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STUDENTS' MUSICAL PREFERENCES IN CHILDRENS' MAJOR- AND MINOR-KEY SONGS

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Abstract/Povzetek.
This paper explores elementary school students' music preferences in terms of songs authored for children and traditional major- and minor-key songs and the influence of familiarity of the music on their music preferences. The questionnaire and sound questionnaire were administered to 216 students attending the second, third, seventh and eighth grades of elementary school in Sinj, Croatia. The results confirm the influence of age and gender on students' music preferences concerning songs authored for children and traditional songs in major and minor keys. Furthermore, all the participants prefer major-key songs to minor-key songs. Finally, it was established that familiarity with a piece of music is a significant factor affecting the music preferences of the participants.

Glasbene preference šolarjev glede otroških pesmi v duru in molu
Članek proučuje glasbene preference osnovnošolcev glede umetnih in ljudskih pesmi v duru in molu ter vpliv poznavanja glasbe na njihove glasbene preference. Kot del raziskave sta bili med 216 učenci drugega, tretjega, sedmega in osmega razreda osnovne šole v Sinju izvedeni pisna in zvočna anketa. Rezultati potrjujejo vpliv starosti in spola na glasbene preference učencev glede umetnih in ljudskih pesmi v duru in molu. Vsem udeležencem so bile bolj všeč pesmi v duru kot tiste v molu. Zaznali smo tudi, da je poznavanje pesmi pomemben dejavnik, ki vpliva na glasbene preference udeležencev.

Keywords:
preference, music lessons, children's songs, major mode, minor mode

Ključne besede:
glasbene preference, pouk glasbe, otroške pesmi, dur, mol

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Introduction

Music preferences are short-term estimates of liking for music, while musical taste represents relatively stable, long-term behaviour towards and evaluation of music and is a more permanent disposition representing the totality of individual preferences (Mirković-Radoš, 1996). Music preferences are formed under the influence of numerous factors, the most significant of which are related to the characteristics of the music and the characteristics of the listener (Dobrota & Reić Ercegovac, 2016).

The results of the studies show that tonality is a musical-expressive component that is significantly associated with music preferences. Thus, Crowder points out that the term major/minor mode is closely related to emotions, and he thinks that "... the connection of the major mode with the emotion of happiness and minor mode with the emotion of sadness is the strongest link between the musical structure and the language of human emotions" (Crowder, 1984, 4).

Some studies also point to a relationship between major-sad and minor-happy associations when the modes are paired with time and dynamics (Hunter et al., 2010; Ladinig & Schellenberg, 2012; Schellenberg & Von Scheve, 2012). Nawrot (2003) states that emotional perception of music may be caused by innate perceptual predispositions and learned associations that are developed in childhood. Adachi and Trehub (1998) conducted their study of children aged 4 to 12 years old and concluded that these children rely on variations in tempo, dynamics and overall pitch as indicators of emotional perception in music. Kratus (1993) found that Western children 6 to 12 years old are able to perceive sadness or happiness in music, with only small differences between different age groups.

Cultural factors and learned associations also play a significant role in how major or minor modes may be emotionally perceived (Bowling et al., 2012). The familiarity of the music can also play an important role in determining whether emotion in music is perceived as happy or sad, because that familiarity leads to enjoyment of and happiness in listening to music (Temperley & Tan, 2013).

Dobrota and Reić Ercegovac (2015) have explored the relationship between music preferences for different mode and tempo and personality traits. Results showed that in comparison to male students, female students reported a greater range of music preferences, regardless of tempo and mode, while both males and females showed a greater degree of preference for musical examples in fast tempo and a major key. Emotional stability and optimism were significant predictors of a preference for music in fast tempo and a major key, while openness to experience, introversion and gender were significant predictors of preference for a slow tempo and music in a minor key.

Aim of research, research problems and hypotheses

The aim of this study was to examine elementary school student's music preferences concerning songs by children's authors and traditional songs in major and minor modes and the influence of familiarity of music on their music preferences. In order to achieve this aim, we attempted to address the following issues:

1. To examine the influence of age on music preferences in terms of songs by children's authors and traditional songs.

2. To examine the influence of gender on music preferences in terms of songs by children's authors and traditional songs.

3. To examine the influence of major/minor mode on music preferences concerning songs by children's authors and traditional songs.

4. To examine the relationship between familiarity of songs by children's authors and traditional songs and music preferences concerning songs by children's authors and traditional songs.

5. Based on the aim and the research problems, the following hypotheses were set:

H1: In comparison to older students, younger students will show greater preference for songs by children's authors and traditional songs.

H2: In comparison to male students, female students will show greater preference for songs by children's authors and traditional songs.
H3: Students will show greater preference for songs by children's authors and traditional songs in a major key, compared to songs by children's authors and traditional songs in a minor key.
H4: Students will show greater preference for familiar songs by children's authors and traditional songs, compared to unfamiliar songs by children's authors and traditional songs.

Method

Participants

Testing was conducted in Sinj, Croatia, on a sample (N=216; F=102, M=114) of second-grade students (N=45), third-grade students (N=48), seventh-grade students (N=52) and eighth-grade students (N=71) (Table 1). The second- and third-grade students in the data analysis were grouped into a group of *younger* students, while the seventh- and eighth-grade students were grouped into a group of *older* students.

Table 1: Structure of the sample (N = 216).

GENDER	**N**	**GRADE**	**N**
M	114	2nd	45
		3nd	48
F	102	7th	52
		8th	71
Total		**216**	

Instrument and procedure

For the purpose of this research, a music CD was prepared, containing 16 examples of songs by children's authors and traditional songs in major and minor keys (Table 2). The distribution of the preference for children's songs in major and minor keys is significantly different from the normal distribution, so further analyses will use methods of nonparametric statistics (Mann-Whitney U-test, Wilcoxon matched pairs test, correlations).

Table 2: Psychometric characteristics of the subscales Preference for children's songs in major and minor key.

	MAJOR KEY	**MINOR KEY**
	The Cat is Purring (traditional song) *Best Wishes to Mummy (authored song)* *Little Sanja's Sleigh (authored song)* *Twinkle, Twinkle, Little Star (traditional song)* *Dance, Dance (traditional song)* *My Ferandin (traditional song)* *Winter Is Gone (traditional song)* *Sea Breeze (authored song)*	*In the Rain (authored song)* *A Town is Shining (traditional song)* *Under a Rock There Is a Crab (authored song)* *Three Girls (traditional song)* *Autumn Song (authored song)* *Where Is That Yellow Flower? (authored song)* *Ladybird (authored song)* *It's Raining (traditional song)*
Cronbach α	0.81	0.80
M (sd)	31.40 (5.99)	29.52 (6.03)
range	12-40	14-40
average inter-item correlation	0.35	0.35
K-S d	0.1 , $p<0.05$	0.07 , $p<0.05$

For the purpose of this research, a questionnaire consisting of two parts was prepared. The first part comprised questions related to sociodemographic characteristics (gender, age). The second part of the questionnaire related to the research into music preferences. The questionnaire about music preferences consisted of an odd number of music examples from the CD and a five-degree assessment scale (1=strongly dislike; 2=dislike; 3=neither like nor dislike; 4=like; 5=strongly like). Participants were also asked to assess the familiarity of each musical example by circling *Yes* or *No* next to each assessment scale.

Testing was conducted in school classrooms according to a pre-arranged schedule. Testing was collective, with 15-20 participants in each group. The purpose of conducting the research was briefly explained, anonymity was guaranteed, and the participants were asked to answer the questions honestly and accurately. Participants in all groups filled out the first part of the questionnaire and then evaluated the musical examples. When examining the musical preferences, the participants listened to a musical example lasting about one minute and then assessed the degree of liking in the questionnaire.

Results and discussion

Table 3 shows the average degree of preference for the music examples. The students showed the greatest preference for the traditional song *Twinkle, Twinkle, Little Star* and the least preference for *Ladybird,* a song by a children's author.

Table 3: The average degree of preference for the music examples.

Music examples	M	min.	max.	SD
In the Rain (authored song)	3.29	1.00	5.00	1.08
Sea Breeze (authored song)	3.75	1.00	5.00	1.10
A Town Is Shining (traditional song)	3.57	1.00	5.00	1.22
Winter is Gone (traditional song)	4.01	1.00	5.00	1.08
Under a Rock there is a Crab (authored song)	3.23	1.00	5.00	1.14
My Ferandin (traditional song)	3.82	1.00	5.00	1.21
Three Girls (traditional song)	3.75	1.00	5.00	1.20
Twinkle, Twinkle, Little Star (traditional song)	4.63	1.00	5.00	0.92
Ladybird (authored song)	2.97	1.00	5.00	1.28
Best Wishes to Mummy (authored song)	4.20	1.00	5.00	1.04
It's Raining (traditional song)	3.94	1.00	5.00	1.24
Dance, Dance (traditional song)	3.60	1.00	5.00	1.31
Autumn Song (authored song)	4.32	1.00	5.00	1.08
Little Sanja's Sleigh (authored song)	3.63	1.00	5.00	1.22
Where Is That Yellow Flower? (authored song)	4.45	1.00	5.00	0.95
The Cat Is Purring (traditional song)	3.75	1.00	5.00	1.19

H1: In comparison to older students, younger students will show greater preference for songs by children's authors and traditional songs.

In order to investigate the influence of age on student's preferences concerning songs by children's authors and traditional songs, the Mann-Whitney U-test was calculated. The results confirm that the music preferences of younger and older

students do differ significantly (Table 4, Figure 1). Younger students show greater preference for songs by children's authors and traditional songs, so the first hypothesis was confirmed.

Table 4: Differences in the children's preferences for songs by children's authors and traditional songs by age.

Music preferences	**C**	**U**	**z**	**p**
younger students (2nd and 3rd grade)	4.09	4219.0	3.29	0.001
older students (7th and 8th grade)	3.75			

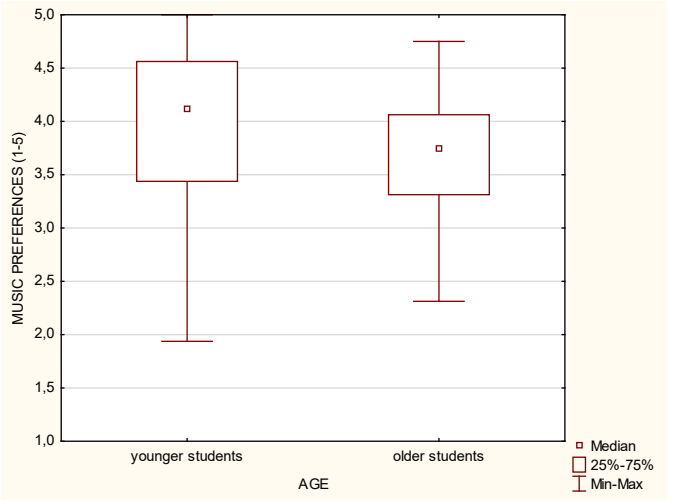

Figure 1: Differences in the children's preferences for songs by children's authors and traditional songs by age

Starting from the open-earedness hypothesis (Hargreaves, 1982), LeBlanc (1991) explains the general pattern of music preferences throughout life, emphasizing that young children are more open and more tolerant towards unfamiliar musical styles. Consequently, primary education teachers have the opportunity to expose young children to diverse high-quality music experiences, thus creating the basis for further development of their music preferences.

H2: In comparison to male students, female students will show greater preference for songs by children's authors and traditional songs.

In order to examine the influence of gender on students' preferences for songs by children's authors and traditional songs, the Mann-Whitney U-test was calculated (Table 5, Figure 2). The results point to a difference between male and female students in their preference for songs by children's authors and traditional songs. Female students show greater preference for such songs, so the second hypothesis was confirmed.

Table 5: Differences in preferences for songs by children's authors and traditional songs by gender.

Music preferences	**C**	**U**	**z**	**p**
Male students	3.74	4664.5	-2.51	0.012
Female students	3.92			

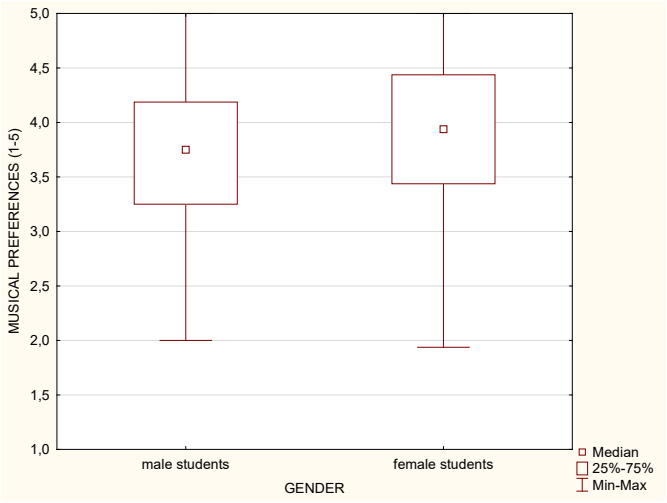

Figure 2: Differences in preferences for songs by children's authors and traditional songs by gender

The research results generally confirm that males and females do respond to music in different ways, but also that women have more positive attitudes towards music (Christenson & Peterson, 1988; Harrison & O'Neill, 2003).

H3: Students will show greater preference for songs by children's authors and traditional songs in a major key, compared to songs by children's authors and traditional songs in a minor key.

In order to investigate the influence of tonality on students' preference for songs by children's authors and traditional songs, the Wilcoxon matched pairs test was applied (Table 6, Figure 3). The results show that students prefer children's songs in a major key to children's songs in a minor key, so the hypothesis was confirmed.

Table 6: Differences in preferences for songs by children's authors and traditional songs by tonality.

Tonality	**C**	**v < V**	**Z**	**p**
Major	4.00	32.00	5.02	0.000
Minor	3.75			

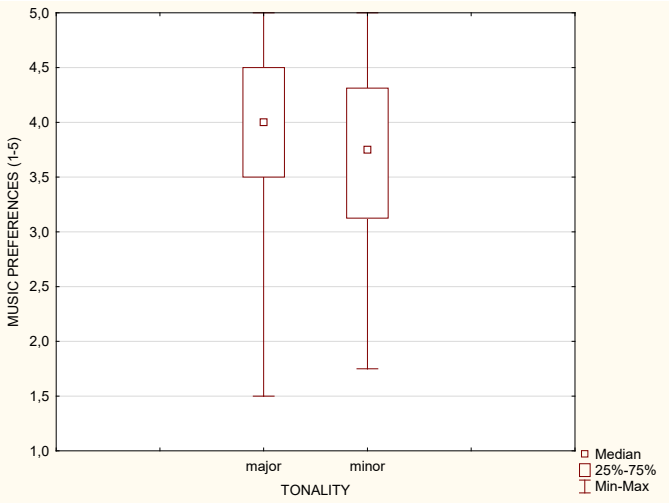

Figure 3: Differences in preferences for songs by children's authors and traditional songs by tonality

These results are consistent with results from studies confirming that the participants generally preferred music in a major key (Dobrota & Reić Ercegovac, 2014; 2015) and attribute to such music positive connotations (Kastner & Crowder, 1990). However, Gregory, Worrall and Sarge (1996) consider that linking tonality and emotional response to music is a result of learning and socialisation with the standards of the Western European artistic music tradition.

H4: Students will show greater preference for familiar songs by children's authors and traditional songs, compared to unfamiliar songs by children's authors and traditional songs.

In order to examine the relationship between the familiarity of music and student's preferences for songs by children's authors and traditional songs, correlations between familiarity and musical preference were calculated (Table 7). There were such correlations for fourteen musical examples, confirming the final hypothesis.

Table 7: Correlations between music preference and familiarity of music.

Music examples	**Unfamiliar (f)**	**Familiar (f)**	**Correlation between preference and familiarity**
In the Rain	154	62	0.23*
Sea Breeze	120	96	0.21*
A Town Is Shining	163	53	0.33*
Winter is Gone	93	123	0.09
Under a Rock there is a Crab	201	15	0.20*
My Ferandin	137	79	0.36*
Three Girls	160	56	0.37*
Twinkle, Twinkle, Little Star	6	210	0.05
Ladybird	195	21	0.26*
Best Wishes to Mummy	53	163	0.44*
It's Raining	77	139	0.39*
Dance, Dance	166	50	0.33*
Autumn Song	21	195	0.52*
Little Sanja's Sleigh	139	77	0.30*
Where Is That Yellow Flower?	28	188	0.45*
The Cat Is Purring	119	97	0.34*

*$p<0.05$

These results are in line with those from numerous studies confirming a positive linear correlation between the frequency of listening to music and music preferences (Carper, 2001; Dobrota & Reić Ercegovac, 2016; Finnäs, 1989; North & Hargreaves, 2008). The musical-pedagogical implications of the results relate to the need for repeated, active listening and performance of music during music lessons.

Conclusion

The results of this study showed that younger students and female students do show greater preference for songs by children's authors and traditional songs. All participants preferred songs by children's authors and traditional songs in a major key to those in a minor key. Finally, students show greater preference for familiar songs by children's authors and traditional songs, compared to unfamiliar songs of both types.

It should be noted that the results apply to students from a specific cultural background in Croatia. The limitations of the research are also reflected in the fact that the research did not include all the factors that could potentially have affected music preferences.

Such results have a number of theoretical-practical implications. The fact that younger students show greater music preference is of particular importance to the primary school teacher, since he has the opportunity to expose students to varieties of music from the earliest age. Younger children are open and flexible to perceive different musical styles, as they have not yet formed their musical taste.

Furthermore, the research results confirm that participants prefer musical examples in major keys. Such results can be explained by the fact that most of the songs in the textbooks are major key songs, which probably affects the musical preferences of the students. However, this does not exclude the possibility of students learning the songs in a minor key, which would surely enrich their musical experience.

Finally, the fact that students show greater preferences for familiar, compared to unfamiliar music, points to the importance of repeated and active listening to and performance of music during music lessons. The familiarity of music leads to enjoyment and happiness in listening to music (Temperley & Tan, 2013), and only in this way will students be introduced to the structure of musical pieces and increase the range of their music preferences.

This research could be further improved by obtaining a larger sampling population of subjects, such as high school students, university students or adults.

References

Adachi, M., & Trehub, S. E. (1998). Children's Expression of Emotion in Song. *Psychology of Music, 26* (2), 133-153. doi: .1177/0305735698262003

Bowling, D. L., Sundararajan, J., Han, S., & Purves, D. (2012). Expression of Emotion in Eastern and Western Music Mirrors Vocalization. PLoS ONE, *7*(3), e31942. doi:10.1371/journal.pone.0031942

Carper, K. (2001). The effects of repeated exposure and instructional activities on the least preferred of four culturally diverse musical styles with kindergarten and pre-k children. *Bulletin of the Council for Research in Music Education, 151,* pp. 41–50.

Christenson, P. G., & Peterson, J. B. (1988). Genre and gender in the structure of music preferences. *Communication Research, 15,* pp. 282–301. doi: 10.1177/009365088015003004

Crowder, R. G. (1984). Perception of the major/minor distinction: I. Historical & theoretical foundations. *Psychomusicology: A Journal of Research in Music Cognition, 4*(1–2), pp. 3–12. doi:10.1037/h0094207

Curtis, M. E., & Bharucha, J. J. (2010). The minor third communicates sadness in speech, mirroring its use in music. *Emotion, 10*(3), pp. 335–348. doi: 10.1037/a0017928

Dobrota, S., & Reić Ercegovac, I. (2014). Student's musical preferences: the role of music education, characteristics of music and personality traits. *Croatian Journal of Education, 16,* pp. 363–384.

Dobrota, S., & Reić Ercegovac, I. (2016). *Why we love what we listen to: music-pedagogical and psychological aspects of musical preferences.* Split: Faculty of Humanities and Social Sciences University of Split.

Dobrota, S., & Reić Ercegovac, I. (2015). The relationship between music preferences of different mode and tempo and personality traits – implications for music pedagogy. *Music Education Research, 17,* pp. 234–247. doi: 10.1080/14613808.2014.933790

Finnäs, L. (1989). How can music preferences be modified? A research review. *Bulletin of the Council for Research in Music Education, 102,* pp. 1–58.

Gregory, A. H., Worrall, L., & Sarge, A. (1996). The development of emotional responses to music in young children (1996) *Motivation and Emotion, 20*(4), pp. 341–348, doi: 10.1007/BF02856522

Hargreaves, D. J. (1982). The development of aesthetic reactions to music. *Psychology of Music. Special Issue,* pp. 51–54.

Harrison, A. C., & O'Neill, S. A. (2003). Preferences and children's use of gender-stereotyped knowledge about musical instruments: Making judgements about other children's preferences. *Sex Roles, 49,* pp. 389–400.

Hunter, P.G., Schellenberg, E.G., & Schimmack, U. (2010). Feelings and perceptions of happiness and sadness induced by music: Similarities, differences and mixed emotions. *Psychology of Aesthetics, Creativity, and the Arts, 4*(1). pp. 47–56. doi:10.1037/a0016873

Kastner, M. P., & Crowder, R. G. (1990). Perception of the Major/Minor Distinction: IV. Emotional Connotations in Young Children. *Music Perception 8*(2):189-201, doi: 10.2307/40285496

Kratus, J. (1993). Eminence in music education research as measured in the Handbook of Research on Music Teaching and Learning [Electronic version]. *Bulletin of the Council for Research in Music Education, 118*, pp. 21–32.

Ladinig, O. & Schellenberg, E.G. (2012). Liking unfamiliar music: Effects of felt emotion and individual differences. *Psychology of Aesthetics, Creativity, and the Arts, 6*(2), pp. 146–154. doi:10.1037/a0024671

LeBlanc, A. (1991). Effect of maturation/aging on music listening preference: a review of the literature. *Paper presented at the Ninth National Symposium on Research in Music Behaviour, Canon Beach, Oregon, U. S. A.*

Mirković-Radoš, K. (1996). *Psihologija muzike.* Beograd: Zavod za udžbenike i nastavna sredstva.

Nawrot, E. S. (2003). The Perception of Emotional Expression in Music: Evidence from Infants, Children and Adults. *Psychology of Music, 31*(1), pp. 75–92. doi:10.1177/0305735603031001325

North, A. C. & Hargreaves, D. J. (2008). *The Social and Applied Psychology of Music.* New York: Oxford University Press.

Schellenberg, E.G. & Von Scheve, C. (2012). Emotional cues in American popular music: Five decades of the Top 40. *Psychology of Aesthetics, Creativity, and the Arts, 6*(3), pp. 196–203. doi:10.1037/a0028024

Temperley, D., & Tan, D. (2013). Emotional Connotations of Diatonic Modes. *Music Perception: An Interdisciplinary Journal, 30*(3), pp. 237–257. doi:10.1525/mp.2012.30.3.237

Turner, B., & Huron, D. (2008). A comparison of dynamics in major- and minor-key works. *Empirical Musicology Review, 3*(2), pp. 64–68.

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