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(NON) SINGING DURING THE COVID-19 PANDEMIC - OPINIONS AND EMOTIONAL EXPERIENCE OF STUDENTS FROM 5TH TO 8TH GRADE OF PRIMARY SCHOOLS IN THE REPUBLIC OF CROATIA

Abstract: Singing is an important factor in the teaching of Music Culture and, in addition to the compulsory content, an activity that is carried out the most. The scientific literature confirms that singing sparks positive emotional reactions in students to a great extent. With the proclamation of the COVID-19 pandemic in March 2020, almost all singing activities have been suspended for a long time.
The aim of the study was to determine whether there is a difference in the perception of dissatisfaction with the suspension of singing depending on whether the students were actively and intensively engaged in singing compared to those who were not engaged in the activity or were only slightly involved in it prior to the pandemic.
The first problem was to research whether there was a difference in personal dissatisfaction (happiness) and the perception of dissatisfaction with the suspension of singing depending on whether the students were actively singing before the pandemic or not and whether they continued singing online during the pandemic or if they have completely stopped active singing. Hypotheses have been confirmed that students who are members of choirs and/or ensembles feel more intense lack and personal dissatisfaction with the suspension of musical activities during the pandemic than those who actively sang only in Music Culture classes as well as that students who played music online are more satisfied and show more positive emotions compared to those who have stopped playing

music. Another problem was to research whether there is a difference in the perception of singing in-person and singing in a virtual environment. It has been confirmed that students who have experienced both in-person singing and singing online believe that singing in-person has a greater effect than singing in a virtual environment. The results confirm that singing has a positive effect on the singer and that restricting singing intensifies personal dissatisfaction.

Key words: *COVID 19, remote learning, personal satisfaction, singing, group music making*

INTRODUCTION

Singing is an important activity in the general education in Music Culture lessons, and together with the obligatory contents it is the one that is carried out most. Through all levels of primary education in the Music Culture classes, it is customary to involve all students in the singing activity, which gives the activity a wide representation according to age, level of education, gender and religion of students.

Expressing through singing is a human immanent need, so it is not surprising when it is pointed out that "Singing is the most elementary, most spontaneous and most natural way of human musical behavior, as it is an activity that has not only always been present in music teaching but it has also left an important stamp during a great part of history"(Rojko, 2012, p. 54).

Acknowledging that "one can [sing] without knowing how to read notes, without a certain musical education and without modern technique and technology" (Vidulin-Orbanić and Terzić, 2011, p. 142), singing is an activity that, with the compulsory listening to music according to the Curriculum for Music Arts and Music Culture (Ministry of Science and Education, MZO, 2019), is implemented the most in almost all levels of the primary school curriculum.

The singing activity takes place in groups primarily, as a part of classroom instruction or as an extracurricular singing activity in an ensemble or a choir. Furthermore, singing is an activity that is carried out as a part of art education in the educational programs of music schools, either through the teaching of *solfeggio* or compulsory group music making (choir). Singing of young people in their free time is an area of research in numerous studies, so it is possible to state that singing in various forms in general, is one of the very frequent and important spiritual needs for creativity and expression and its importance is recognized in Croatian educational curriculum as well as curricula worldwide. Thus, the author Radočaj-Jerković (2017b, p. 15) points out that "singing as an expression of personal, spontaneous musical expression is a phenomenon characteristic of almost all world cultures […]. Moreover, the importance of

the influence that songs and singing have in childhood, but also in the (non) realization of the overall musical development of the child, is ubiquitous".

In the Music Art and Music Culture Curriculum (MZO, 2019, p. 11) within domain B, the emphasis is placed on the encounter of students with music, i.e. on musical activities (singing, playing, movements with music, etc.). Verbal information should come from the music itself. Learning and teaching need to be tailored according to students' interests and abilities, while learning outcomes should be linked and complemented to them. It is precisely this approach that "enabled better teaching of activities by developing singing skills, and less by acquiring specific songs" (Radočaj-Jerković, 2017b, p. 17). For this reason, the teacher autonomously selects songs and methodical procedures that will help students in the realization of intonationally precise and expressive singing. In order to achieve the set outcomes, the teacher has the role of a present mediator and directly participates in the implementation of activities through "active music making". "In the act of singing (any good and appropriate song) on the spot (in the teacher's presence) music is experienced and learned, enriches the student's emotional world and sharpens his artistic sensibility" (Rojko, 2005, p. 13). The curriculum points to a strong connection with other fields of the art, as well as numerous correlations with other subjects, areas and interdisciplinary topics that are possible and desirable.

Some of the goals of music teaching are: to encourage the development of musical abilities of all students in accordance with their individual abilities, to enable positive socio-emotional development of all students, to encourage students to actively engage in music and participate in cultural life of the community, and to raise awareness of the values of cultural heritage (cf. GKGU Curriculum, MZO, 2019, p. 8). Therefore, an important part of the process of learning and teaching music relates to elective and optional classes and extracurricular and after-school activities (choir, bands, orchestra, dance groups, etc.) in which students expand the acquired knowledge, skills and attitudes and at the same time systematically develop their interests and achieve quality personal and artistic growth and development (ibid. 2019, p. 11).

Students who are extremely fond of musical activities most often show interest in additional musical activities offered within the school (Proleta and Svalina, 2011). Nevertheless, the majority of students, although they do not attend additional musical activities, like to participate in them during the Music Culture classes. Thus, it was confirmed that singing is the most common activity. In the Radočaj-Jerković (2017a) survey, 80% of the surveyed students pointed out that they like to sing and took a positive attitude towards singing in the classroom. It was pointed out that singing is their favorite activity in music teaching, and most of them would like to further improve it. Students who expressed a more negative attitude towards singing, 20% of them, refer to inappropriate songs for their age, insecurity in public individual performance

and insecurity in their own singing abilities, thus they give preference to other activities. Furthermore, the results of the research indicate that interest progressively decreases during the transition of students to higher grades.

Choral singing at school is one of the most accessible musical extracurricular activities involving students who show interest in additional musical activities that are not held as a part of the subject Music Culture (Radočaj-Jerković et al., 2018). For their interest, motivation is vital and it is increased by socializing with each other, by the possibility of making music together and performing, as well as traveling together (Vidulin, 2016), therefore their personal well-being is improved.

Musical abilities, like all other abilities, develop during lifetime, so singing is a skill that can be learned and practiced (Šulentić Begić, 2010). By encouraging students to strengthen their own competencies in the field of singing, students can adopt positive needs and habits and thus significantly contribute to a positive effect on their personal health and well-being. A review of literature on research in the field of singing related to health and well-being shows that these topics are studied more during recent period of time. Gick (2011) and Clift et al. (2010) claim that research in this area is limited in scope and methodology. The same authors raise an issue with defining terms singing experience and singer. Nevertheless, existing qualitative research (Balsnes, 2018; Clift, 2012; Clift et al., 2010; Cohen, 2009) suggests that singing in general can be beneficial for physical health as well as psychological and social well-being, moreover singing has prominent benefits for singers with specific health conditions (Grape et al., 2008; Schladt, 2017; Vickhoff et al., 2013; Williams, 2018). Also, research indicates an improvement in the psychophysical condition of the individual (Gabrielsson, 2018; Stensaeth, 2018; Theorell, 2014) and the development of musical skills and sharpening of artistic sensibility (Šulentić Begić and Birtić, 2012). Consequently, all of the above speaks in favor of the positive aspects of singing activities in all age groups, especially young people.

With the proclamation of the COVID-19 pandemic in March 2020, a new, previously unknown, and unusual situation occurred for all of humanity, both globally and locally. Restrictions "stay at home / be responsible" with a forced policy of physical distancing have led to a number of disturbances in the lives of individuals and communities. In accordance with the declared requirements, and with measures of social distancing, almost all singing activities in music classes as well as in ensembles and choirs in general education, but also to a significant extent in music schools, were suspended for a long period of time or done much less frequently and in very limited conditions and circumstances.

Social communication has moved in the virtual domain and thus the pandemic has changed the ways of teaching and the way individuals communicate virtually within society. Forced restriction of movement and in-person communication (lockdown) led to intensive access to all network platforms, including

Zoom, Teams, Yammer and many other video communication platforms (chat). In the need of an urgent response to pandemic circumstances, teachers found ways to adapt and sought new methodological and technical solutions. Some of them practiced singing activity by using video communication platforms. However, such platforms were not ready to respond to the needs of teaching music and singing in-person due to the problem of sound synchronization, which makes group music making especially difficult or almost impossible for a larger group of participants (Grushka et al., 2021).

According to the all social circumstances explained, social and educational adjustment and the results of the mentioned scientific research that singing to a greater extent provokes positive emotional reactions in students, the question arises: What reaction did such a suspension of singing activities cause in students as key stakeholders in the educational process?

PRIMARY GOAL AND RESEARCH PROBLEMS

Encouraged by this problem and with the assumption that singing and performing music enriches the student's emotional world and provides potential for well-being (Clift and Morrison, 2011; Welch et al., 2008, 2010 and 2021), a study was conducted and its primary goal was to determine whether there is a difference in the perception of dissatisfaction with the suspension of singing depending on whether the students were actively and intensively engaged in singing compared to those who were not engaged in the activity or were only slightly involved in it prior to the pandemic.

The following problems and hypotheses arose from the primary goal:

1. 1. Is there a difference in personal dissatisfaction (happiness) and the perception of dissatisfaction with the suspension of singing depending on whether students were actively singing before the pandemic or not and whether they continued singing online during the pandemic or completely stopped active singing?

   H1 students who are members of choirs and/or ensembles will feel more intense lack and personal dissatisfaction with the suspension of musical activities during the COVID-19 pandemic than those who were actively involved in singing only in school lessons.

   H2 students who played music in online during the pandemic will be more satisfied and will show more positive emotions compared to those who stopped making music.

2. Is there a difference in the perception of singing in-person and singing online?

   H3 students who have experienced both in-person singing and singing online will find that singing in-person has a greater effect than singing in a virtual environment.

METHODOLOGY

A quantitative research method was applied in the study. To test the formulated hypotheses, difference between the groups was used to test the set (t-test and simple analysis of variance).

The research was conducted on a sample of 1059 respondents (N = 1059), students of fifth, sixth, seventh and eighth grades of primary schools from different parts of the Republic of Croatia

A questionnaire on singing and suspension of singing during the pandemic was sent digitally to the respondents (students) through their Music Culture teachers. With regard to age and code of ethics, students were guaranteed anonymity so that identification data (name, surname, OIB, name of the school) were not collected and the school and parental consent were granted prior to data collection.

The questionnaire contained a total of twenty questions arranged in three parts. The first part gathered general demographic data (gender, year of birth, grade, county) while the second part gathered data on students' singing habits before the pandemic, personal general satisfaction and personal opinion, and satisfaction achieved during singing as well as the level of satisfaction the student feels during the suspension of singing. The third part of the questionnaire included data from students who sang in-person under special conditions (wearing a mask, reduced number of students in the classroom, quiet singing, etc.) and students who sang in a virtual environment (N = 273), and examined whether there is the difference in the perception of singing in-person and singing in a virtual environment.

Respondents were asked to enter or select the required data in questions 1 to 14 and in questions 15 to 20, each of which contained a set of statements, to indicate the extent to which they agreed with a particular statement, using a 5-point Likert-type scale (1 - I do not agree at all, 2 - I do not agree, 3 - I do not agree or disagree, 4 - I agree, 5 - I completely agree).

Also, the Kolmogor Smirnov test was used to test the normality of the distribution and the t-test to test the significance of the difference between the two samples.

In addition to a tabular presentation and a detailed sample description, information on singing and descriptive characteristics of continuous variables are presented.

Table 1 contains data on a convenience research sample (N = 1059).

Table 1. *Research sample*

	%
Gender	
male	45,2
female	54,8
Age (year of birth)	
11	5,9
12	27,3
13	25,5
14	23,1
15	17,8
16	0,4
17	0,1
Class	
5.	26,0
6.	27,1
7.	24,1
8.	22,9
County	
Varaždinska	28,1
Osječko-baranjska	16,9
Splitsko-dalmatinska	12,0
Primorsko-goranska	11,2
Grad Zagreb	6,4
Dubrovačko-neretvanska	6,1
Šibensko-kninska	4,7
Istarska	4,2
Zagrebačka	3,1
Međimurska	2,5
Sisačko-moslavačka	2,2
Virovitičko-podravska	1,2
Koprivničko-križevačka	1,1
Krapinsko-zagorska	0,1

The results in Table 1 show that there were slightly more female students (54.8%) than male students (45.2%) in the sample, mostly aged 12 to 14 years (75.9%), about a quarter in each of four upper grades of elementary school.

The representation by counties was diverse, due to the adverse circumstances resulting from the restrictions caused by the pandemic.

Table 2. *Singing habits*

	%
Singing	
in MC lessons only	55,1
school choir	22,8
music school choir	7,9
after-school choir	7,2
ensemble/band at school	2,0
after-school ensemble/band	3,6
does not sing	13,8
Years of singing in a choir or music group or extracurricular or after-school activities	
I do not sing and I have never sung	42,2
I used to sing, but I stopped	19,6
1 year	6,5
2 years	6,9
3 years	6,4
4 years	5,9
5 or more years	12,5
Singing in MC lessons during remote learning	
face-to-face during video call	12,9
recorded singing and sent it to the teacher	24,1
did not sing	63,0
Singing during remote learning in group music making	
face-to-face during video call	9,1
recorded singing and sent it to the teacher	18,3
did not sing	72,6
Recorded a song as a virtual class/choir	
Yes	11,4
No	88,6
Frequency of singing prior to COVID-19	
I do not sing	12,7
in MC lessons only	54,2
2 lessons	16,2
3 lessons	7,4

Table 2. *(continued) Singing habits*

	%
4 lessons	4,8
5 or more lessons	4,7
Frequency of singing during COVID-19	
I do not sing	24,6
in MC lessons only	53,2
2 lessons	12,1
3 lessons	4,5
4 lessons	2,2
5 or more lessons	3,4

The singing habits shown in Table 2 indicate that more than half of the students sing only in the Music Culture class and that about one quarter of them sings in the school choir. About a third of students sing in a choir or music group, mostly for 5 or more years (12.9%). Those who sang and who sing, in 16.2% and 12.1% of cases, respectively, do so for 2 school hours. Both before and during the COVID-19 pandemic, about half of the students sang only in the Music Culture classes, about 13% did not sing before, and during the pandemic almost twice as many (24.6%), while students who sang during the pandemic did so less often.

As for singing during remote learning, in the Music Culture class, in 63% of cases students did not sing, a quarter sang and sent recordings, and about 13% sang during video calls. In the case of remote learning in group music making (choir), the share of students who did not sing is even higher since almost three quarters of students declared that they did not sing and only 9.1% sang during video calls. Finally, just over a dozen students recorded the song as a virtual class/choir during remote learning.

The following research results show the descriptive characteristics of continuous variables related to the feeling of happiness, life satisfaction, attitude towards the suspension of singing and the relationship between singing and personal satisfaction (Table 3).

Table 3. *Descriptive characteristics of continuous variables*

	M	C	SD	Z	min	max	Skew.	Kurt.
15a I am a happy person.	4,1	4,0	0,94	0,25**	1	5	-1,23	1,48
15b When I compare myself to my peers I am less happy.	2,2	2,0	1,15	0,22**	1	5	0,67	-0,41
15c Some people are generally very happy no matter what happens to them in life. I am such a person.	3,3	3,0	1,19	0,18**	1	5	-0,34	-0,68
15d Some people are generally not too happy. While they are not sad, they never look as happy as they could be. I am such a person.	2,2	2,0	1,12	0,21**	1	5	0,67	-0,33
15e I am satisfied with my life as a whole.	4,1	4,0	1,03	0,25**	1	5	-1,18	1,02
16a I am dissatisfied with the suspension of singing during the pandemic.	3,1	3,0	1,27	0,20**	1	5	-0,23	-0,86
16b I really miss in-person singing in Music Culture lessons.	3,3	3,0	1,28	0,18**	1	5	-0,37	-0,80
16c Without singing I feel less happy.	3,0	3,0	1,25	0,17**	1	5	-0,04	-0,94
16d During the suspension of singing I engage in new different activities.	3,3	3,0	1,26	0,20**	1	5	-0,38	-0,81
16e Without singing it is harder for me to remove negative feelings.	2,9	3,0	1,33	0,15**	1	5	0,06	-1,14
16f I would rather sing online than not sing at all.	2,9	3,0	1,39	0,16**	1	5	-0,01	-1,26
17 A combination of singing.	2,0	2,0	0,74	0,23**	1	3	-0,06	-1,18
18a Singing in-person makes me a better person.	3,8	4,0	1,17	0,25**	1	5	-0,88	-0,03
18b I like to sing in-person.	3,9	4,0	1,12	0,25**	1	5	-0,90	0,01
18c Singing in-person relaxes me.	3,7	4,0	1,19	0,24**	1	5	-0,68	-0,42
18d After singing in-person I feel happier and more positive.	3,7	4,0	1,16	0,24**	1	5	-0,72	-0,32
18e Singing in-person helps me remove negative feelings.	3,6	4,0	1,20	0,19**	1	5	-0,45	-0,69

Table 3. *(continued) Descriptive characteristics of continuous variables*

	M	C	SD	Z	min	max	Skew.	Kurt.
18f Due to singing in-person I feel more optimistic about the future.	3,4	3,0	1,14	0,19**	1	5	-0,40	-0,48
18g I feel that singing in-person is important to me.	3,4	4,0	1,24	0,20**	1	5	-0,48	-0,67
18h Singing in-person evokes a feeling of discomfort in me.	2,4	2,0	1,26	0,22**	1	5	0,59	-0,66
19a Singing online makes me a happier person.	2,6	3,0	1,12	0,20**	1	5	0,10	-0,71
19b I like singing online.	2,6	3,0	1,15	0,19**	1	5	0,31	-0,68
19c Singing online relaxes me.	2,5	2,0	1,12	0,20**	1	5	0,38	-0,55
19d After singing online I feel happier and more positive.	2,6	3,0	1,10	0,18**	1	5	0,19	-0,63
19e Singing online helps me remove negative feelings.	2,6	3,0	1,20	0,17**	1	5	0,26	-0,78
19f Due to singing online I feel more optimistic about the future.	2,6	3,0	1,12	0,18**	1	5	0,29	-0,57
19g I feel that singing online is important to me.	2,5	3,0	1,18	0,18**	1	5	0,35	-0,69
19h Singing online evokes a feeling of discomfort in me.	2,8	3,0	1,31	0,17**	1	5	0,13	-1,11
20a I really miss in-person singing in a choir/ensemble.	3,7	4,0	1,39	0,22**	1	5	-0,74	-0.71
20b I miss singing in a choir more than singing in a Music Culture class.	3,2	3,0	1,39	0,17**	1	5	-0,21	-1,23
20c I miss live performances.	3,7	4,0	1,41	0,23**	1	5	-0,68	-0,83

LEGEND. M - arithmetic mean, C - central value, SD - standard deviation, Z - value of Kolmogorov Smirnov test when testing normality of distribution, min - lowest result, max - highest result, Skew - asymmetry of distribution, Kurt - flatness of distribution; ** - statistically significant with 1% risk

The results in Table 3 primarily show that all continuous variables have a distribution of results statistically significantly different from the normal distribution. However, all variables have asymmetry and flattening within the normal range, i.e. less than 3 and 10 (Kline, 1998), so the use of parametric statistical procedures is still justified given there is a sufficiently large number of respondents.

Additionally, in terms of the happiness scale, the results generally show that students perceive themselves as happy. Statements that talk about happiness score value around 4 (I agree), and claims that talk about a lack of happiness score value around 2 (I disagree).

Statements related to dissatisfaction with singing generally score an average of about 3 (neither agree nor disagree), and those of dissatisfaction with singing in a choir around 4 (agree).
Singing in-person has ratings that are also close to rating 4 (I agree), while remote singing has ratings close to 3 (neither agree nor disagree).

RESULTS AND DISCUSSION

PERSONAL DISSATISFACTION (HAPPINESS) AND PERCEPTION OF DISSATISFACTION WITH SUSPENSION OF SINGING

This study researched whether there is a difference in the perception of dissatisfaction with the suspension of singing in students depending on whether they practice at all and how much they practice singing. In addition, for the purposes of the research, it was reviewed whether there is a difference in how happy the students are in general depending on whether they sing or not sing at all (Table 4).

Table 4.   *T-test results in difference testing of the perception of dissatisfaction with the suspension of singing depending on whether the students sang or did not sing at all prior to the pandemic. (df = 1057)*

	t	Mnp	Mp
15a I am a happy person.	-2,23*	4,0	4,2
15b When I compare myself to my peers I am less happy.	0,28	2,3	2,2
15c Some people are generally very happy no matter what happens to them in life. I am such a person.	-1,05	3,2	3,3
15d Some people are generally not too happy. While they are not sad, they never look as happy as they could be. I am such a person.	0,84	2,3	2,2
15e I am satisfied with my life as a whole.	-2,35*	3,9	4,1
16a I am dissatisfied with the suspension of singing during the pandemic.	-6,08**	2,5	3,2
16b I really miss in-person singing in Music Culture lessons.	-9,09**	2,4	3,4
16c Without singing I feel less happy.	-7,02**	2,3	3,1
16d During the suspension of singing I engage in new different activities.	-3,93**	2,9	3,4
16e Without singing it is harder for me to remove negative feelings.	-4,08**	2,5	2,9
16f I would rather sing online than not sing at all.	-4,17**	2,4	3,0

LEGEND. t - value when testing the difference between two arithmetic means, Mnp - arithmetic mean for those who do not sing at all, Mp arithmetic mean for those who sing, * - statistically significant with 5%, ** - statistically significant with 1% risk

The results in Table 4 show that there is a statistically significant difference between the two statements related to happiness, namely: I am a happy person (t (1057) = -2.23; p <0.05) and I am satisfied with my life as a whole t (1057) = -2.35; p <0.05) and that in both statements the result is higher for students who sing (M = 4.2 and M = 4.1) compared to those who do not sing at all (M = 4.0 and M = 3.9).

Regarding dissatisfaction with the suspension of in-person singing during the pandemic, there are statistically significant differences in all statements in this study. The result is higher for students who sing compared to those who do not sing at all for all statements. Consequently, those who sing more think that they are dissatisfied with the suspension of in-person singing during the pandemic, that they miss in-person singing in Music Culture classes, that without singing they feel less happy, that during the suspension of singing they engage in new, different activities, that without singing it is harder for them to remove negative feelings and that they would rather sing in a virtual environment than not sing at all.

This confirmed hypothesis (H1) related to dissatisfaction with singing, which is higher in those who sang before the pandemic than in those who did not. The results are not surprising since it is expected that students, who voluntarily engage in singing activities in both music lessons and independently selected extracurricular and after-school group music making activities are motivated to sing and are accustomed to spending some time in activities associated with positive emotions. When this form of pleasure is denied or limited, they feel deprived, less satisfied, and try to find new sources of positive emotions.

As for happiness, although this was not set in the hypotheses, it has been shown that on some variables there is increased personal happiness in those who sing compared to those who do not sing at all.

The results obtained coincide with the results of previous research (Clift and Morrison, 2011; Clift et al., 2017) in which the impact of group singing on the personal well-being of singers during a seven month period was studied. The results showed that participants experienced a reduction in personal dissatisfaction and stress and showed a significant increase in personal well-being, personal satisfaction and optimism. A similar study was conducted in Australia (Williams et al., 2018) in which choral singers with chronic mental disorders participated. The study also showed a significant increase in optimism, personal well-being and personal satisfaction already in the first year of singing in the choir. Although the subjects of these studies were middle-aged and mature, and the subjects of this study are younger, the comparison of the results suggests that singing and group singing has a significant positive impact on the satisfaction and personal well-being of singers. It is this conclusion that opens the possibility for further research that would include singers of different ages

where the intensity of personal satisfaction and well-being in relation to age would be examined.

Moreover, the results confirm that students mostly feel the positive impact of singing and that the greater the time intensity they spend engaging in this activity, the greater is the intensity of dissatisfaction with its suspension, i.e. a certain restriction due to the pandemic. The intensity of personal dissatisfaction with regard to the age of the singer should be further studied.

As the main problem of the research was to inquire whether there are differences between students who sing only in the Music Culture classes and those who sing elsewhere, students who do not sing at all were excluded for further examination and the same differences were checked as in Table 4 for these two groups of respondents.

Table 5. *T-test results when testing the difference in feelings of happiness and dissatisfaction with the suspension of singing depending on whether students sang only in the Music Culture classes or elsewhere before the pandemic (df = 911)*

	t	Mgk	Mp
15a I am a happy person.	1,60	4,2	4,1
15b When I compare myself to my peers I am less happy.	-1,86	2,2	2,3
15c Some people are generally very happy no matter what happens to them in life. I am such a person.	-0,12	3,3	3,4
15d Some people are generally not too happy. While they are not sad, they never look as happy as they could be. I am such a person.	-0.22	2,2	2,2
15e I am satisfied with my life as a whole.	1,50	4,2	4,1
16a I am dissatisfied with the suspension of singing during the pandemic.	-8,25**	2,9	3,6
16b I really miss in-person singing in Music Culture lessons.	-6,24**	3,2	3,8
16c Without singing I feel less happy.	-7,49**	2,8	3,5
16d During the suspension of singing I engage in new different activities.	-0,69	3,3	3,4
16e Without singing it is harder for me to remove negative feelings.	-3,74**	2,8	3,2
16f I would rather sing online than not sing at all.	-3,33**	2,8	3,2

LEGEND. t - value when testing the difference between two arithmetic means, Mgk - arithmetic mean for those who sing only in Music Culture class, Mp arithmetic mean for those who sing elsewhere, ** - statistically significant with 1% risk

The results in Table 5 show that there is no difference in the feeling of happiness, but there is in almost all statements related to dissatisfaction with the suspension of in-person singing during the pandemic (only not with the

statement "During the suspension of singing I engage in new, different activities"). In all cases, the mean values are higher for those students who sing elsewhere, and not only in the Music Culture classes, i.e. for those who sing elsewhere, the dissatisfaction is greater. Therefore, those who sing elsewhere, and not only in the Music Culture classes, think that they are more dissatisfied with the suspension of in-person singing during the pandemic, that they miss in-person singing in the Music Culture classes a lot, that without singing they feel less happy, that it is harder for them to remove negative feelings without singing and that they would rather sing in a virtual environment than not sing at all.

This further confirmed hypothesis (H1) related to dissatisfaction with singing, which is higher among those who sing elsewhere, and not only in the Music Culture classes.

The results confirm that students lack in-person singing during the suspension of singing and live classes and that they consequently feel personal dissatisfaction, i.e. that singers who are more engaged in singing activity by suspending or restricting singing feel greater dissatisfaction, which consequently affects the decline of their personal happiness and personal satisfaction. Since certain respondents emphasized that they sing in non-school ensembles and/or choirs, it would be necessary to further research the intensity of personal dissatisfaction with regard to the age of the singer and the type of choir.

Finally, in the last part of this problem, it was assumed that students who practiced music online during the pandemic would show more positive emotions compared to those who stopped engaging in music. It was additionally checked what happened to the perceived dissatisfaction related to the absence of singing (Table 6).

Table 6. *T-test results when testing the difference in feelings of happiness and dissatisfaction depending on whether the students stopped or continued singing during the pandemic (df = 746)*

	t	Mp	Mnp
15a I am a happy person.	1,82	4,2	4,1
15b When I compare myself to my peers I am less happy.	1,40	2,3	2,2
15c Some people are generally very happy no matter what happens to them in life. I am such a person.	2,89**	3,5	3,2
15d Some people are generally not too happy. While they are not sad, they never look as happy as they could be. I am such a person.	0,11	2,2	2,2
15e I am satisfied with my life as a whole.	0,44	4,2	4,1

Table 6. *(continued) T-test results when testing the difference in feelings of happiness and dissatisfaction depending on whether the students stopped or continued singing during the pandemic (df = 746)*

	t	Mp	Mnp
16a I am dissatisfied with the suspension of singing during the pandemic.	3,67**	3,4	3,1
16b I really miss in-person singing in Music Culture lessons.	4,14**	3,8	3,4
16c Without singing I feel less happy.	3,46**	3,3	3,0
16d During the suspension of singing I engage in new different activities.	1,60	3,4	3,3
16e Without singing it is harder for me to remove negative feelings.	2,78**	3,2	2,9
16f I would rather sing online than not sing at all.	6,66**	3,4	2,7

LEGEND: t - value when testing the difference between two arithmetic means, Mp - arithmetic mean for those who continued to sing during the pandemic, Mnp - arithmetic mean for those who stopped singing in the pandemic, ** - statistically significant with 1% risk

The results in Table 6 provide information that students who continued to sing during the pandemic achieved a statistically significantly (t (746) = 2.89; p <0.01) higher score (M = 3.5) on the statement "Some people are very happy in general no matter what happens in their lives. I am such a person. "compared to those who did not continue to sing during the pandemic (M = 3.2).

When dissatisfied with the suspension of singing, there are several differences (I am dissatisfied with the suspension of in-person singing during the pandemic, I really miss singing in a Music Culture class, Without singing I feel less happy, Without singing it is harder to remove negative feelings and I would rather sing in a virtual environment than not sing at all between the two groups. In all statements, the group that continued to sing achieved higher results, i.e. those who sang during the pandemic are more dissatisfied with the suspension of in-person singing during the pandemic, that they missed live singing in Music Culture classes a lot, that without singing they felt less happy, that during the suspension of singing they engaged in new, different activities, that without singing it is harder for them to remove negative feelings and that they would rather sing in a virtual environment than not sing at all.

This confirmed only a small part of hypothesis (H2) related to the feeling of happiness in those who continued singing during the pandemic compared to those who stopped singing. Additionally, the results showed that those who continued to sing during the pandemic had greater feeling of dissatisfaction about the suspension of singing.

Students who sang during the pandemic did so under certain conditions and restrictions such as a small number of students in the class, wearing a mask, quiet singing, maintaining personal distance (see: Decision on how to teach in primary

and secondary schools and universities and performing work in pre-school education institutions in the conditions of the COVID-19 epidemic). Singing in restrictive conditions significantly differs from the usual way in which singing activities take place, which students did not accept positively in general.

DIFFERENCE IN THE PERCEPTION OF IN-PERSON SINGING AND SINGING ONLINE

Additionally, this study examined whether there is a difference in the perception of in-person singing and singing online. In this part, only the data of those students who sang in-person and sang during the pandemic in a virtual environment were processed (N = 273). The results were processed by t-test for dependent measurements to compare the difference in singing online and singing in-person, therefore to test the hypothesis (H3) whether students who have experienced both singing in-person and singing in a virtual environment consider that singing in-person has a greater effect than singing online.

The results are shown in *Table 7*.

Table 7. *T-test results when testing the difference in the perception of in-person singing and singing online (df =272)*

	t	Mu	Mo
...makes me a happier person	13,63**	3,8	2,6
I love...	14,26**	3,9	2,6
...relaxes me	13,51**	3,7	2,5
After ... I feel happier and more positive	13,82**	3,7	2,6
…it helps me remove negative feelings	11,35**	3,6	2,6
Because of it...I feel optimistic about the future	10,56**	3,4	2,6
I feel that it is...important to me	10,88**	3,4	2,5
...it makes me feel uneasy	-3,92**	2,4	2,8

LEGEND. t - value when testing the difference between two arithmetic means, Mu - arithmetic mean for in-person singing, Mo - arithmetic mean for those who sing online, ** - statistically significant with 1% risk

As expected, based on the stated hypothesis (H3), all the differences between singing in-person and singing online are statistically significant. In all statements, the mean value for singing in-person is statistically significantly higher than the mean value for singing online, except for the statement "...makes me feel uncomfortable" which is negative and has a higher result when singing in a virtual environment. In other words, singing in-person makes students happier, they love it more, it is more important to them, it relaxes them more, it removes negative feelings more, they feel happier and more positive because of it and they are more optimistic about the future.

Multimedia technologies enable new access to teaching content. "The media environment for learning or education has been enriched in the last fifteen years by numerous educational projects on the largest communication network that mankind has ever created - the Internet" (Matasić and Dumić, 2012, p. 144). However, taking into account the specifics of music teaching and the development and readiness of remote learning technology during the pandemic, the existing platforms were not ready nor could they properly synchronize the sound that could fully meet the needs of music teaching, i.e. group music making activities. Nevertheless, the teachers of Music Culture made a step forward and according to the answers of the surveyed students, it is evident that in a way they tried to satisfy the need of students for singing. According to the students' statements about the way music and singing activities were taught and the technologies used, it is evident that some teachers adapted in the ways of setting homework tasks (for homework to learn a song or sing a familiar one, sing a song of your choice every day, make a video or audio recording of their own singing, singing to music on YouTube or similar platform) or tried to sing with students directly in a virtual environment using the platforms Teams, Zoom, Meet, etc., more often in small groups. This is supported by the separate statements of students: "Yes, I sang at home", "we sang using the Teams application", "we used Zoom", "I sang only when the teacher asked us to sing something at home", "I sing alone at "home", "we gave up because there was microphony", "As far as I remember we did not sing", "Tasks we received through them [digital platforms" we got songs and sang each independently"," We would get assignments and sing songs "," we learned the songs ourselves "," We [sang], but alone without an invitation [not as part of remote learning] "," we [sang], through the Teams application, but I did not because it sounds stupid "," we sang when we answered [knowledge test] "," I sang alone at home, when the teacher told us to learn a song "," we recorded ourselves singing "," we only recorded singing and sent it to the teacher "," tried Zoom [singing using the Zoom app], but it didn't work so we just [sang] on the exam "," We sang in groups on Zoom "…

Songs that are learned and sung in Music Culture classes are most often adopted by the method of learning to sing by ear. "Although suggestions of other possible models of processing new songs can be found in literature, such as song processing by musical notation, it is not necessary to use this method in primary education, as it requires a number of developed musical competencies that cannot be developed within regular music lessons "(Radočaj-Jerković, 2017a, p. 78). One of the methods that teachers can use during the adoption of a new song is to demonstrate the song with an audio/video recording. Such a way may be an exception from the established and recommended learning process, but it cannot replace the teacher, his singing in the process of song adoption

as well as his necessary intervention and moderation of the experience-based process. (Radočaj-Jerković, 2017b)

Thus, the teacher is a mediator who must be directly present in the process of adopting the song and with whom students participate in learning a new song through active music making.

Given all the above, the thesis is confirmed that for students who were actively involved in singing even before the pandemic, singing online cannot completely replace in-person singing or quality adoption of new songs.

CONCLUSION

The aim of the study was to determine whether there is a difference in the perception of dissatisfaction with the suspension of singing depending on whether the students were actively and intensively engaged in singing compared to those who were not or did not have this activity prior to the COVID-19 pandemic and to examine whether there is a difference in the perception of singing in-person and singing in a virtual environment. The hypothesis related to dissatisfaction with singing that is higher in those who sang before the pandemic compared to those who did not sing was confirmed as well as the hypothesis related to dissatisfaction with singing that is higher in those who sing elsewhere, apart from Music Culture classes.

In all statements, the result is higher for students who sing compared to those who do not sing at all, i.e. those who sing think that they are dissatisfied with the suspension of in-person singing more during the pandemic, that they miss in-person singing in Music Culture classes, that without singing they feel less happy, that during the suspension of singing they engage in new, different activities, that without singing it is harder for them to remove negative feelings and that they would rather sing in online than not sing at all.

The research partially confirmed a smaller part of the hypothesis related to the feeling of happiness in students who continue to sing during the pandemic compared to those who stopped singing. Additionally, it was confirmed that students who sang during the pandemic in online classes had greater dissatisfaction when singing was suspended due to remote learning.

Furthermore, this research has shown that on some variables there is increased personal happiness in students who sing compared to those who do not. Furthermore, the thesis was confirmed that for students who were actively involved in singing even before the pandemic, singing via online platforms cannot completely replace singing in-person as well as quality learning of new songs and compositions.

Students who sang during the pandemic did so under certain conditions and restrictions that significantly differ from regular work. Further research is recommended in terms of the effectiveness of such a way of singing and the

possible consequences in relation to health, personal well-being and the effectiveness of the implementation of such activities.

Since certain respondents emphasized that they sing in non-school related ensembles and/or choirs, it would be necessary to further study the intensity of personal dissatisfaction with regard to the age of the singer and the type of choir.

The contribution of this paper is in confirmation of previous research that singing has a positive effect on the singer and that continuous practice creates a healthy habit that positively affects the student singer because its suspension, as confirmed by the results, intensifies personal dissatisfaction. It also shows that students love to sing and that on a personal level they feel the need to sing, i.e. they feel dissatisfied when they are hindered from singing.

As a new circumstance in education, the COVID-19 pandemic opened the possibility of studying the usefulness of music teaching, i.e. singing in education, as well as the reaction and the need of students for singing in the entire Republic of Croatia and wider. Such insight has yet not been provided in scientific work.

The research also examined the ways of conducting singing activities during remote learning using different platforms such as MS Teams, Zoom, Meet, etc. Such platforms showed that the system was not ready to respond to a pandemic and that such platforms and applications (in that period) were not suitable for singing activities such as group singing in class or singing in an ensemble or a choir due to various technical difficulties (sound synchronization, sound quality, etc.). Furthermore, it would be necessary to research the possibilities of implementing simultaneous group singing through digital platforms, their efficiency and possibilities of achieving the set outcomes of the curriculum.

Even though the most severe measures during the COVID-19 pandemic, suggested the suspension of singing both in professional artistic performances and in the educational process, the literature indicates that "currently no data are available to show that there is a statistically significant additional risk of viral transmission from singing above the one in domestic and public gatherings when there are appropriate mitigation measures already applied" (Wallce et al., 2020). Based on the existing results of this research and research on the harmfulness of singing in the spread of the virus, it is possible to further question the benefits of the decision on singing restrictions, i.e. there is opportunity for future research on correlations of restrictive measures and consequences on integrative developmental potential of students.

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