



## CROSS-CURRICULAR CONNECTIONS OF MUSICAL CULTURE AND OTHER SUBJECTS IN CROATIAN ELEMENTARY SCHOOLS

AMIR BEGIĆ<sup>1</sup>, JASNA ŠULENTIĆ BEGIĆ<sup>1</sup> & IVAN VODOPIČ<sup>2</sup>

**Potrjeno/Accepted**

12. 1. 2023

**Objavljeno/Published**

15. 9. 2023

<sup>1</sup>University of J. J. Strossmayer in Osijek, Academy of Arts and Culture in Osijek, Croatia

<sup>2</sup>Gymnasium Vukovar, Primary music school at Elementary School "Ivan Goran Kovačić" in Đakovo, Croatia

CORRESPONDING AUTHOR/KORESPONDENČNI AVTOR/

akord.osijek@gmail.com

### Abstract/Izvlaček

Music lessons provide many opportunities for cross-curricular connections with other subjects. As part of the study, research was conducted on a sample of 110 teachers of Musical Culture in elementary school. The aim of the research was to find out the teachers' views on the implementation of cross-curricular connections between the teaching of Musical Culture and other subjects, the frequency and methods of conducting such teaching, as well as any statistically significant differences between teachers in the attitudes towards and implementation of cross-curricular connections with regard to sociodemographic variables. We believe that the results of this research indicate the need for more intensive implementation of cross-curricular connections between the teaching of Musical Culture and other subjects.

### Keywords:

teaching of Musical Culture, cross-curricular connection, interdisciplinarity, elementary school

### Ključne besede:

pouk Glasbene kulture, medpredmetno povezovanje, interdisciplinarnost, osnovna šola

### UDK/UDC

373.3:78(497.5)

### Medpredmetno povezovanje Glasbene kulture in drugih predmetov v osnovni šoli v Republiki Hrvatski

Glasbeni pouk daje veliko možnosti za medpredmetno povezovanje. V okviru prispevka je bila izvedena raziskava na vzorcu 110 učiteljev, ki poučujejo Glasbeno kulturo v osnovni šoli. Cilj raziskave je bil ugotoviti stališča učiteljev do izvajanja medpredmetnega povezovanja pri pouku Glasbene kulture in drugih predmetov, nato pogostost in načine izvajanja takega poučevanja ter morebitne statistično pomembne razlike med učitelji v stališčih in izvajanju medpredmetnih povezav glede na sociodemografske spremenljivke. Menimo, da so rezultati te raziskave pokazali na potrebo po intenzivnejšem izvajanju povezovanja pouka Glasbene kulture z drugimi predmeti.

DOI <https://doi.org/10.18690/rei.16.3.2498>

Besedilo / Text © 2023 Avtor(ji) / The Author(s)

To delo je objavljeno pod licenco Creative Commons CC BY Priznanje avtorstva 4.0 Mednarodna.

Uporabnikom je dovoljeno tako nekomercialno kot tudi komercialno reproduciranje, distribuiranje,

dajanje v najem, javna priobčitev in predelava avtorskega dela, pod pogojem, da navedejo avtorja

izvirnega dela. (<https://creativecommons.org/licenses/by/4.0/>).



## Introduction

Teaching in schools is divided by disciplines, i.e., subjects. The question arises to what extent disciplinary teaching and learning are in line with the needs of the 21st century, which requires an understanding of economics, communication, cultural identity, citizenship, and the environment (Morari, 2022). In accordance with the above, schools should give importance to interdisciplinary learning within *correlation, project or thematic* integrated teaching, which is more effective in many areas than traditional and established teaching methods. Through such teaching, students acquire knowledge that is applicable in various life situations and lasts longer than knowledge acquired through traditional teaching methods (Tomljenović and Novaković, 2012), and such teaching is more interesting for students (Migles, 2015; Cosenza, 2005; Barrett, 2001) than the traditional way of teaching. Kostović-Vranješ and Šolić (2011) divide the integration of teaching content according to the degree of complexity of the implementation into the *connection model, the community model and the partnership model*. Connection teaching content is a feature of modern teaching and is implemented in the creation of teaching plans and programs, i.e., curriculum, both in foreign countries and in the Republic of Croatia.

The earliest mention of the concept of correlation in the curriculum dates to 1936, when *The National Council of Teachers of English* issued a correlated curriculum. The curriculum supports teaching that is focused on a specific subject with the possibility of interdisciplinary and integrated teaching. To this day, integrative teaching is an indispensable part of any new curriculum (Huang, 2012). Art subjects, among them music lessons, enable numerous correlations with other subjects and, in this way, the organization of integrated teaching. Also, the experience of works of art offers the possibility of connecting the inner world of the individual with the world that surrounds him (Morari, 2022). Langbehn (2012) believes that art encourages awakening and enables education based on “education of the heart” and not only “education of the mind.” Therefore, the integration of art and other subjects, for example, STEM fields (Science, Technology, Engineering and Mathematics), is for the purpose of extending knowledge through art. Thus art plays an important role in conveying what cannot be expressed in words (Morari, 2022). With such integration, STEM becomes STEAM (Science, Technology, Engineering, Arts and Mathematics), i.e., art is combined with STEM subjects for the purpose of improving

student engagement, creativity, innovation, etc. (Perignat and Katz-Buonincontro, 2019). The experience of learning through art can change young people's attitudes towards themselves and others, while developing self-control, empathy and tolerance towards others (Hanna et al., 2011). Given that art contributes to imagination, creativity and innovation, its contribution is manifested in raising the quality of thinking and learning in various non-art subjects. Therefore, with the help of art, students can better understand the world around them, build better relationships in the community, stimulate intrinsic motivation for work, learn more effectively and acquire the ability to face school and life challenges (Tadić, Mrvoš and Antonijević, 2018).

#### *Connecting music lessons with non-music subjects*

Music is often used in the education of preschool children, but this is not the case when the child starts regular school. The desire to achieve the educational learning outcomes of subject curricula leads to less integration of music into the teaching of non-musical subjects (Lazar, 2004). Moreover, the results of research showing that learning through art can be an effective method to improve results in, e.g., language and mathematics, are ignored (Upitis et al., 2001; Elster and Bell, 1999; Fiske, 1999; Wilkinson, 1998 cited in Russell-Bowie, 2009). However, with a little creative planning, music can serve as a teaching method for selected curriculum topics. In this context, music is viewed as a multi-sensory tool for improving learning and acquiring knowledge and skills (Lazar, 2004). Thus, in a study conducted by An, Capraro and Tillman (2013), during the integrated teaching of Mathematics and Music, students were given the opportunity to play instruments such as drums and keyboards. The main task of musical activities and the availability of instruments was improving motivation for learning Mathematics. It was found that the integration of music into mathematics lessons increased students' mathematical abilities many times (An, Capraro and Tillman, 2013). Moreover, musical activities such as singing, rapping, dancing, and rhythmical movement helped students who were afraid of Mathematics content to relax and achieve better learning outcomes in Mathematics classes (Szczygiel, 2020). Van Vuuren (2022) also believes that music can help in the classroom to remove student anxiety and tension when learning mathematics and language content, i.e., calculation, writing and reading (van Vuuren, 2022). It is possible to connect music with language teaching so that singing a song with instrumental accompaniment precedes learning the song by heart, after which, the

students will easily learn the song and recite it by heart (Shuck, 2005). Also, language learning and acquisition of new words is more successful if the use of picture cards is combined with singing and rhythmic pronunciation of new words, compared to the use of picture cards alone (Lawson-Adams et al., 2022).

Šulentić Begić (2009) determined that Musical culture classes are most often associated with the Croatian language and Religious Studies, followed by History, Art and Geography, while the other subjects are less represented. Tonkovac (2018) determined that primary education teachers most often correlate Musical Culture with the Croatian language and then with Nature and Society, Art Culture, and Physical and Health Culture. Most teachers believe that Mathematics is the subject with which Musical Culture has the least correlation. Migles (2015) determined that primary education teachers connect the teaching of Musical Culture to the least extent with the teaching of Mathematics, while they most often connect it with the teaching of Physical and Health Culture. She also determined that musical activities in non-musical subjects are most often used as a sound backdrop, as a means of motivating and relaxing students and improving the working atmosphere. Belošević (2019) came to very similar results, i.e., she found that primary education teachers most often associate the teaching of Music with the teaching of Fine Arts, then with Physical and Health Culture, Croatian Language and Nature and Society, and the least with Mathematics. Šulentić Begić and Špoljarić (2011) determined that the teaching of Musical Culture is most often associated with the teaching of Nature and Society, followed by Physical and Health Culture, Croatian Language, and Art Culture and that it was not associated at all with the teaching of Mathematics.

Given the lack of research on the topic of connecting music teaching with other subjects in the Republic of Croatia, research was conducted using an anonymous questionnaire within the scope of this paper. The sample consisted of Musical Culture teachers of music in elementary general education schools. In the continuation of the paper, the presentation and results of the research will follow.

## **Methodology**

### *The Aim, Research Questions, and Research Hypothesis*

The aim of the research was to determine the views of teachers of Musical Culture in elementary school about the implementation of cross-curricular connections

between Musical Culture and other subjects, as well as the frequency and methods of conducting such lessons.

The research was based on the following research questions and hypotheses:

RQ1: How often and in what way do teachers of Musical Culture connect Musical Culture lessons with lessons in other subjects?

RQ2: What are the teachers' views on cross-curricular teaching, its impact on students and the acquisition of their own competences for conducting cross-curricular teaching?

H1: There is a statistically significant difference between teachers in the frequency, method of implementation and attitudes regarding the implementation of cross-curricular connections between the teaching of Musical Culture and other subjects, depending on various socio-demographic variables (gender, years of experience, school location, active involvement in music).

### *Sample and Data Collection*

The research took place during the 2020/2021 school year and included 110 teachers of Musical Culture from elementary schools in the Republic of Croatia. The data was collected through an online survey. The authors of the paper financed the research. The sample of research participants can be seen in Table 1.

Table 1. Description of the sample (N=110)

		n	%
Gender	male	19	17.3
	female	91	82.7
Years of service	up to 5	23	20.9
	6-15	26	23.6
	16-25	38	34.5
	more than 25	23	20.9
The location of the school where the teacher works	rural	35	31.8
	urban	59	53.6
	both rural and urban*	16	14.5
Actively engaged in music	yes	80	73
	no	30	27

\*Teachers who work in two or more schools in different areas.

As can be seen from Table 1, 110 teachers who teach Music Culture participated in the research. Less than one-fifth of the research participants were male. With regard to the length of service, most teachers have had 11 to 25 years of experience (slightly more than a third).

Also, almost two-thirds of the research participants work in primary general education schools located in urban areas, while almost three-quarters of the teachers are actively engaged in music.

### *The Instrument*

The anonymous online questionnaire filled out by the teachers consisted of questions and statements that sought to find out how often and in what way the teachers organize cross-curricular connections between the teaching of Musical Culture and other subjects. In addition, we wanted to get an opinion on the acquisition of competences for conducting cross-curricular classes and its impact on students. A total of 34 items made up the survey questionnaire, of which 28 were included in this study.

The instrument that was used to find out from the participants how often and in what way teachers connect the teaching of Musical Culture and the teaching of other subjects consisted of fourteen items, one of which was dichotomous in nature (the answers offered were *yes/no*), five in the form of a Likert scale (example: *On a scale from 1 to 5, mark the extent to which you agree with the statement that when organizing the cross-curricular connection of Musical Culture with other subjects, you sometimes deviate from the usual methodological approach to the teaching of Musical Culture, where 1 means that you do not agree with the stated statement at all, 2 that you do not agree, 3 that you do not have an opinion, 4 that you agree and 5 that you completely agree with the stated statement*), while eight items were constructed in the form of multiple choice questions (example: *Cross-curricular connection of Musical culture with other subjects I organize through: (you can mark several answers) a) Classroom lessons; b) Extracurricular classes; c) Regular classes; d) Project classes; e) I do not organize cross-curricular connections; f) Other*). Teachers' attitudes about the acquisition of competences for the implementation of cross-curricular connections were examined with an instrument consisting of two items in the form of a Likert scale. Furthermore, the teacher's opinion about the influence on students of the cross-curricular connection between the teaching of Musical Culture and the teaching of other subjects was examined with an instrument consisting of seven items in the form of a Likert scale. To verify hypothesis H1, the Chi-square test was used with the aim of determining any statistically significant differences in the frequency, method of implementation and attitudes about the implementation of cross-curricular connections depending on various sociodemographic variables. Quantitative data was processed with SPSS software.

## Results and Discussion

At the beginning of the questionnaire, we wanted to find out from the teachers whether and how often they connected the teaching of Musical Culture and the teaching of other subjects (Tables 2 and 3).

Table 2. Implementation of cross-curricular connection (N=110)

Do you organize cross-curricular connections between Musical Culture and other subjects?	yes		no	
	n	%	n	%
	105	95.5	5	4.5

As can be seen in Table 2, almost all respondents stated that they implemented cross-curricular connections. Five participants answered negatively, citing a lack of information about methods of conducting cross-curricular connections, lack of time and the inability to connect teaching content. In the continuation of the work, answers from these five teachers will not be listed in the tables, nor will their answers be included in the statistical calculations.

Table 3. The frequency of implementation of cross-curricular connection (N=105)

I organize cross-curricular connection of Musical Culture and other subjects:	every day		four times a week		three times a week		Twice a week		once a week	
	n	%	n	%	n	%	n	%	n	%
	16	15.2	7	6.7	18	17.1	32	30.5	32	30.5

Table 3 shows that more than a third of teachers organize cross-curricular connections at least three times a week, and slightly less than a third do it once or twice a week.

The next question was: *What kind of music do you use for cross-curricular connection?* (Table 4).

Table 4. Type of music

What kind of music do you use for cross-curricular connection?	popular music		folk/traditional music		art music		children's songs		I do not use	
	n	%	n	%	n	%	n	%	n	%
	62	56.4	63	57.3	64	58.2	62	56.4	6	5.5

As can be seen from Table 4, teachers equally use different types of music when connecting subjects. In addition, six teachers stated that they did not use any of the offered types of music, but at the same time, they did not indicate another type of music even though this was offered as a possibility.

Furthermore, the teachers were asked the following question: *What activities and content do you use when connecting Musical Culture with other subjects?* (Table 5).

Table 5. Activities and content

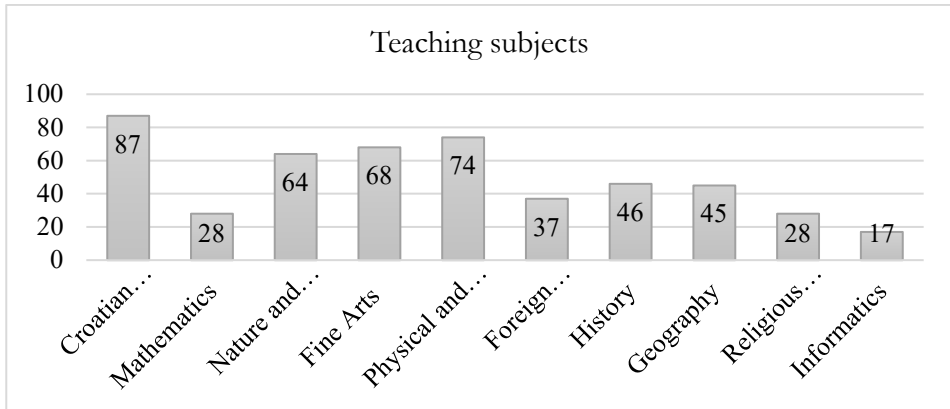
What activities and content do you use for cross-curricular connection?													
listening to music		singing		playing		musical games/ movement and dance to music		musicological content		musical alphabet		musical creativity	
n	%	n	%	n	%	n	%	n	%	n	%	n	%
86	78.2	81	73.6	18	16.4	70	63.6	25	22.7	3	2.7	26	23.6

Table 5 indicates that when connecting subjects, teachers most often use music, which, according to the current national curriculum, i.e., *the curriculum for the subject Musical Culture for Elementary Schools and Musical Arts for High Schools* (MZO, 2019), is a central activity in music teaching, followed by singing, musical games and musical creativity. In addition, five teachers stated that they did the same while conducting the choir and one while leading dance classes.

*With which subjects do you associate the teaching of Musical Culture?* was the following question (Graph 1).

Most of the teachers, more than three-quarters, associate the teaching of Musical Culture with the teaching of the Croatian language. Less than three-quarters of teachers do this with the teaching of Physical and Health Culture and about two-thirds with the teaching of Fine Arts and Nature and Society. Teachers do this least often with Mathematics (only one in four teachers) and only one in six teachers do this with Religious Studies (Graph 1). These results are mostly in line with earlier research (Belošević, 2019; Migles, 2015; Šulentić Begić and Špoljarić, 2011).





Graph 1. Teaching subjects

In the continuation of the questionnaire, research participants were asked the question *In which part of the lesson do you conduct cross-curricular connections between Musical Culture and other subjects?* (Table 6).

Table 6. Part of the class hour

In which part of the lesson do you conduct cross-curricular connections between Musical Culture and other subjects?	introductory part		central part		the final part	
	n	%	n	%	n	%
	67	60.9	62	56.4	63	57.3

Teachers equally organize cross-curricular connection during all three parts of the lesson (Table 6) and mostly in the introductory part of the lesson, as in the research conducted by Tonkovic (2018) and Migles (2015).

Furthermore, the teachers were asked the question *For what purpose do you most often organize cross-curricular connections between Musical Culture and other subjects?* (Table 7).

Table 7. Purpose of connection

For what purpose do you most often organize cross-curricular connections between Musical Culture and other subjects?	as motivation		as an announcement of new teaching content		for relaxation		for a better understanding of the teaching content	
	n	%	n	%	n	%	n	%
	72	65.5	36	32.7	54	49.1	69	62.7

Table 7 shows how teachers make cross-curricular connections between the content of Musical Culture and other subjects, primarily for the purpose of motivating students and for a better understanding of the teaching content. Tonkovac (2018) also obtained personal results, which determined that primary education teachers use music in non-musical subjects as motivation for new teaching content. Furthermore, we wanted to find out from the teachers in which type of teaching they organize cross-curricular connections (Table 8).

Table 8. Type of teaching

I organize cross-curricular connection of Musical Culture and other subjects within the framework of:	classroom lessons		extracurricular classes		regular classes		project classes	
	n	%	n	%	n	%	n	%
	58	52.7	28	25.5	86	78.2	35	31.8

Cross-curricular connections are most often organized by teachers within the framework of regular and classroom teaching and much less frequently during extracurricular or project teaching (Table 8).

In the continuation of the questionnaire, the teachers were supposed to state whether they cooperated with their male and female colleagues during the implementation of cross-curricular classes (Table 9).

Table 9. Cooperation with colleagues

When organizing cross-subject connection of Musical Culture and other subjects:	I cooperate successfully with colleagues		I find it difficult to cooperate		I don't have to cooperate because I conduct it independently	
	n	%	n	%	n	%
	58	52.7	-	-	47	42.7

As can be seen from Table 9, slightly more than half of teachers cooperate with other teachers in the implementation of cross-curricular connections, which is in line with other research (Tomljenović and Novaković, 2012), and slightly less than half of them organize such classes themselves.

The next statement read: *When implementing the cross-curricular connection of Musical Culture with other subjects, I sometimes deviate from the usual methodological approach to the teaching of Musical Culture* (Table 10).

Table 10. Methodological approach

When organizing the cross-curricular connection of Musical Culture and other subjects, I sometimes deviate from the usual methodological approach to the teaching of Musical Culture.									
I don't agree at all		I disagree		I have no opinion		I agree		I completely agree	
n	%	n	%	n	%	n	%	n	%
2	1.9	6	5.7	28	26.7	41	39.0	28	26.7

Two-thirds of the teachers (Table 10) stated that when conducting cross-curricular classes, they occasionally deviate from the usual methodological approach to teaching Musical Culture.

To answer research question RQ1 *How often and in what way do teachers of Musical Culture connect the teaching of Musical Culture with other subjects?* We can conclude that listening and singing are the most frequently used activities, equally in all parts of the lesson. The largest number of teachers use cross-curricular connections during regular classes to better motivate students and for students to better assimilate teaching content; more than half of them emphasized that they successfully cooperate with other teachers when conducting such classes and two-thirds that they occasionally deviate from the usual methodological approach.

In the continuation of the questionnaire, teachers were asked for their opinion on the acquisition of their own competences for conducting cross-curricular classes (Table 11).

Table 11. Opinion on the acquisition of competences

During my studies, I developed the competences necessary to organize cross-curricular connections between Musical Culture and other subjects.									
I don't agree at all		I disagree		I have no opinion		I agree		I completely agree	
n	%	n	%	n	%	n	%	n	%
15	14.3	26	24.8	30	28.6	14	13.3	20	19
During my life-long education, I continue to develop the competences necessary to organize cross-curricular connections between Musical Culture and other subjects.									
I don't agree at all		I disagree		I have no opinion		I agree		I completely agree	
n	%	n	%	n	n	%	n	%	n
-	-	3	2.9	13	12.4	30	28.6	59	56.2

Only one-third of participants believe that during their studies they developed the necessary competences for organizing cross-curricular connections, while at the same time, the vast majority claim that they have done so during lifelong education (Table 11).

The teachers then gave their opinion on the implementation of cross-curricular connection by responding to four statements in the form of a Likert scale. Almost all teachers are of the opinion that cross-curricular connections make teaching more interesting (the same is stated by Migles, 2015; Arredondo and Rucinski, 1998 cited in Cosenza, 2005; Barrett, 2001), while only slightly more than a quarter think that such teaching is demanding to perform, which is not in accordance with the opinions of some authors (Kostović-Vranješ and Šolić, 2011). Also, nine out of ten teachers think that cross-curricular connections can be implemented in varied ways, and the same number think that organizing such classes depends on the preference of students and teachers.

Furthermore, we wanted to know the teacher's opinions on how cross-curricular connections affect their students. The majority of teachers (between 83% and 94%) agreed with the given statements: that cross-curricular connection positively affects student motivation, that it provides comprehensive access to teaching content, reduces student stress (see also Szczygiel, 2020; Tonkovac, 2018; Migles, 2015), encourages creativity, enables easier transfer of knowledge, which is claimed by Tomljenović and Novaković (2012) as well as An, Capraro and Tillman (2013), and contributes to the acquisition of skills. Only to a lesser extent (slightly less than half) did they agree with the statement that younger students are more receptive to cross-curricular connections. Therefore, answering research question RQ2 *What are the teachers' views on cross-curricular teaching, its impact on students and the acquisition of their own competences for conducting cross-curricular teaching?* we can conclude that most teachers believe that cross-curricular connection makes teaching more interesting, that it should be organized in agreement with students, that it is not demanding to perform and that it has a positive effect on students. Also, most teachers believe that competence is developed primarily through lifelong education.

For the purpose of testing hypothesis H1 *There is a statistically significant difference between teachers in the frequency, method of implementation and attitudes about the implementation of cross-curricular connection of the teaching of Musical Culture with other subjects by various socio-demographic variables* (gender, years of experience, school location, active involvement in music), the Chi-square test was performed.

With respect to gender, no statistically significant difference was found. Regarding length of service, the difference was found in four variables (Table 12).

Table 12. Chi-square test by length of service

variable	the use of art music	implementation due to announcement	opinion on developing competence during studies	opinion on the impact on student creativity
years of service	9.53*	8.41*	29.88**	16.78**

p<.05\*; p<.01\*\*; p<.001\*\*\*

Art music is used to a significantly greater extent by teachers with the least and most seniority (about three-quarters of them) and to a lesser extent, by about half of them, those with a length of service of 6 to 25 years. A little less than half the teachers implement cross-subject connections for the purpose of announcing the teaching content, but only one in six who have 16 to 25 years of experience do so. A statistically significant difference was also determined for the opinion about developing the necessary competence during studies. Overall, a third of participants agreed with the statement, but to the greatest extent those with the least experience, almost two-thirds of them.

Most teachers have a positive opinion about the influence of cross-curricular connections on student creativity, but those with the least and most seniority agree to a greater extent. Furthermore, with regard to the location of the school, a statistically significant difference was found in six variables (Table 13).

Table 13. Chi-square test by school location

variable	the use of art music	connection with the subject History	connection with the subject Geography	conducting during the central part of the class	implementation due to the understanding of the teaching content	implementation during extracurricular classes
school location	6.17*	9.60**	10.12**	7.33*	8.31*	7.73*

p<.05\*; p<.01\*\*; p<.001\*\*\*

More than three-quarters of teachers working in urban and rural schools use art music, two-thirds of them from urban schools and slightly less than half from rural schools.

An almost identical result was obtained with regard to the connection of the teaching of Musical Culture with the subject of History and the subject of Geography. This makes up more than three-quarters of teachers working in urban and rural schools, with slightly less than half in urban schools and about a third in rural schools. Implementation during the central part of the lesson is carried out by almost all teachers in urban and rural schools, more than half from urban schools and less than half from rural schools. Cross-curricular connection is carried out by almost all teachers working in urban and rural schools, two-thirds from urban schools and half from rural schools.

Finally, with regard to teachers' active involvement in music, a difference was found in four variables (Table 14).

Table 14. Chi-square test with regard to active music practice

variable	frequency of implementation	connection with the subject foreign language	connection with the subject History	connection with the subject Geography
actively engaged in music	13.23*	3.88*	4.00*	5.52*

$p < .05^*$ ;  $p < .01^{**}$ ;  $p < .001^{***}$

Every fifth teacher who is involved in music conducts cross-curricular connections every day or three times a week, while teachers who are not musically active do so to a much lesser extent (every tenth teacher, three times a week and none every day). Furthermore, slightly less than half the teachers who are actively involved in music associate Musical Culture with the subject Foreign Language, and half with the subjects History and Geography. Every fifth teacher who is not actively involved in music makes a connection with the subject Foreign language, a quarter of them with the subject History and the subject Geography. Given these results and taking into account the large number of variables, hypothesis H1 *There is a statistically significant difference between teachers in the frequency, method of implementation and attitudes about the implementation of cross-curricular connection of the teaching of Musical Culture with other subjects depending on various socio-demographic variables (gender, years of experience, location of school, active involvement in music)* is not accepted.

## **Conclusion**

The results of this study showed that almost all teachers implement cross-curricular connections using all types of music. Listening and singing are the activities most often used equally in all parts of the lesson, during regular classes, with the purpose of motivating students for the best possible acquisition of teaching content. Most teachers cooperate successfully with other teachers but occasionally deviate from the usual methodological approach. Most research participants believe that cross-curricular connections make classes more interesting; that they should be organized in agreement with students; that they are not demanding to perform; and that they have a positive effect on students. Additionally, most teachers believe that they did not sufficiently acquire the competence required for teaching such classes, but instead developed it primarily through lifelong education. At the same time, socio-demographic variables (gender, years of experience, location of the school, teachers' active involvement in music) did not prove to be predictors of differences between teachers in the frequency, method of implementation and attitudes about the implementation of cross-curricular connections between the teaching of Musical Culture with other subjects.

These results and conclusions should be considered with a caution, owing to several limitations of this research. By increasing the sample, more complete insight into the issue could be obtained.

At the same time, the research could also include teachers of Musical Arts in grammar and secondary schools, which would provide more complete insight into cross-curricular connections during elementary and high school education.

We believe that the results of this study indicate the need for more intensive implementation of the cross-curricular connection between the teaching of Musical Culture and other subjects, which contributes to the integrity, efficiency and modernity of teaching for the benefit of the students. Integrated teaching is particularly achievable with music teaching, given the nature of the subject; it is therefore important to point out the need to adapt the content of study programs at the university so that future teachers can more effectively acquire the competences needed to implement integrated teaching as an important part of modern teaching in elementary schools.

## References

- An, S., Capraro, M. M. and Tillman, D. A. (2013). Elementary Teachers Integrate Music Activities into Regular Mathematics Lessons: Effects on Students' Mathematical Abilities. *Journal for Learning through the Arts*, 9(1), 1–21. <https://files.eric.ed.gov/fulltext/EJ1018326.pdf>
- Barrett, J. R. (2001). Interdisciplinary work and musical integrity. *Music Educators Journal*, 87(5), 27–31. <http://dx.doi.org/10.2307/3399705>
- Belošević, I. (2019). *Mogućnosti korelacije predmeta Glazbena kultura s ostalim predmetima u primarnom odgoju i obrazovanju* (Unpublished undergraduate thesis). Zagreb: Sveučilište u Zagrebu, Učiteljski fakultet. <https://urn.nsk.hr/urn:nbn:hr:147:213057>
- Cosenza, G. (2005). Implications for Music Educators of an Interdisciplinary Curriculum. *International Journal of Education & the Arts*, 6 (9), 1–7. <http://www.ijea.org/v6n9/v6n9.pdf>, 05/02/2021.
- Hanna, G., Patterson, M., Rollins, J. and Sherman, A. (2011). *The Arts and Human Development – framing a national research agenda for the arts, lifelong learning, and individual well-being*. Washington: National Endowment for the Arts. [https://www.researchgate.net/publication/290978827\\_The\\_Arts\\_and\\_Human\\_Development\\_Framing\\_a\\_National\\_Research\\_Agenda\\_for\\_the\\_Arts\\_Lifelong\\_Learning\\_and\\_Individual\\_Well-Being](https://www.researchgate.net/publication/290978827_The_Arts_and_Human_Development_Framing_a_National_Research_Agenda_for_the_Arts_Lifelong_Learning_and_Individual_Well-Being)
- Huang, Y. E. (2012). *Music integration in the elementary school community: an investigation of integration styles and collaborative modes in Pennsylvania and Taiwan* [Unpublished doctoral dissertation]. The Pennsylvania State University. [https://etda.libraries.psu.edu/files/final\\_submissions/7671](https://etda.libraries.psu.edu/files/final_submissions/7671)
- Kostović-Vranješ, V. and Šolić, S. (2011). Nastavni sadržaji Prirode i društva – polazište za interdisciplinarno poučavanje u razrednoj nastavi. *Život i škola*, 25, 207–216. <https://hr-cak.srce.hr/71657>
- Langbehn, J. (2012). *Rembrandt als Erzähler*. Hamburg: Tradition Classics.
- Lawson-Adams, J., Dickinson, D. K. and Donner, J. K. (2022). Sing it or speak it? the effects of sung and rhythmically spoken songs on preschool children's word learning. *Early Childhood Research Quarterly*, 58, 87–102. <http://dx.doi.org/10.1016/j.ecresq.2021.06.008>
- Lazar, M. (2004). Interactive Music Strategies for the Academic Curriculum, New Horizons for Learning: Teaching and Learning Strategies. *Quarterly Journal*. <http://www.songsforteaching.com/lazar/interactivestrategies.html>
- Migles, Ž. (2015). *Interdisciplinarno povezivanje glazbe s neglazbenim predmetima razredne nastave* (Unpublished Master's Thesis). Osijek: Fakultet za odgojne i obrazovne znanosti. <https://repozitorij.foozos.hr/islandora/object/foozos:55/preview>
- Morari, M. (2022). 13. Integrating Functions of Music in Learning and Education. *Review of Artistic Education*, 23(1), 96–110. <https://doi.org/10.2478/rae-2022-0013>
- MZO (2019). *Kurikulum za nastavni predmet Glazbena kultura za osnovne škole i Glazbena umjetnost za gimnazije*. Zagreb: Ministarstvo znanosti i obrazovanja. [https://narodne-novine.nn.hr/clanci/sluzbeni/2019\\_01\\_7\\_151.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2019_01_7_151.html)
- Perignat, E. and Katz-Buonincontro, J. (2019). STEAM in practice and research: An integrative literature review. *Thinking Skills and Creativity*, 31, 31–43. <https://doi.org/10.1016/j.tsc.2018.10.002>
- Russell-Bowie, D. (2009). Syntegration or disintegration? Models of integrating the arts across the primary curriculum. *International Journal of Education & the Arts*, 10(28), 1–23. [https://www.researchgate.net/publication/263389309\\_Syntegration\\_or\\_Disintegration\\_Models\\_of\\_Integrating\\_the\\_Arts\\_Across\\_the\\_Primary\\_Curriculum](https://www.researchgate.net/publication/263389309_Syntegration_or_Disintegration_Models_of_Integrating_the_Arts_Across_the_Primary_Curriculum)
- Shuck, C. M. (2005). *Music Integration: Educators' Perceptions of Implementation and Student Achievement in Public School Elementary Education* [Unpublished doctoral dissertation]. University of South Florida. <https://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1862&context=etd>
- Szczygiel, M. (2020). More Evidence that Math Anxiety is Specific to Math in Young Children: The Correlates of the Math Anxiety Questionnaire for Children (MAQC). *International Electronic Journal of Elementary Education*, 12(5), 429–438. <http://dx.doi.org/10.26822/iejee.2020562-133>



- Šulentić Begić, J. (2009). Hrvatski nacionalni obrazovni standard i permanentno obrazovanje učitelja glazbe. *Tonovi*, 54, 49–65. <https://www.bib.irb.hr/468998>
- Šulentić Begić, J. and Špoljarić, B. (2011). Glazbene aktivnosti u okviru neglazbenih predmeta u prva tri razreda osnovne škole. *Napredak – časopis za pedagoškijsku teoriju i praksu*, 152, 447–462. <https://hrcak.srce.hr/82786>
- Tadić, A., Mrvoš, I. and Antonijević, R. (2018). Theoretical Foundation and Actuality of the Concept Education through Art. In S. Marinković (Ed.), *Language, Culture, Education* (267–278). Užice: Pedagoški fakultet. [https://reff.f.bg.ac.rs/bitstream/id/8018/bitstream\\_8018.pdf](https://reff.f.bg.ac.rs/bitstream/id/8018/bitstream_8018.pdf)
- Tomljenović, Z. and Novaković, S. (2012). Integrirana nastava – projekt u izornoj nastavi likovne kulture u osnovnoj školi. *Metodički obzori*, 14(3), 119–134. [https://hrcak.srce.hr/index.php?show=clanak&id\\_clanak\\_jezik=117130](https://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=117130)
- Tonkovac, M. (2018). *Interdisciplinarni pristup poučavanju glazbe u prva tri razreda osnovne općobrazovne škole* (Unpublished Master's Thesis). Osijek. Fakultet za odgojne i obrazovne znanosti. <https://urn.nsk.hr/urn:nbn:hr:141:218426>
- van Vuuren, E. J. (2022). Integrated Music Education in Primary School: A Position Paper. *Journal of Culture and Values in Education*, 5(1), 211–222. <https://doi.org/10.46303/jcve.2022.16>

#### Authors:

##### **Amir Begić, PhD**

Assistant Professor, Academy of Arts and Culture in Osijek, University of J. J. Strossmayer, Ulica Kralja Petra Svačića 1/F, 31000 Osijek, Croatia, e-mail: [abegic@aukos.hr](mailto:abegic@aukos.hr)  
Docent, Akademija za umetnost in kulturo v Osijeku, Univerza J. J. Strossmayer, Ulica Kralja Petra Svačića 1/F, 31000 Osijek, Hrvatska, e-pošta: [abegic@aukos.hr](mailto:abegic@aukos.hr)

##### **Jasna Šulentić Begić, PhD**

Associate Professor, Academy of Arts and Culture in Osijek, University of J. J. Strossmayer, Ulica Kralja Petra Svačića 1/F, 31000 Osijek, Croatia, e-mail: [jsulentic-begic@aukos.hr](mailto:jsulentic-begic@aukos.hr)  
Izredna profesorica, Akademija za umetnost in kulturo v Osijeku, Univerza J. J. Strossmayer, Ulica Kralja Petra Svačića 1/F, 31000 Osijek, Hrvatska, e-pošta: [jsulentic-begic@aukos.hr](mailto:jsulentic-begic@aukos.hr)

##### **Ivan Vodopić, MA music**

Highschool Vukovar, Šamac ul. 2, 32000 Vukovar, Croatia and Elementary music school by Elementary school Ivan Goran Kovačić Đakovo, Ulica kralja Tomislava 25, 31400 Đakovo, Croatia, e-mail: [ivan.vodopic@skole.hr](mailto:ivan.vodopic@skole.hr)

Gimnazija Vukovar, Šamac ul. 2, 32000 Vukovar, Hrvatska in Osnovna glasbena šola pri Osnovni šoli Ivan Goran Kovačić Đakovo, Ulica kralja Tomislava 25, 31400 Đakovo, Croatia, e-pošta: [ivan.vodopic@skole.hr](mailto:ivan.vodopic@skole.hr)