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Interdisciplinary Interaction between Music Education and History: Shaping the Musical Preferences in Classical Music of the 20th Century

JERNEJA ŽNIDARŠIČ¹

∞ The purpose of the current study was to investigate whether an experimental programme, based on interdisciplinary interactions between music education and history and the implementation of arts and cultural education objectives, could influence pupils' interest in Western classical music of the 20th century. The programme was designed on the basis of collaborating with music education and history teachers at two Slovenian primary schools and a Slovenian composer. Classes of pupils, aged fourteen and fifteen, were divided into an experimental and a control group. According to the outcome, the pupils in the experimental group showed a higher level of interest in contemporary classical music after the experiment than their peers in the control group. Furthermore, the pupils in the experimental group reported having listened on their initiative, to more classical compositions after the experiment than the pupils in the control group had.

Keywords: arts and cultural education, history, interdisciplinary interactions, music education, musical preferences

1 Faculty of Education, University of Maribor, Slovenia; jerneja.znidarsic@um.si.

Medpredmetno povezovanje glasbene umetnosti in zgodovine: oblikovanje glasbenih preferenc klasične glasbe 20. stoletja

JERNEJA ŽNIDARŠIČ

☞ Namen raziskave je bil preučiti, ali eksperimentalni program, ki temelji na medpredmetnem povezovanju med glasbeno umetnostjo in zgodovino ter na implementaciji ciljev kulturno-umetnostne vzgoje, vpliva na zanimanje učencev za zahodno klasično glasbo 20. stoletja. Program je bil zasnovan na osnovi sodelovanja z učitelji glasbene umetnosti in zgodovine iz dveh slovenskih osnovnih šol ter s slovensko skladateljico. Razredi z učenci, starimi od štirinajst do petnajst let, so bili razdeljeni v eksperimentalno in kontrolno skupino. Rezultati raziskave so pokazali, da so učenci eksperimentalne skupine po izvedenem eksperimentalnem programu pokazali višjo stopnjo zanimanja za sodobno klasično glasbo kot njihovi vrstniki v kontrolni skupini. Poleg tega so učenci iz eksperimentalne skupine po izvedenem eksperimentalnem programu poročali, da so na lastno pobudo poslušali več klasičnih skladb kot učenci iz kontrolne skupine.

Ključne besede: glasbena umetnost, glasbene preference, kulturno-umetnostna vzgoja, medpredmetno povezovanje, zgodovina

Introduction

Contemporary society confronts us with the challenges of finding the best and most effective and sustainable teaching and learning methods used in the education process. Modern approaches in education emphasise the need to move from a model of transmission to a model of transformation. Such approaches are characterised by a growing role of the pupils within the learning process. With the help of the teacher, pupils acquire knowledge through their activity, discovery, and experience. Within this framework, an interdisciplinary interaction² in the learning environment enables pupils to recognise meaningful connections across different curricular disciplines and discuss various topics from different angles.

Several research studies discuss positive correlations of interdisciplinary interactions, such as encouragement of pupils to discover the connections between seemingly unrelated domains, facilitation of a personalised process of organising knowledge, development of generic skills, which are independent of the content and can be transferred and used in different situations (Hodnik Čadež, 2013; Rich, 2009; Sicherl-Kafol, 2013); improvement of motivation and interest for the learning process (Cheung, 2008; Michelsen & Sriraman, 2009; Serrano Pastor, 2013), openness to different points of view (LTTA, 2010) and improvement of pupil-teacher relationships (Drake & Burns, 2004). Furthermore, interdisciplinary collaborations are recognised as a concept for sustainable learning (learning that is continuous, enduring, proactive) and education (current and viable theories, practices, systems that influence positive change) (Hays & Reinders, 2020).

Given its positive effects in recent years, interdisciplinarity is also often a part of the learning process in Slovenian schools (Sardoč, 2004; Sicherl-Kafol, 2013). However, the studies show that among the teachers, the understanding of interdisciplinarity is questionable (Hodnik Čadež, 2013), most studies are carried out only at the level of the first and the second triennium of primary school³

2 The terms 'interdisciplinary interactions/ interdisciplinarity' is used generally, to describe various interactions between two or more disciplines.

3 The primary school applies to primary and lower secondary education, which is organized in a single-structure nine-year basic school, attended by students aged 6 to 15 years. The basic school programme is divided into three educational cycles, each covers three years. In the first educational cycle, pupils are taught by the general (class) teacher. In the second educational cycle there is primarily a general teacher and at the end of the second and in the third educational cycle the lessons are delivered by specialist teachers (The education system in the Republic of Slovenia 2018/2019). Music education is a part of the curriculum for nine years of primary school, in which pupils develop their musical abilities, skills, and informative knowledge through various musical activities (listening, creating, playing on instruments). Pupils can also attend a non-compulsory basic music education, outside mainstream formal education, through which they can upgrade the knowledge with music-theoretical subjects and individually learn to play their chosen instruments.

(Devjak et al., 2013; Marjanovič Umek et al., 2011) and that most teachers implement interdisciplinary interactions spontaneously when the right occasion arises (Štemberger, 2013); this means that interdisciplinarity is seldom planned in Slovenian schools, which casts doubt on the quality of its implementation. Furthermore, the teachers most frequently actualise the connections between the subjects based on subject-matter and objectives, and not on the process-developmental model that involves the transfer of certain skills, experience and enables the use of teaching methods, which best contribute to the development of pupils' abilities, such as the ability of critical thinking (Pevce Semec, 2007).

Regarding music education in interdisciplinary settings, we can find various studies (Bresler, 2010; Serrano Pastor, 2013) dealing with the positive effects of interdisciplinary interactions between artistic and non-artistic subjects. Nevertheless, music is too often used only to reinforce the content in subjects of a non-artistic area (Barry, 2008; Suraco, 2006), failing to explore the possible implications that an interdisciplinary interaction could have on different aspects of music education.

Arts and cultural education

The level of quality in education can be raised through elevated awareness and inclusion of arts and cultural education into the teaching process. The latter can be introduced as the integration of different art disciplines within school subjects or other curricular activities. Moreover, arts and cultural education enables the possibility for goal-oriented and process-developmental planning. The main objectives are to develop creativity, individual capabilities, aesthetic sensitivity, and critical reflection of culture and art, to promote the expression of cultural diversity, to raise cultural awareness, and to promote national cultural heritage (National Guidelines for Arts and Cultural Education, 2009). When dealing with the practical implications, one of the key principles of arts and cultural education is the implementation of cooperation among schools and artists (Bamford, 2006; De Backer et al., 2012; Hout et al., 2017; National programme for culture, 2018-2025; Road Map for Arts Education, 2006; Sicherl-Kafol & Denac 2011), where pupils' have, for example, the opportunity to engage in the creative process while being mentored by the composer. According to Ivon and Kuščević (2013), perspectives of authentic, interactive, and integrative learning place pupils not only as the consumers of cultural values but also as the creators of culture and its future values.

Listening to Music and Musical Preferences

Listening to, exploring, choosing, and discussing favourite music represent an essential part of a young adult's life. Background and intentional music listening are the most frequent adolescent leisure activities (Lavrič et al., 2011; Marketing Charts, 2015). They affect the formation of their values and relations to others and society in general. What kind of music do young adults choose and, more importantly, why? What are the determinants that influence people's musical preferences? The results of various studies suggest that, in a wider context, musical preferences are influenced by individual, social and situational factors or context (Bonneville-Roussy et al., 2017).

Individual factors are reflected in personal characteristics (Delsing et al., 2008), individual values (Tekman et al., 2012), arousal potential (North & Hargreaves, 2008), cognitive abilities (Getz et al., 2014), social identity (Mans, 2009), age (Bonneville-Roussy & Eerola, 2017), and gender (Brittin, 2014; North & Hargreaves, 2008).

Regarding social factors, musical preferences are conditioned by social class (North & Hargreaves, 2007), peers (Selfhout et al., 2009), parents (Schäfer & Sedlmeier, 2009), mass media (Wingstedt et al., 2008) and the music industry (Evans, 2010; Negus, 2006).

In addition to the above-mentioned factors, researchers have identified some other influences on musical preferences, such as music functions (Miranda & Claes, 2009; Schäfer & Sedlmeier, 2009), musical knowledge (Getz et al., 2014), general knowledge of context and facts, as well as sociological and analytical comments while becoming familiar with a specific composition (Johnson, 2009) and features of music itself (Imbir & Goğab, 2017; North & Hargreaves, 2008).

The influence of musical features on music preferences is a field of research within experimental aesthetics. One of the leading researchers in that field was Berlyne (1971), who suggested that the main factor influencing musical preferences in terms of artistic stimuli is arousal, which is largely conditioned by 'collative' stimulus properties, specifically, familiarity, complexity, and the degree of surprise while listening to a specific composition. A high degree of novelty and complexity of a musical piece evokes a high degree of arousal potential and a lower degree of preference, which escalates, as the musical piece becomes familiar, to the point of overexposure and by declining attractiveness. Many researchers have considered the U-shaped relationship between arousal and intrinsic attractiveness (Imbir, 2015; Moors et al., 2013; North & Hargreaves, 2008). Following the series of criticisms of Berlyne's theory and experimental aesthetics, some authors pointed out the problem of dealing with the concept of 'complexity of

artistic stimuli' (North & Hargreaves, 2008). North and Hargreaves (2008) suggest replacing the term *objective complexity*, which can be defined as the statistical probability of one note following another (suggesting (non) sequence by means of tonality and key functions, particularly in Western music) with the term *subjective complexity* notwithstanding the less accurate methodological verifiability. The latter is not associated with music itself as much as it focuses on the listener and one's perception of complexity. Various researchers (Krumhansl et al., 2000; Orr & Ohlsson, 2001) supported that theory as they have concluded that, through repetition of melody, the listener perceives it as less complex, thus raising the preference level. Repeated listening reduces unpredictability in music – the objective complexity is still the same, but the subjective complexity decreases. Furthermore, repeated listening and music experiences (Oxenham et al., 2003) help listeners develop listening skills. Individuals with more musical training and musical experiences (objectively) prefer more complex music than people without musical background (Getz et al., 2014).

However, mere exposure does not directly lead from previously unknown music to a higher interest in a specific composition or song. The listener has to increase the effort to become familiar with the music (Lamont & Webb, 2009), and experience is less than an emotional response. The majority of popular music is accompanied by lyrics – a tool for regulating the emotional response (Fiveash & Luck, 2016) that provides additional musical information that influences the interpretation of music (Thompson et al., 2008). Regarding instrumental music, Tan and Kelly (2004) argue that pupils (with no prior musical training) focus on the arousal of emotions or sensations and create stories to accompany music.

In adolescence, pupils most frequently choose popular music (Dobrota & Ercegovac, 2017; Vries, 2010), whereas classical music is most likely reserved for formal music education (Vitale, 2011). One of the reasons can be found in the fact that musical genres are connected with social stereotypes. Studies have shown that young adults hold consistent beliefs about others claiming to be fans of a certain genre (Rentfrow & Gosling, 2007). Furthermore, the preferences for classical music are complex because atonal music is less favoured compared to tonal music (Ball, 2011; Meyers, 2012). The music teacher is thus confronted with a challenge: how to raise pupils' level of interest in classical music above school settings and to develop the abilities of pupils' critical attitudes towards influences of different factors such as the music industry and mass media.

The present research aims to establish possible effects of interdisciplinary interactions between music education and history on shaping the musical preferences in classical music of the 20th century while implementing the objectives and principles of arts and cultural education.

Method

Research objectives

The main research objectives are:

- To design an experimental programme for the interdisciplinary teaching of music and history for the ninth grade of primary school based on teaching processes, objectives, methods, activities and subject-matter while implementing the learning objectives of arts and cultural education,
- To evaluate the effectiveness of existing and experimental teaching programmes with regard to pupils' interest in classical music of the 20th century.

Experimental Programme

The experimental programme is based on interdisciplinary interactions, namely intertwined multidisciplinary and 'interdisciplinary' perspectives.⁴ Music and history teachers had collaboratively planned didactic units, deriving from developmental and goal-oriented models, while considering general and operative objectives and the subject-matter covered by the curriculums. A team of teachers identified the cohesive elements at the level of learning processes, objectives, teaching methods, subject-matter, and activities. An important cohesive element was the concept of arts and cultural education. Based on the theoretical background of *National Guidelines for Arts and Cultural Education* 2009, we have implemented the objectives of arts and cultural education, such as developing pupils' critical thinking, critical attitudes towards culture and arts, aesthetic sensitivity, creativity, tolerance to other cultures, cultural awareness, attitude towards the preservation of art and cultural heritage, enabling the ability to experience and re-experience cultural creations, understanding the importance of intercultural dialogue, building cultural identity, and learning about one's own culture and the cultures of other nations.

In the context of culture and arts education, the experimental programme included an interdisciplinary project in collaboration with a famous Slovenian composer. The project aimed to enable the pupils to engage in the musical experience of the creative process with the help of an artist. Inspiration for the creative process were historical events of the 20th century.

4 The term 'interdisciplinary' perspective describes a specific form of interdisciplinary interactions. The typology by Klein (2010) is being used: multidisciplinary (juxtaposing, sequencing and coordinating; absence of or partial integration); 'interdisciplinarity' (integrating, interacting, linking, focusing, blending; integration); transdisciplinarity (transending, transgressing, transforming; full integration).

The experiment comprised:

- 12 music lessons (37.5% of all music lessons in the ninth grade) covering the following topics: Impressionism, Science and art in the 20th century, Music in the 1st half of the 20th century, Music in the 2nd half of the 20th century, Slovenian music in the 1st half of the 20th century, Slovenian music in the 2nd half of the 20th century, jazz;
- 25 history lessons (39.0% of all history lessons in the ninth grade) covering the following topics: World War I, the world between the World Wars, Slovenians between the World Wars, World War II, Slovenians during World War II, the world after World War II;
- 14 lessons (6 music lessons, 2 history lessons, 6 lessons before and after class) – implementation of the interdisciplinary project *Music through History* in collaboration with a composer.

To study the effectiveness of interdisciplinary teaching in music education and history while implementing objectives of arts and cultural education, we used an experimental method of empirical/analytical pedagogic research paradigm.

The survey was designed as a single factor experiment with classes serving as comparison units. The experimental factor had two modalities: (1) teaching music education and history according to standard curriculum and traditional teaching methods; (2) teaching music education and history according to the standard curriculum with multidisciplinary and interdisciplinary perspectives, implementing the objectives of arts and cultural education in the intended and delivered school curriculum and including an interdisciplinary project in collaboration with a composer.

Research Hypotheses

- H 1.1: We presume that after the experiment, the pupils from the experimental group will have a higher degree of interest in classical music of the 20th century than the pupils from the control group.
- H 1.2: We presume that after the experiment, the pupils from the experimental group will have a higher degree of interest in a musical composition, classified as a classical composition of the 20th century, than the pupils from the control group.
- H 1.3: We presume that during the experiment, the pupils from the experimental group will have listened, at their initiative, to more classical compositions from the 20th century than the pupils from the control group.

Study Population

We surveyed four classes of ninth graders from two Slovenian primary

schools (aged fourteen to fifteen).

As the participating schools were randomly chosen, there were initial problems with the inability of the schools and teachers to cooperate. Once the schools were acquired, we divided pupils into two groups: the control group ($n = 33$) and the experimental group ($n = 43$). Due to the extended work and preparations needed in the experimental group, we have, in assigning the roles of research groups, considered the willingness of music and history teachers at the specific school to implement the experimental programme.

The initial state has indicated that there were no statistically significant differences between the pupils of the experimental and the control group, regarding the gender ($\chi^2 = 0.244$; $g = 1$; $P = 0.622$); the attendance of music school ($\chi^2 = 0.045$; $g = 1$; $P = 0.832$); the level of musical education of pupils parents (mother: $\chi^2 = 3.661$; $g = 3$; $P = 0.160$; father: $\chi^2 = 1.562$; $g = 3$; $P = 0.668$); the frequency of listening to music with parents in childhood ($\chi^2 = 1.275$; $g = 2$; $P = 0.529$) and the musical genres pupils were most frequently listening to with their parents in childhood ($\chi^2 = 12.846$; $g = 11$; $P = 0.303$).

In terms of statistical hypothesis testing, the two selected groups of pupils represent a simple random sample from a hypothetical population.

Data Collection Procedures and Instrument

Prior to conducting the experiment, we selected the participating classes from the chosen primary schools, which provided us with some general information. Using a preliminary questionnaire and music examples, we have defined the music genres (rock, turbo-folk, metal, R'n'B, reggae, rap, house/techno, jazz, punk, classical music, popular folk music, pop, traditional folk music) recognised by pupils. Then we gathered information on the initial and final states of the control group and the experimental group by means of a questionnaire and musical interest test (for the final state). Research instruments had been designed specifically for the survey.

The initial questionnaire comprises five closed types (multiple answers) questions referring to the study population, which are not repeated in the final questionnaire and question regarding the ranking of the level of interest in the specific musical genre. *The final questionnaire* comprises two questions (one closed type: ranking of musical genres; one semi-open question: self-motivated listening).

The validity was ensured with the pilot study on a sample of pupils ($n = 30$) from the 9th grade of a primary school in Ljubljana. The final list of musical genres was determined based on a pilot study, which included 9th-grade primary school pupils ($n = 20$) who identified the most familiar musical genres.

The reliability of the questionnaire was achieved with the same unambiguous questions for all respondents. The objectivity of the questionnaire was ensured by closed-ended questions, whereby the answers were not subjected to subjective assessment. Clear and unambiguous instructions were given in solving the questionnaire.

The *musical interest test* comprises 14 consecutive numbers, each number representing the particular piece of music: (1) Queen: The Show Must Go On; 2) System of a Down: Toxicity; 3) Pankrti: Bandiera Rosa; 4) Atomic Harmonic: Turbo Polka; 5) Destiny's Child: Lose my Breath; 6) Richie Spice: Youth them cold; 7) Cypress Hill: How I could kill a man; 8) DJ Umek: Posing As Me; 9) Maceo Parker: Pass the Peas; 10) Johann Sebastian Bach: Bandiniere; 11) Avseniki: Na Roblek; 12) Katy Perry: California Gurls; 13) Vlado Kreslin: Vsi so venci vejli; 14) Krzysztof Penderecki: Threnody to the Victims of Hiroshima). Prior to and after the experiment, pieces of music were evaluated (level of interest: 1 - the lowest; 10 - the highest; familiarity with pieces of music: yes/no) by pupils.

The validity of the test of musical interests was ensured by pieces of music representing the considered musical genres. Cronbach's alpha coefficient (α) was used to determine the reliability of the musical interest test. The coefficient is $\alpha = 0.823$ for the initial test and $\alpha = 0.813$ for the final, which indicates that the test of musical interests is reliable. The objectivity of the musical interest test was ensured by a closed type of question and a given scale for measuring the level of interest. The evaluation criteria for the responses were uniform. Pupils of the control and experimental group did not listen to any of the included pieces of music before the experiment during the school process of the third educational cycle. During the experiment, students in both comparison groups listened to a composition under number fourteen as part of the expressionism theme.

Data processing

The data were processed at descriptive and inferential levels, using the following statistical methods: Frequency distribution of variables (f , $f\%$), Arrays of variables by average ranks (R), χ^2 test (Pearson's χ^2 test) of the hypothesis of independence, Mann-Whitney U-test, Cronbach's alpha (reliability of musical preferences test).

Results

Interests in Classical Music

Pupils in the two comparison groups had to indicate their musical interest towards thirteen music genres. Before engaging in the study, we carried out a survey, in which pupils were asked to write down the genres they know

best, together with examples of musical pieces. The analysis showed that pupils recognised the following musical genres: rock, turbo-folk, metal, R'n'B, reggae, rap, house/techno, jazz, punk, classical music, popular folk music, pop, traditional folk music. These were included in the questionnaire used in the study, where pupils ranked the musical genres accordingly. They used number one to indicate their favourite genre and number thirteen for the least favourite one. We shall only present the results regarding classical music of the 20th century, which is the subject of our hypotheses.

Table 1

Differences between the experimental (EG) and the control group (CG), regarding their level of interest in classical music

Music genre	Group	Rank average R	Mann-Whitney test	
			U	P
Classical music	EG	33.90	495.5	.035
	CG	44.50		

Prior to the experiment, the Mann-Whitney test results showed no statistically significant differences between the pupils in the experimental group and those in the control group regarding their interest in classical music ($U = 607.0$; $P = .277$). Table 1 indicates a statistically significant post-experiment difference between the two comparison groups regarding their interest in classical music ($P = .035$). The pupils demonstrated a higher level of interest in the experimental group. The results thus confirm our hypothesis H 1.1.

Interest in a Particular Classical Composition

During the test of musical interest, pupils listened to fourteen musical compositions from various music genres. The fourteenth composition was a classical piece from the 20th century, which is included in the musical education curriculum of the ninth grade of primary school and was a part of the learning process in both comparison groups. Pupils graded the compositions on a scale from 1 to 10, number 1 representing the lowest and number 10 the highest level of interest. In addition, they had to indicate whether they had been familiar with each composition prior to the test. The following results apply to the musical composition that is directly connected with our hypothesis.

Table 2

Differences in the range of musical interest in musical compositions between the experimental (EG) and control (CG) groups

Musical composition	Group	Rank average R	Mann-Whitney test	
			U	P
Krzysztof Penderecki: 'Threnody to the Victims of Hiroshima'	EG	53.99	43.500	.000
	CG	18.32		

Prior to the experiment, there were no statistically significant differences between the two comparison groups regarding their interest in the composition ($U = 656.6$, $P = .296$). However, a statistically significant difference between the experimental and the control group was noted after the experiment ($P = 43.500$, $P = .000$), with a higher level of interest in the composition *Threnody to the Victims of Hiroshima* identified by the pupils in the experimental group. The results thus confirmed our hypothesis H 1.2.

Because the composition was a part of the learning process in both groups, we also tested the evaluation of the familiarity with the composition. Before the experiment, there were no statistically significant differences between the comparison groups regarding their familiarity with the respective composition. None of the pupils from the experimental or control groups had known the *Threnody to the Victims of Hiroshima*. After the experiment, a statistically significant difference exists in familiarity with the composition between the two comparison groups ($\chi^2 = 19.101$, $g = 1$, $P = .000$), the composition was largely recognised by the pupils of the experimental group ($f\% = 93.0\%$) and in a lesser extent by pupils of the control group ($f\% = 48.5\%$).

Self-motivated Listening to the Classical Music of the 20th Century

During the experiment, neither the pupils in the experimental group nor those in the control group were given any instructions regarding intentional listening to any classical music. Also, their school tests in music education and history did not include any listening tasks. The results of the χ^2 test of the hypothesis of independence between pupils groups (EG: experimental group, CG: control group) after the experiment have shown that there is a statistically significant difference in the pupils' self-motivation for listening to classical music of the 20th century ($\chi^2 = 20.535$; $g = 1$; $P = .000$); 55.8% of pupils of the experimental group reported listening to the classical composition at their initiative, and 6.1% of pupils in the control group did.

The most listened to composition at pupils' (EG) initiative was *Einstein on Beach* (Glass), *Arabesque* (Debussy) and *The Moonfleck* (Schönberg). Other answers of pupils encompassed: *Lan* – (Choir song from the 20th century); *Opera – Wozzeck*; *Threnody to the Victims of Hiroshima*; *Classical Symphony*; *October Cantata*; *Prelude to the Afternoon of a Faun*; *I do not recall the title of the composition*. In the control group, two pupils listened to a composition from the 20th century: *Ljubljana Postcards* (Dekleva – Works for a piano from the 20th century), and one of the compositions was not named. Based on the presented results, we can confirm hypothesis H 1.3.

Discussion and conclusions

In the present study, we examined the efficiency of the experimental programme of interdisciplinary interaction, connecting music and history, while implementing the arts and cultural education objectives. In that process, we were focusing on increasing the musical preferences of pupils, especially the preference for music genre and specific composition of classical music of the 20th century, and creating an environment with different musical experiences that would encourage pupils to include listening to classical music in their leisure activities. The study results have confirmed the positive influence of the designed experimental programme of teaching, as opposed to the traditional one, regarding the pupils' musical preferences. The pupils of the experimental group have shown higher levels of interest in classical music of the 20th century as a genre and specific compositions and have listened to more classical composition at their initiative in comparison to pupils from the control group. The interdisciplinary aspect of the experimental programme with the integration of music education and history offered pupils an in-depth perception and an analytical approach to various music-related subject matters, with classical music playing a particularly important role. The pupils, through classical music, explored the events and lives of people living in the 20th century. Unveiling the historical background of the musical compositions contributed to experiencing and understanding music at a more profound level and provided a possibility of an emotional response.

In contrast, musical compositions helped pupils (through their musical expression) to understand the nature of historic events better. A higher degree of interest in *Threnody to the Victims of Hiroshima*, expressed by the pupils of the experimental group, was related to the pupils' associations of musical elements with their perception of the horrors of war and atomic bombings, which is why they experienced the composition more intensely and emotionally. As Kemperl

(2013) stated, when pupils discuss the context of origin, the idea behind it, and the reasons for the creation of the work of art, they discuss the world, broadening their horizons and recognising the problems of modern society.

From the neurological aspect, due to the development of the brain (Galvan et al., 2006; Sturman & Moghaddam, 2011), adolescents are prone to emotional behaviours; therefore, the musical preferences of adolescents are, among other factors, influenced by a strong connection between music and emotional response (Miranda & Gaudreau, 2011). Various researchers have proven that empathic behaviour is connected with the relationship between an emotional expression of music itself and the emotions felt by the listener (Evans & Schubert, 2008; Schubert, 2013). Furthermore, some researchers argue that familiarity with non-musical elements of musical compositions results in a higher level of musical interest (Johnson, 2009; Thompson et al., 2008).

Another factor of musical preference that has been considered when designing the experimental programme was the manipulation with the familiarity of specific compositions. That has been developed on the basis of the repetitive and analytical listening of composition in music and history lessons by pupils of the experimental group. At the end of the experiment, they showed higher levels of interest in the particular piece than pupils from the control group. Pupils of the experimental group perceived classical compositions of the 20th century as less complex and difficult, which positively impacted their musical interest. These results are confirmed by other studies (North & Hargreaves, 2008; Orr & Ohlsson, 2001), as a higher frequency of listening to a composition reduces its complexity as perceived by the listener, which in turn elevates the level of preference and helps the listener to develop listening skills (Oxenham et al., 2003).

An important aspect of the experimental programme was also the implementation of the arts and cultural education. Through developmental and objective-related models of teaching, pupils of the experimental group were able to experience and re-experience cultural creations and develop critical thinking, creativity, and aesthetic sensitivity. The concept of arts and cultural education was also comprised of an interdisciplinary project, which allowed pupils to identify and explore their creative potential, based on the features of classical music of the 20th century, while being inspired by historical events. Pupils' own musical experience through the creative process resulted in a better understanding of the genre and motivated them to listen to classical compositions at their initiative, outside the school environment. Vuk et al. (2015) argue that when the creative process is aimed at creative problem solving, creating original ideas, expressing thoughts and feelings, communicating with the

environment, being sensitive to moral and social issues, it encourages student's motivation and identification with student's work.

Furthermore, according to Green (2006), negative experience with certain types of music might arise due to being unfamiliar with a particular musical style, to the point that we find the musical syntax boring or feel that the music is not ours. Making pupils feel closer to a musical style makes it more approachable, understandable, and more their own, which in turn affects their interest in it. Furthermore, some authors discovered that pupils with an opportunity to positively experience music (in our case, collaboration with an artist) are encouraged to extend their musical lives beyond the classroom (Cabedomas & Diaz-Gómez, 2013).

The limitation of the study can be recognised in the size of the research sample and thus in the availability for generalisation. Furthermore, based on the results, it is not possible to conclude that the pupils' musical preferences for classical music had been entrenched, as there is no evidence that they still listen to classical music at their initiative. Further research that would monitor the preferences over a longer period would be welcomed. However, we find the results encouraging, as they offer an example of possible paths towards the positive development of musical preferences. The experimental model offers guidelines for effective planning of interdisciplinary interaction and implementation of arts and cultural education; furthermore, it contributes to greater awareness of the importance of partnerships between schools and artists.

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Biographical note

JERNEJA ŽNIDARŠIČ, PhD, is an assistant professor in the field of didactics of music education at the Faculty of Education, University of Maribor, Slovenia. Her research interest include interdisciplinary connections, arts and cultural education as well as listening to music in educational settings. In the field of her professional work she strives for closer connections between research work and practice.