevertheless shows high attainment of teaching objectives by Slovenian primary and secondary education institutions in this period. At the same time, teachers reported that distance learning and teaching had been more demanding and stressful. Moreover, school closure decreased the motivation for work among both teachers and pupils (Kustec et al., 2020; 2021) and increased problems in providing adequate equipment for individual pupils (Šef, 2020), as well as specialised teaching equipment and specialised classrooms for schools (ZASSS, 2020). Similar observations were made in various countries, namely a lack of IT devices, insufficient IT skills of students and teachers (Nedzinskaite-Maciuniene et al., 2022), a lack of children's interest in learning (Drvodelić & Domović, 2022), difficulties with following students' development especially in the area of assessment and evaluation (Özgür Karataş, et al., 2021), and heavy workload and poor performance of teachers (Zorkić, et al., 2021).

For teachers in the field of music education, the achievement of learning objectives linked to the performance and creation of music presented a particularly demanding challenge. As Begić et al. (2022) highlight in their research, most music teachers focused on active music listening during this period, as other activities (singing, playing, creating) were difficult or impossible to implement. The planning of distance learning and teaching further involved making decisions on the delivery method(s) that would best enable the achievement of the subject-specific objectives, e.g., synchronous communication (continuous interaction with participants in constant contact) through videoconferencing tools, not requiring the physical presence of participants in the same room. However, since the exclusive use of synchronous communication had earlier proven ineffective (Watts, 2016), a combination with asynchronous instruction was recommended when working

remotely. Asynchronous interaction is time-independent and allows participants to exchange information with a time delay (by email, text message or in an online classroom) and does not require a direct physical presence (Zmazek, 2022).

In addition to taking into account the teaching objectives, the age of the learners and the availability of technical aids, the choice of communication method(s) was also influenced by the choice of teaching method. Frontal instruction through a videoconferencing tool implemented in distance learning and teaching can negatively influence feedback and the accuracy of communication. Problems may also arise due to unresponsiveness of students, technology glitches and poor quality of audio and video transmission (Biasutti et al., 2021; Ververis & Apostolis, 2020; Svalina & Ristivojević, 2022), all of which can impede the teacher's ability to control the learning process. Indirect methods of instruction, on the other hand, have the potential to achieve greater learner involvement, which is their main advantage compared to frontal instruction (Kramar, 2009) and makes them particularly suitable for distance learning. Asynchronous individual activities (work done at home) can thus play a key role in the achievement of learning objectives. One downside of indirect methods of instruction is that they are more suitable for older pupils who can work independently and less appropriate for younger pupils, e.g., those attending Preschool Music Education (5-year-olds) and Music Preparatory (6-years-olds). Finally, indirect methods are also more demanding to organise and prepare.

Another sensitive issue in distance learning is the evaluation and assessment of knowledge. Some studies show that teachers feel that their assessment and feedback practices were implemented successfully (Mäkipää et al., 2021). According to Rupnik Vec et al. (2020), who looked at primary and secondary schools in Slovenia, the assessment and feedback practices closely resembled those of face-to-face teaching, following the guidelines set out in the curricula and relying mostly on oral examinations, via video conferences, and assessment of oral presentations and student-produced work, e.g., recordings. However, Klein and Lewandowski-Cox (2019) discovered that assessment has traditionally presented a significant challenge to working remotely. In a study by Biasutti et al. (2022), for example, music teachers highlighted the problem of maintaining equal criteria due to differing conditions and adjustment of content, as well as difficulty in evaluating the expressivity and interpretation of online performances. Reimers et al. (2020) further noted that school closure severely impacted both formative and summative assessment.

Despite these challenges, distance learning also had positive aspects, including the development of new practices by teachers and novel organisational methods for the teaching and learning processes. Among the advantages, authors

report the following: increased flexibility of working hours and innovative spatial arrangements, better adjustment of the pace and content of instruction, enhanced opportunities for individualisation, acquisition of new knowledge and skills (Bregar et al., 2020), creating innovative solutions new to teachers' practice (Korhonen, et al., 2021), improved organisation of teacher activities, more efficient sharing of good practices on platforms and keeping records of teaching and work (Biasutti et al., 2022; Petek, 2021; Thornton, 2020), and an increase in independence among students, including an enhanced ability to self-check and self-assess (Encarnação et al., 2021; Svalina & Ristojević, 2022). However, these aspects can be put into practice only if teachers attain a certain level of IT ability, skill and knowledge. In addition to in-depth interaction with digital technology, high-quality, effective and diversified distance learning also requires creativity, e.g., in the preparation of materials adapted to asynchronous delivery (i.e., interactive and explanatory videos with visual and/or interactive content, appealing and interesting worksheets) (Kustec et al., 2020).

In terms of IT competences, music teachers in Slovenia believe themselves to be skilled in working with information and communications technology (Bohak Adam & Metljak, 2021). Some international studies have also demonstrated music teachers' belief in their own average or above-average IT skills (Begić et al., 2022; Kibici & Sarıkaya, 2021). However, Moscardini and Rae (2020) disagree and consider two-thirds of music teachers insufficiently competent to teach music remotely and inadequately prepared for the distance learning process (Ayaz Töral & Albuz, 2021; Biasutti et al., 2021).

Group settings at music schools in Slovenia

Music education in Slovenia on the primary (school and preschool) level is provided by public and private music schools under the Preschool Music Education, Preparatory Music and Preparatory Dance programmes, as well as the Music (instrument and music theory/solfeggio) and Dance programmes. The aims and objectives of music education are defined by the Music Schools Act (ZGla, 2000), while the content of individual subjects and the learning objectives and standards are set out in the curricula (Ministrstvo za vzgojo in izobraževanje Republike Slovenije, 2022). The subjects Music Preparatory,[3] Music Theory and Solfeggio are taught in groups.

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3   The Music Preparatory programme has a duration of one year. The Music programme, on the other hand, spans six years for pupils aged 7–9 years and four years for pupils who enrol at 10 years of age or later (ZGla, 2000). On a weekly basis, the lessons are taught with the following durations: Musical Preparatory classes – 60 minutes; Music Theory and Solfeggio – 90 minutes for a group of 16 to 20 pupils, and 60 minutes for a group of 12 to 15 pupils (Ministrstvo za vzgojo in izobraževanje Republike Slovenije, 2022).

The principal aim of music education is to develop musical literacy. (Functional) musical literacy encompasses a range of abilities, skills and knowledge that are essential for engaging with music. It involves the capacity to play music and read and write musical notation, to perform music based on written scores, to articulate thoughts and opinions about music as a listener, performer and/or creator, to transcribe or notate the music one hears, and to comprehend and interpret musical notation (Mills & McPherson, 2006). The general learning objectives of the subjects Music Theory and Solfeggio are the development and deepening of musical perception (rhythmic, melodic, harmonic), the promotion of musical creativity, aesthetic sensitivity, musical taste and the ability to evaluate music-artistic works, and an introduction to the use of modern music technology (Zadnik, 2019). Among other things, the general objectives of Music Preparatory include the development of a positive attitude towards artistic expression, the development of basic musical perception (rhythmic and melodic) and musical expression, participation in both individual and group music-making, creation of musical and other artistic (visual, verbal, movement-dance) content, becoming familiar with visual representations of musical content and learning fundamental musical concepts (Curriculum. Music Preparatory, 2022). It is crucial that the learning objectives are achieved through musical activities, such as performing, listening and creating, which are fundamental activities in the Music Preparatory programme. The subjects Music Theory and Solfeggio include solfeggio, performing and interpretation of examples from music literature, creating, listening, and musical theoretical and formal knowledge. Musical performance and solfeggio are fundamental music activities that allow pupils to develop various elementary musical skills. Through activities such as singing, playing instruments (including body percussion, and improvised and Orff instruments) and enunciation of rhythmical content, pupils develop a sense of rhythm and melody. Additionally, performing helps them to develop a harmonic ear, to acquire the ability to accurately reproduce rhythms and pitches, to cultivate their singing voice and to learn to work in a group context. Through active listening to music, pupils develop attentive listening abilities and emotional sensitivity, and refine their aesthetic musical taste. Attentive listening also deepens their ability to appreciate and evaluate the expressive and formal elements of music (Denac, 2002). Alongside experiential listening, which encourages pupils to express their inner experiences and emotions in response to music, an important role is assumed by experiential-analytical listening, which motivates pupils to actively identify and analyse various musical elements and performance techniques and to evaluate musical works. Music creation encourages the development of musical

thinking, along with emotional and critical attitudes towards music, while introducing pupils to its expressive and formative elements (Sicherl-Kafol, 2015). Pupils are given the opportunity to create their own musical content, as well as recreate or interpret examples from the vast body of music literature. Within curricula, creativity represents the most dynamic form of learning, allowing pupils to utilise and integrate their musical skills and knowledge (Curriculum. Music Theory, 2022; Curriculum. Solfeggio, 2022).

A fundamental education method in the development of functional musical literacy in music schools is solfège or solfeggio,[4] which bridges the gap to understanding musical concepts and the theoretical and formal principles of music. Solfeggio develops pupils' musical skills and abilities through rhythmic, melodic and harmonic exercises and activities that improve their musical memory (Zadnik, 2019). It is important that the planning and delivery of lessons include a variety of music activities. Musical literacy, which "is manifested by developed musical representations and skills within the musical-categorical system, which serve as the bridge that facilitates the transformation of internal auditory perception of written musical content into vocalized expression, and vice versa" (Zadnik, 2011, p. 141), is not the sole objective of music activities. Such activities also contribute to the development of creativity, problem-solving abilities, effective management of emotions and the prevention of aggression, depression and anxiety, while also bridging gaps in communication (Sicherl-Kafol, 2015).

The learning objectives of the group lessons taught at music schools (i.e., in the subjects Music Preparatory, Music Theory and Solfeggio) include the active engagement of pupils in various music activities. It was this specific feature that motivated us to study the didactic aspects of distance learning during the first wave of the pandemic. In our research, we focused on the ICT competences of teachers and the frequency of the integration of music activities, methods and techniques into the learning and teaching process, as well as on the assessment and grading practices for ability, skill and knowledge.

Aim and research questions

The main aim of our research was to investigate the use of distance learning and teaching in group settings, specifically in the subjects Music

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4   In the programmes offered by primary music schools in Slovenia, solfeggio is included both as an activity and as an independent subject. Solfeggio as an activity comprises various elements, such as rhythmic dictation, melodic dictation, melodic-rhythmic dictation, exercises developing a steady metrical beat, exercises using the tonal alphabet with solmisation and/ or neutral syllables, and sight-singing exercises (singing a vista) (Curriculum. Music Theory, 2022; Curriculum. Solfeggio, 2022). In the curriculum of the Preparatory Music programme, the specific definition of solfeggio as an activity is not provided.

Preparatory, Music Theory and Solfeggio, at primary music schools in Slovenia. We focused on the following research questions:

1. How do teachers assess their own competence(s) in the use of ICT tools and resources?
2. What music activities were most frequently included in the learning and teaching process during group synchronous lessons in individual subjects?
3. Is there a connection between the level of (self)assessed ICT competence(s) and the frequency of the inclusion of music activities in the learning and teaching process?
4. What teaching methods and strategies were most frequently integrated into the learning and teaching process in individual subjects?
5. What teaching and learning techniques did teachers most frequently integrate into their learning and teaching process in individual subjects?
6. What consolidation and testing methods did teachers most frequently include in the learning and teaching process in individual subjects?
7. What assessment methods did teachers most frequently integrate into their learning and teaching process in individual subjects?

Method

The study is based on the descriptive and causal-non-experimental method of empirical pedagogic research.

Participants

The study included 52 teachers from public Slovenian music schools, who taught the subjects Music Preparatory, Music Theory and Solfeggio during the period of distance learning in 2020 and 2021. The study was based on a non-randomised probability sample. With regard to the distribution of the research participants, our questionnaire was mostly answered by teachers aged 51–60 (50%), followed by teachers aged 41–50 (25%), with a minority of teachers being under 41 years of age. The sample did not include teachers under 26 years of age. The largest number of the sampled teachers taught Music Theory (f = 50), and the smallest number taught Music Preparatory (f = 25), with 16 of the teachers teaching one subject, 21 teaching two subjects, and 15 teaching all three subjects. The largest portion of the sample was comprised of teachers from the Osrednjeslovenska region (24.5%) and the smallest portion from Koroška (1.9%). The other regions represented in the sample were: Pomurska (3.8%), Podravska (13.2%), Savinjska (11.3%), Zasavska (9.4%), Dolenjska (5.7%),

Gorenjska (5.7%), Goriška (9.4%), Primorsko-notranjska (57%) and Obalno-kraška (9.4%).

Instrument

An online questionnaire was custom designed for the study. It included nine closed-ended and five semi-open-ended questions. The section dealing with teachers' self-assessed ICT competences was based on a list of statements proposed by Rupnik Vec et al. (2020). When identifying variations in didactic practices, teachers who taught multiple subjects provided separate answers for each subject. A 6-point Likert-type scale was used to determine the usage frequency of music activities, teaching strategies, teaching and learning methods, as well as consolidation and testing methods (1 – every lesson, 2 – every other lesson, 3 – two to three times a month, 4 – once a month, 5 – less than once a month, and 6 – never).

Research design

The questionnaire was sent to all public music schools in Slovenia (N = 67) and was active from February through April 2022.

The data were analysed with the IBM SPSS Statistics V26 statistical software package, using descriptive and inferential statistics, more specifically frequency statistics, the Friedman test and the Kruskal-Wallis test. To maintain clarity and conciseness, the tables present only the key data of interest, omitting unnecessary details.

Results

The results are presented according to the research questions addressed in the study.

Teachers' self-assessment of ICT competences

A four-level statement scale was used to assess the teachers' competence to use ICT tools and resources: 1 – I cannot do it, 2 – I can only do it with help, 3 – I can do it independently but with difficulty, and 4 – I can do it independently without difficulty. Table 1 shows the results of the Friedman test for all self-assessed competences. The results are ranked with the highest value indicating the level of competence at which the teachers feel most independent.

Table 1

Teachers' self-assessment of competences

Competence	$\bar{R}$
Use at least one videoconferencing tool for the purposes of distance learning and teaching	4.79
Prepare exercises and activities supporting independent learning of new content	4.53
Tailor distance learning and teaching activities to individuals and groups of pupils	4.11
Record and share a lesson (with oral explanation)	4.04
Prepare assessment and grading exercises for distance learning and teaching	3.79
Use at least one of the online learning environments (e.g., Moodle, Google Classroom, MS Teams)	3.72
Make an explanatory video (in an unconventional way – with no oral explanation)	3.01

p = 0.000; $\chi2$ = 42.910

The results of the analysis showed that most ICT tools and resources were used by the teachers in distance learning and teaching independently and without problems. Statistically significant differences were found in individual ICT competences $(p = 0.000; \chi2 = 42.910)$, with the teachers being most confident in the use of videoconferencing tools (87.2%; $\bar{R}$ = 4.79) and least skilled in the production of explanatory videos with no oral explanation (using visual representation only) (41.3%; $\bar{R}$ = 3.01).

Music activities in the distance learning and teaching process

The next set of questions addressed the integration of individual music activities into distance learning in group music lessons at primary music schools. The Friedman test was used to compare music activities by subject. The frequency of music activities is ranked with the lowest value indicating the most frequently employed activity.

Table 2

Integration of music activities by subject – comparison

Music activities	Music Preparatory	Music Theory	Solfeggio
	R̄	R̄	R̄
Teaching about music theory and form	2.35	2.11	1.98
Listening to music	2.03	2.75	2.91
Creating music	3.00	4.01	4.17
Performing and interpreting examples from musical literature	2.63	3.69	3.57
Solfeggio exercises		2.44	2.37
p	0.018	0.000	0.000
χ^2	10.107	56.745	42.273

Listening to music was the most frequently used distance learning and teaching activity in Music Preparatory lessons ($\bar{R}$ = 2.03; p = 0.018), while in Music Theory and Solfeggio lessons, teachers mostly resorted to teaching about music theory and the transmission of formal knowledge ($\bar{R}$ = 2.11; p = 0.000 and $\bar{R}$ = 1.98; p = 0.000). Creating music was the least frequently used activity in all three subjects ($\bar{R}$ = 3.00; $\bar{R}$ = 4.01; $\bar{R}$ = 4.17). Next, we sought to establish whether there was a link between the self-assessed ICT competences and the frequency of using music activities. The results of the Kruskal-Wallis tests revealed no link between most ICT competences and the frequency of use. Thus, no statistically significant difference could be established between the frequency of using music activities among music teachers and their self-assessed ICT competences, i.e., *the use of at least one videoconferencing tool for the purposes of distance learning and teaching; the use of online learning environments such as Moodle, Google Classroom and MS Teams; the making of explanatory videos; the recording and sharing of lectures with an oral explanation; and the preparation of self-study exercises and activities.* A statistically significant difference was found only in the competence related to preparing remote evaluation and assessment activities (Table 3).

Table 3

Music activities vs. self-assessment of competence in preparing remote evaluation and assessment activities

Music activity	Competence – to prepare remote evaluation and assessment activities	N	$\bar{R}$	p	Kruskal-Wallis H
	I cannot do it.	6	31.08		
	I can only do it with help.	3	38.17	0.025	9.346
Creating music	I can do it independently, but with difficulty.	10	20.60		
	I can do it independently without difficulty.	25	19.32		
	Total	44			

As can be seen in Table 3, the teachers' competence in preparing remote evaluation and assessment activities shows statistical significance when connected with the frequency of use of music creation activities (p = 0.025; H = 9.346). Teachers who were more competent ($\bar{R}$ = 19.32) in this domain were more likely to undertake creative activities with pupils than those who felt less competent ($\bar{R}$ = 31.08).

Delivery methods and teaching strategies in distance learning and teaching

This set of questions was designed to identify similarities and disparities in the use of distance learning delivery methods and teaching strategies. Teachers could opt for a synchronous (simultaneous, live streaming) or asynchronous delivery method (time-independent, delayed feedback) or a combination of both. Table 4 presents the results of the Friedman test for the delivery methods by lesson. The lowest value indicates the method of delivery that was employed most frequently.

Table 4

Comparison of the frequency of delivery method by subject

Method of implementation	Music Preparatory $\bar{R}$	Music Theory $\bar{R}$	Solfeggio $\bar{R}$
Synchronous delivery	1.44	1.31	1.09
Asynchronous delivery	2.33	2.41	2.59
Combination of both methods	2.22	2.28	2.31
p	0.004	0.000	0.000
χ^2	10.857	29.360	25.529

A statistically significant difference in the use of the delivery method (p = 0.004; p = 0.000; p = 0.000) was established for all three subjects taught in primary music schools, with synchronous delivery being the predominant mode of instruction in all of them ($\bar{R}$ = 1.44; $\bar{R}$ = 1.31; $\bar{R}$ = 1.09).

Furthermore, as presented in Table 5, we were interested in the usage frequency of distance learning teaching strategies in relation to the method of delivery.

Table 5

Comparison of the frequency of teaching strategies by subject

	Music Preparatory	Music Theory	Solfeggio
	$\bar{R}$	$\bar{R}$	$\bar{R}$
Frontal instruction (synchronous)	2.00	1.85	1.87
Individual work – synchronous	2.47	2.90	2.87
Individual work – asynchronous	4.25	4.07	4.50
Work in pairs – synchronous	5.11	5.37	5.00
Work in pairs – asynchronous	5.19	5.21	5.16
Group work – synchronous	3.97	3.56	3.71
Group work – asynchronous	5.00	5.04	4.89
p	0.000	0.000	0.000
$\chi2$	57.343	106.266	61.129

Statistically significant differences emerged in the use of teaching strategies in all three lessons (p = 0.000; p = 0.000; p = 0.000), with teachers most frequently using frontal instruction (synchronous remote work) ($\bar{R}$ = 2.00; $\bar{R}$ = 1.85; $\bar{R}$ = 1.87). Asynchronous work in pairs and groups was the least used teaching strategy in all three subjects. In individual and group work, the synchronous type was preferred over asynchronous activities. In all three subjects, synchronous group work was more common than work in pairs.

Distance learning teaching and learning techniques

When selecting teaching and learning techniques, teachers had to give particular thought to the resources available to them and to their pupils at home. The results, calculated with the Friedman test and presented in Table 6, illustrate the frequency of using individual techniques across the three subjects under investigation.

Table 6

Comparison of the use of distance learning/teaching techniques across three subjects

Technique	Music Preparatory	Music Theory	Solfeggio
	$\bar{R}$	$\bar{R}$	$\bar{R}$
Explanation	6.53	5.24	4.53
Conversation	5.76	5.85	5.47
Presentation (PowerPoint, screen sharing)	6.09	6.65	6.31
Demonstration (playing instruments, singing songs, etc.)	5.82	5.76	7.38
Call-and-response/sing-along	5.35	8.17	11.13
Reinforcement of song	5.24	7.59	8.91
Musical notation	12.97	5.00	4.91
Graphic notation	7.24	12.14	11.41
Rhythmic speaking/recitation	7.44	6.41	8.91
Body percussion/playing on improvised instruments	8.12	13.08	12.75
Playing Orff instruments	15.06	16.29	15.09
Solfeggio techniques	14.79	6.92	6.28
Parlato readings	16.06	9.08	8.00
Phonomimic techniques	13.97	13.97	13.56
Experiential listening	8.65	10.76	11.31
Experiential-analytical listening	9.65	10.80	9.28
Musical creation techniques	11.94	13.42	12.03
Creation while listening to music	10.32	13.88	13.75
p	0.000	0.000	0.000
$\chi2$	175.635	320.318	132.415

Comparison of the frequency of individual teaching techniques used in distance learning yields a statistically significant correlation across the three subjects under investigation ($p = 0.000$; $p = 0.000$; $p = 0.000$). The techniques most frequently used in Music Preparatory lessons were reinforcement of song ($\bar{R} = 5.24$), call-and-response/sing-along ($\bar{R} = 5.35$) and conversation ($\bar{R} = 5.76$). In Music Theory and Solfeggio lessons, the most commonly used techniques were musical notation and explanation. The differences in using teaching techniques are conditioned by learning objectives. One of the learning objectives in Music Theory and Solfeggio that is not included in Music Preparatory is, for example, singing selected melodic exercises with solfège syllables, the musical alphabet and neutral syllables.

In all three subjects, the use of Orff instruments was the least frequent teaching technique. As expected, parlato reading and solfeggio techniques were the least frequently used teaching techniques in Music Preparatory lessons, as these are not yet part of the syllabus. Musical creation and creation while listening to music were also among the most infrequently used techniques across all three subjects. The demonstration technique was used rather frequently in Music Preparatory ($\overline{R}$ = 5.82) and Music Theory lessons ($\overline{R}$ = 5.76) and slightly less frequently in Solfeggio lessons ($\overline{R}$ = 7.38).

Consolidation and testing methods in distance learning

In our survey, the participating teachers also rated the frequency of the different consolidation and testing methods on a six-point scale (1 – every lesson; 2 – every other lesson; 3 – twice or three times a month; 4 – once a month; 5 – less than once a month; and 6 – never).

Table 7

Comparison of the frequency of consolidation and testing methods across lessons

Consolidation and testing method	Music Preparatory $\overline{R}$	Music Theory $\overline{R}$	Solfeggio $\overline{R}$
Oral assessment during video conferences	4.00	3.96	3.67
Completing textbook exercises during video conferences	5.39	4.69	2.75
Completing textbook exercises – asynchronously	6.61	3.69	5.17
Completing worksheets during video conferences	7.06	5.58	4.67
Completing worksheets – asynchronously	6.11	5.23	6.83
Online interactive tools, quizzes, etc. (e.g., Quizlet, Kahoot!, Liveworksheets)	7.22	8.35	7.67
Online classrooms (used for quizzes, uploading work, assessment, feedback, etc.)	6.06	6.65	7.08
Creating mind maps as a consolidation method	7.11	8.08	7.67
Recordings (of rhythmic and melodic exercises, of singing, etc.)	4.44	5.81	5.67
Oral poster and PowerPoint presentations and/or presentations with other aids	8.28	8.31	8.83
Various group work products	7.83	8.65	8.83
Other	7.89	9.00	9.17
p	0.037	0.000	0.000
*χ*2	20.628	53.205	34.320

The results of the Friedman test indicate statistically significant differences in the frequency of consolidation methods across all three subjects (p = 0.037; p = 0.000; p = 0.000). Oral consolidation and testing, as well as completing textbook exercises during video conferences, emerged as the methods most often employed across all three subjects. In Music Preparatory lessons, the most frequently used method involved pupils producing recordings ($\overline{R}$ = 4.44), in Solfeggio lessons, consolidation and testing was undertaken mostly by completing textbook exercises during video conferences ($\overline{R}$ = 2.75), and in Music Theory lessons it was accomplished by the asynchronous completion of textbook exercises ($\overline{R}$ = 3.69).

Assessment methods in distance learning

In Slovenian primary music schools, the assessment process starts in Music Theory lessons. It is thus important to note that the lessons in Music Preparatory, which students attend prior to commencing Music Theory, are not assessed and therefore cannot be evaluated and included in the results presented below.

Table 8 presents the results of the Friedman test for different assessment methods by subject.

Table 8

Comparison of assessment methods across subjects

Assessment method	Music Theory $\overline{R}$	Solfeggio $\overline{R}$
Oral assessment during video conferences	3.79	3.98
By way of assessing student recordings (of rhythmic and melodic exercises, songs, etc.)	3,35	3,14
Written assignment via video conference	2.51	2.90
Submitted written assignments	3.03	2.90
Other	2.32	2.07
p	0.000	0.000
$\chi 2$	34.627	24.679

The usage frequency of assessment methods in distance learning shows statistically significant differences in the values for Music Theory (p = 0.000) and Solfeggio lessons (p = 0.000). The most frequent method in Music Theory ($\overline{R}$ = 3.79) and Solfeggio lessons ($\overline{R}$ = 3.98) was oral assessment via video conference. Finally, the method least used by teachers was assessment by way of written assignments via video conferences (f% = 2.51; f% = 2.90).

Discussion

The objective of this study was to investigate music teachers' self-assessment of ICT competence. In the sample studied, those teaching subjects that are taught in groups at primary music schools in Slovenia reported no difficulty using most of the tools and resources listed in our questionnaire. They were most proficient with videoconferencing tools and least skilled at making their own videos, although most reported no major problems. In their study of Slovenian primary and secondary school teachers (n = 7,328), Rupnik Vec et al. (2020) came to similar conclusions. Two-thirds of the teachers they surveyed reported that they could, albeit with difficulty, make independent use of all of the digital tools and resources suggested by the researchers. The teachers were most confident about creating exercises and activities for independent learning by pupils and about the use of videoconferencing tools, and least confident about preparing explanatory videos and recording and sharing video lectures. Moreover, a study of the distance learning experience of Slovenian primary music school teachers during the Covid-19 pandemic (Boham Adam & Metljak, 2021) revealed that half of the surveyed teachers experienced difficulties using ICT tools, mostly linked to the achievement of learning objectives, while a smaller proportion experienced technical problems with ICT use and difficulty communicating with pupils. A few of the teachers indicated other problems, such as pupil unresponsiveness and inexperience or lack of skills in the effective use of ICT (in particular, online classroom platforms, software, and video and audio recordings). In a study by Svalina and Ristivojević (2022), Croatian and Serbian music school teachers rated their work with electronic devices as successful, but pointed out the extra work and preparation that was needed when working remotely. Other research, e.g., Begić et al. (2022), has highlighted the very high self-assessment of teachers' competencies for teaching music at a distance and the great readiness in the dimension of self-efficacy in using computer and the internet (Kibici & Sarıkaya, 2021).

Given the specific features of music teaching, we also aimed to explore the extent to which teachers could integrate various music activities into their distance learning and teaching. In Music Preparatory lessons, these activities most often included listening, while in Music Theory and Solfeggio classes, teachers mostly resorted to music theory and form instruction. The least used activity in all three subjects was music creation. Given the pandemic situation, we assume that creative activities were the most challenging to implement in a remote learning and teaching environment. In this respect, we sought to establish whether the teachers who self-assessed their ICT competences highly

were more likely to use music creation in their distance teaching. In most cases, analysis of the integration of various music activities in distance learning and teaching yielded no differences. Of the seven competences investigated, a statistically significant difference was found only for competence in preparing remote evaluation and assessment activities. Similar research by Zadnik (2021) showed that teachers of Music Theory and Solfeggio, as well as students enrolled in an undergraduate programme in Music Pedagogy (i.e., future music teachers), used ICT tools and resources most frequently for listening to music and least frequently for music creation. The author concluded that the students were more likely than the teachers to use existing online videos. Moreover, the students more frequently created their own didactic recordings, which they posted online. The study also revealed an uneven distribution of music activities in lessons given by the teachers: creation was present significantly less than for other activities. The author suggests the reason for this may lie in the teachers' preference for musical notation as the top distance learning and teaching technique.

All of these findings align with the present research. The Music Theory and Solfeggio teachers in our research most often used musical notation, too, whereas the techniques most frequently used in Music Preparatory lessons were reinforcement of the song, call-and-response and conversation. Given the unavailability of didactic resources at home – most pupils did not have Orff instruments – and the challenges of music-making in groups, hardly any of the teachers surveyed used Orff instruments, which again aligns with previous research by Biasutti et al. (2022). However, we also found that teachers were able to adapt and that they used improvised instruments instead.

Research by Kisiel (2020), and Svalina and Ristojević (2022) established that, compared to classroom instruction, distance learning offered fewer opportunities for demonstration, which is indispensable for the correct handling of instruments, body posture while playing and playing technique. Bohak Adam and Metljak (2021) also discovered that, when instructing students in musical instruments, teachers found that difficulties emerged primarily during group lessons and performances. These difficulties were often attributable to unstable sound, which presented challenges in many other aspects as well. In the aforementioned study by Svalina and Ristojević (2022), Solfeggio teachers emphasised the absence of direct contact with students and low-grade audio and video transmission caused by unreliable internet connections, leading to untimely feedback, a loss of control over intonation in singing, and specific rhythm and melody issues. All of these challenges are associated with synchronous teaching, which was the delivery method most frequently used by our

respondents, and with frontal instruction, which was their most frequently employed teaching strategy.

The aforementioned study by Rupnik Vec et al. (2020) found that non-music primary and secondary schools in Slovenia more frequently adopted a blended approach of synchronous and asynchronous music teaching. In addition to instructing pupils via video conferences, teachers also provided written instruction for independent homework. In the US context, Shaw and Mayo (2022) similarly found that most of the music and non-music teachers in their study (n = 1,368) used a blended teaching approach during the pandemic. In this regard, we assume that asynchronous teaching may have been more challenging for younger pupils and their parents, whereas synchronous lessons merely required parents to connect through a computer application.

Since assessment is key to a quality learning process, we were also interested in how teachers consolidated, tested and assessed pupils' abilities, skills and knowledge during distance learning sessions. The responses to our questionnaire showed that, in all three surveyed subjects, teachers mostly used video conferences, during which pupils were evaluated orally or required to complete textbook exercises. In addition to consolidation and testing, teachers also had to assess their students' knowledge. In Music Theory and Solfeggio lessons (the lessons in Music Preparatory were not assessed), they mostly resorted to oral assessment, followed by recorded rhythmic and melodic exercises, songs and other activities. Our findings align with those from the study Rupnik Vec et al. (2020), which identified students' oral responses to questions via video conferences as the most frequently employed assessment method. Research has also revealed that assessing the learning process presented a significant challenge *per se*. Croatian and Serbian music school teachers of theoretical subjects in the Svalina and Ristojević (2022) study, for instance, highlighted the difficulty of conducting credible testing and assessment of knowledge and/or skills, which they identify as the greatest obstacle to distance learning, when considering all of the extra work required. Let us conclude with the Deloy (2022) survey of US music theory teachers, who experienced difficulty in evaluating pupil performance (singing songs, intervals and chords) during synchronous instruction. The issues were attributed to poor internet connection, questionable privacy and background distraction during assessment.

Conclusions

The Covid-19 pandemic presented unprecedented challenges across multiple aspects of our lives, impacting stakeholders in education both in Slovenia and around the world. While many music schools had been integrating online teaching methods even prior to the pandemic, primarily with the aim of broadening their appeal (Biasutti et al., 2022), the sudden school closure after the outbreak necessitated an urgent and immediate transition to remote learning. The present study examined teachers' pedagogic and didactic practices during this period and assessed teachers' competence in distance learning. The results are encouraging, especially in areas related to teachers' use of activities and methods. Despite the difficulty of integrating certain music activities, such as creation and performance, into online teaching and learning, teachers did not shy away from these, instead including them less often. Another interesting observation is that teachers managed to circumvent certain problems, such as the unavailability of Orff instruments, by including activities that utilised improvised instruments that students could make at home. Furthermore, the experience of remote work during the pandemic also contributed to the development of various other aspects, e.g., the exchange of good practice on platforms (e.g., razlagamo.si, 2023), and advances in the ability, knowledge and use of ICT tools and resources among music teachers (Bohak Adam & Metljak, 2021).

The limitations of the present study include the limited sample size, as only public music schools in Slovenia were included in the survey; adding respondents from private music institutions would have produced additional insight into remote learning and teaching approaches. Furthermore, the study focused on the use of a narrowly defined list of ICT tools and resources; this aspect could have been addressed in more detail by examining the music teachers' digital literacy in general. Since the study spanned only the period of distance learning, we cannot infer the extent to which certain music activities and methods were represented in the classroom in non-online settings. However, the research findings can contribute to a better understanding of the importance of activity-oriented music education. We firmly believe that the foundation of music teaching and learning lies in musical experience. Despite the constant advances in technology, bringing about improved sound quality, reduced time lags and ample opportunities for distance group music-making, interpersonal contact will remain indispensable to the full appreciation and enjoyment of, and engagement in music.

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