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Primary education students' experience of the expressiveness of authentic modes in Gregorian chant

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Abstract

Expressiveness of the church modes is reflected in their character and association of certain states with a specific mode or single Gregorian composition which possesses unique expressiveness. An important characteristic of Gregorian chant on the tonality level is diatonic singing based on scales without chromatics, using only one semitone in the tetrachord whose musical structure reflects the expressiveness of Gregorian chant. Such expressiveness achieves character specificities which each mode respectively reflects. Various modal material in the form of typical melodic shifts in a certain composition conditions the expressiveness of Gregorian music and influences the listening impression and assessment of individual Gregorian tunes. The goal of this work is to examine primary education students' experiences of the expressiveness of Gregorian modes and explore if today's auditory sense accustomed to two tonality genres, major and minor, recognises what has been stored in the heritage of Gregorian chant repertoire for centuries. The research was conducted in the school year 2018/2019 with students of first, second, third and fourth grade of primary school (N=100). The results have shown that first and second grade students express higher auditory sensibility in recognizing specific characteristic of authentic Gregorian modes. Third and fourth grade students are audibly less open and perceptive considering tonal character differences in the authentic Gregorian modes.

Key words: *Gregorian chant; modality; old church scales; students in primary education*

Introduction

The term modal music unites musical theory and practice of the Ancient period, the Middle Ages and the Renaissance, entailing a wide field of tonal organisation¹ in the frame of *old music*. Gregorian music, which has been classified into *octoechos*, i.e. the system of eight scales, since the eighth century, is realised according to principles different from the functional ones characterising tonal genders of major and minor scales which started to prevail during the Baroque, introducing tonality in music. At the same time, this type of music represents the most extensive repertoire of modal monody music. In its melodic structure, it sublimates the experience of modality inherited from Ancient music, which had been developing naturally in the context of sacred medieval music.

General determinants of Gregorian chant

After its standardisation by Pope Gregory I (540 – 604), liturgical chant of first millennium Western Christianity was named Gregorian chant. It represents various repertoire of monody music created for Roman rite which includes Eucharistic celebration and Liturgy of the hours.² The repertoire of Gregorian heritage was created until the eighth century by joining various local traditions of liturgical chant (Koprek, 2013).

Main distinctive characteristics of Gregorian melody are diatonic unison singing based of the tonal system of eight church scales without the use of chromatics, and the rhythm set according to the spoken word, which results in melodic naturalness, spontaneity, festiveness and serenity (Martinjak, 1997).

Christian chant had been forming since the beginning of Christianity, uniting in itself many older traditions (Martinjak, 1997) such as monody singing and singing psalms in free rhythm, hence the foundation of Gregorianics, psalmody, is associated with the tradition founded in the fourth or third century BC (Chailley, 2006). An obvious example of Hebrew music's influence are liturgical acclamations *Amen* and *Hallelujah*, alongside which Hebrew chants also entered Christian rites (Martinjak, 1997). From the Eastern music Gregorian chant inherits melismas which represent vocalises on certain word syllables (Chailley, 2006), and music theory and philosophy from the Greek musical practice (Martinjak, 1997). Chailley (2006) claims that solid technical foundation for Church music could have come solely from the Greek musical theory, out of which the idea of specific influence of modal scales on human

¹ Specific organisation of different degrees in a certain modal mode into characteristic formulas has a role in shaping the original melodic scheme (Koprek, 2019).

² The repertoary of the Eucharist celebration or mass is comprised of the parts that change, i.e. the proprium: Entrance chant (Introitus), the Gradual (Graduale), the Sequence (Sequentia), the song before the proclamation of the Gospel (Alleluia), the Trope (Tropus), the Tract (Tractus), the Offertory (Offertorium), the Communion (Communio). The constant parts are: Lord, have mercy (Kyrie eleison), Glory to God (Gloria), I believe (Credo), Holy, Blessed (Sanctus, Benedictus) te Lamb of God (Agnus Dei). The Liturgy of the Hours consists of: a hymn (hymnus), an antiphon (antiphona), a psalm (psalmus), a repository (responsorium) and a canticle (cantica).

spirit was taken. On the other hand, Roman music served as a countermodel due to its function in secular spectacles and pagan sacrifice so, for the same reason, the first Christians abstained from the use of instruments.

In the cultural sense, liturgical chant of the Western church, with its mediation role between the music of Greek antiquity and Hebrew music, alongside the inculturation of the Western Christianity's spirit and medieval music, is the foundation of great part of today's European musical practice, Challey (2006) concludes, claiming a new musical technique that must have paved the way for today's music was created in medieval monasteries.

Compositional techniques of Gregorian chant have resulted in the strong connection between the Holy Scripture's text and melody, so the created chant represents the sound image of the text. This is corroborated with the idea of *sacred singing* which is, alongside the idea of a *singed prayer*, associated with Gregorian chant (Martinjak, 1997).

The basis of Gregorian modality theory

Gregorian modality had been developing in several developmental periods, starting from the *archaic modality* (until the 4th century), continuing with modal evolution of archaic modes (from the 4th to the 8th century), and reaching the first classification system of Gregorian repertoire in the eight scales in the 8th century (Koprek, 2019).

Today, Gregorian tonal system of the eight scales, deriving from the specific features of Gregorian melodies, is referred to with three synonyms: mode, old church scale and church mode. Modal system of Gregorian chant entails four basic or authentic modes and four plagal modes. The names of individual scales are classified with ordinal numbers: 1th Protus authenticus, 2nd Protus plagalis, 3rd Deuterus auth., 4th Deuterus plag., 5th Tritus auth., 6th Tritus plag., 7th Tetrardus auth., 8th Tetrardus plag. On the turn of the 10th century, another way of naming individual scales was introduced under Boeti's influence (1st Dorian, 2nd Hypodorian, 3rd Phrygian, 4th Hypophrygian, 5th Lydian, 6th Hypolydian, 7th Mixolydian, 8th Hypomixolydian), but without proper understanding of the scales, which resulted in using names of the Greek tonuses as the names of medieval modes. Hence, a discord between ancient Greek and medieval theory of the modes occurred. For example, medieval Dorian mode is in its range equal to Greek Phrygian mode (from *Re* to *Re*), and vice versa (Martinjak, 1997; Michels, 2004).

Important elements of these modes are: *nota finalis* or the pitch in which the chant usually ends, the dominant, range and characteristic intervals of the mode (Martinjak, 1997). Authentic modes are Dorian (re-re), Phrygian (mi-mi), Lydian (fa-fa) and Mixolydian (so-so). Their final notes correspond with the initial tone of the scale, and their dominant is regularly placed on the fifth of the mode's *final*, except in the Phrygian mode in which the dominant tone is *Ti* or *Do*. Plagal modes are derived from the authentic by narrowing the range of the scale for one fourth, and they gain the prefix *hypo* in their names³: Hypodorian (La-La), Hypophrygian (Ti-Ti), Hypolydian

³ Grč. hypó: below, lower, under

(Do-Do), Hypomixolydian (Re-Re). However, *nota finalis* of the derived modes remains the same as in the basic mode. Hence, Hypodorian mode has the final note *Re*, Hypophrygian *Mi*, Hypolydian *Fa* and Hypomixolydian *So*. Dominants of these modes lie on the third or fourth above the final note: the dominant of the Hypodorian mode is *Fa*, of Hypophrygian and Hypolydian is *La*, and of Hypomixolydian is *Do* (Martinjak, 1997).

Image 1 shows the basic elements of the modes.

1. Dorian

2. Hypodorian

3. Phrygian

4. Hypophrygian

5. Lydian

6. Hypolydian

7. Mixolydian

8. Hypomixolydian

Image 1. Basic elements of modal scales according to Hiley (as stated in Arnold, 1994, p. 1186) and Martinjak (1997, p. 168)

The system of original and derived scales is represented in such a way that the authentic is followed by a plagal mode, and the modes are marked by numbers in order; odd numbers mark the original and even mark the derived modes (Martinjak, 2005).

Expressiveness of the modes

Specific expressiveness of Gregorian melodies is a result of singularity of a certain modal setting classified within the scope of eight modal scales. A characteristic in melodic movement of authentic and plagal ways effecting their expressiveness is evident. The authentic modes build melody with centrifugal force from the dominant to the final note above or below, the plagal forms it around the final note with centripetal force (Martinjak, 1997), with the original modes regularly being of greater melodic range than the derived ones.

Some of the basic common intervals of authentic modal scales contribute to special melodic expression. In the Dorian mode they are minor third (*Re-Fa*), minor second (*Mi-Fa*) and the so-called Dorian, major, sixth (*Re-Ti*); in the Phrygian mode they are minor third (*Mi-So*) and the minor, Phrygian, second (*Mi-Fa*); in the Lydian mode they are major third (*Fa-La*), a semitone under the final note (*Fa-Mi*) and augmented, Lydian, fourth (*Fa-Ti*); in Mixolydian mode they are major third (*So-Ti*), the semitone (*Ti-Do*) and the Mixolydian, minor, seventh (*So-Fa*) (Martinjak, 1997).

Since the research was based on authentic modes, their expressiveness will be manifested with regards to *ethos*, i.e. the term modal feeling. It is a generally known fact that the philosophers in Ancient Greece associated the effects of music in modal scales with the world of morals. The same way of perceiving music has overflowed to medieval theory of modal scales when sought to determine and describe the specific musical activity pertaining to the music of the same modal categories. Medieval musical theorist Guido from Arezzo states that different modes „fit well with different states of the soul“ (D'Arezzo, 1993, acc. to Koprek, 2019). Observing atmospheres and characteristics which medieval musicians such as Guido, Contractus, Cotton and others ascribed to certain scales, Koprek (2019) concludes that the characteristics of modal scales are at times identical and sometimes different.

Comparing the characteristics of different Gregorian compositions of the same mode, Martinjak (1997) derives some general features of their expressiveness. For the Dorian mode, he states its effect as dignified and serene, suitable for interpreting texts for praying; it is grandiose and expressive. The Phrygian mode is attributed with features of celebration, glorification and deep sensitivity, whereas the Lydian mode has the character of power and strength, joy, awe and exaltation, although the occurrence of the flat *Ti* note creates the context of sorrow, empathy and sadness. The Mixolydian mode entails the feeling of joy, cheer, festivity and celebration.

In the field of art, for the purpose of the *ethos*, medieval times have widened the field of communication utilising visual art and the art of words in the aspirations of describing characteristics of certain old modes. Hence, the eight modes have been portrayed with four reliefs placed on two capitals in the great abbey church at Cluny, depicting human figures using Latin hexameter. Koprek (2019) places these relief images, alongside aphorisms, in the context of the same historical period, stating guidelines on understanding the expressiveness of a certain old mode. He associates the first, i.e.

Dorian mode, with longing for the Kingdom of God, characterising it as serious and mature. The third, i.e. Phrygian mode, is placed in the setting of Resurrection, and is ascribed with the feature *mysticus* – animated with the directedness to God. The seventh, i.e. Mixolydian mode, has in tradition been qualified as the *angelicus* – angel like, with an effect of ease, joyful and without severity.

The intent of this work was to explore musical sensibility of children in primary education regarding modality and examine their abilities of distinguishing between the characters of the compositions from the field of modal music. According to the research done by Blašković and Prša (2017), students in primary education have in great percentage expressed their liking of Gregorian chant (70,9 %), and stated they would gladly listen to Gregorian chant in Music lessons (67,3 %). Furthermore, over 80% of the students perceived Gregorian chant as soothing and pleasant: they experienced it as beautiful (79,1 %), interesting (70,9 %) and appealing (66,4 %). Building on the fact that Gregorian chant as a musical type is not a part of the National Curriculum Framework (2013) of the Ministry of Science and Education of Croatia, and consequently is not heard in Music lessons in primary education, listening to Gregorian chant due to its specificities can by all means contribute to student auditory sensibility and musical pluralism.

Methodology

Research problem and goal

In today's society auditory culture is burdened with the abundance of sounds and all kinds of music which can effect auditory overstimulation and decrease auditory sensibility. On the one hand, children listeners are in the first place immersed into the diversity of popular music on a daily basis, and on the other hand into the sound of classical music in its widest conception, and not significantly. Gregorian chant is a very specific musical construct which has been created attentively due to its expressiveness in the system of modes, with its own sound and specificities of meaning. The goal of this work is to examine the auditory sensibility of students in primary education regarding the assigned examples of Gregorian chant in four authentic modes.

Data collection procedures and instruments

Students' opinions about the expressiveness of the four authentic modes were collected with the use of Semantic differential rating scale. Semantic differential entails the auditory questionnaire that the students used to evaluate the expressiveness of the four listened to examples of Gregorian chant. The choice of musical examples in the authentic modes was based on the fact that determines the original modes as having greater range and expressiveness, so providing the possibility of easier recognition of the characteristics in relation to the plagal modes (Martinjak, 1997). On the other hand, the choice of authentic modes is dictated by time duration, limitations and demands of the research with regards to the subjects' age.

*Offertorium Iubilate Deo universa terra*⁴, performed by the ensemble Nova Schola Gregoriana under Albert Turca's⁵ artistic direction, was chosen for auditory image of the Dorian minor mode; *communio Benedicite, omnes angeli*⁶, performed by the soloists of Graduale Projecta⁷, was chosen as an example of the Phrygian mode; *Introutus Laetare Ierusalem*⁸, from the site Neumentrennung⁹, was chosen as an illustration of the Lydian mode; and *Graduale Dirigatur oratio mea*¹⁰, performed by the ensemble Nova Schola Gregoriana under Albert Turca's¹¹ artistic direction, was picked as the example of the Mixolydian mode.

The research was implemented during regular classes with primary education students, in agreement with their teachers. Students were familiarised with the purpose and goal of the research, without previous interventions regarding cognisance of Gregorian chant, in order to express their first impression of listening to Gregorian chant. Each example was listened to within a minute, paying attention to the logical break in the composition if one was necessary.

The questions of objective type (gender, class) were formed dichotomously. First grade and second grade students did not fill in the scale in the Semantic differential, due to the complexity of the questionnaire, but they gave dichotomous opinions about the expressiveness in accordance with the oppositely set adjectives. The reliability was checked with internal consistency method, and so Cronbach alfa coefficient was calculated at a satisfactory level ($\alpha=0,86$).

The Sample

The research included students from the first, second, third and fourth grade from primary schools in Zagreb and Sisak (N=100). 26 students from the first, 32 from the second, 19 from the third and 23 students from the fourth grade participated in the study. Figure 1 displays the distribution of relative frequencies of students according to the grades.

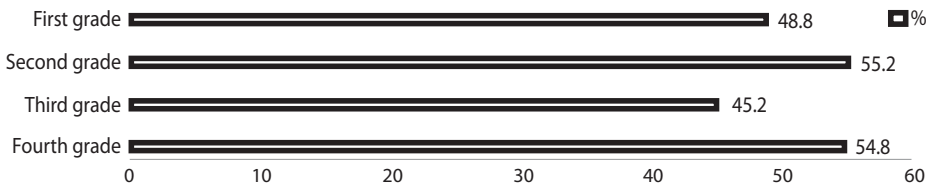


Figure 1. Distribution of the participants considering grades (N=100)

⁴ Graduale triplex, 1979. p. 227

⁵ https://www.youtube.com/watch?v=frptf5UPq_c (17.11.2018.).

⁶ Graduale triplex, 1979. p. 610

⁷ <https://www.youtube.com/watch?v=XgCw5x449ww> (17.11.2018.).

⁸ Graduale triplex, 1979. p. 108

⁹ <https://www.youtube.com/watch?v=o407MyBGVUc> (17.11.2018.).

¹⁰ Graduale triplex, 1979. p. 340

¹¹ <https://www.youtube.com/watch?v=GkcBFhG6wjs> (17.11.2018.).

Figure 1 shows equal representation of first grade and third grade students. The greatest number of students are from the second grade (55,2 %), while the least number is of students from the third grade (45,2 %). Gender wise, 49 % of the sample were girls and 51 % boys.

First grade and second grade students' opinions about the expressiveness of Gregorian chant

First and second grade students assessed the listened to examples of Gregorian chant dichotomously, according to the set of eleven bipolar adjectives. In fact, it was concluded that it would be easier to determine the students' opinions in a dichotomous way, without scales, when considering their age and demands of the Semantic differential. The polarisation of the adjectives was quite demanding considering the children's vocabulary. The children were given additional explanations of the meaning of certain words.

Table 1

Opinions of first grade and second grade students about the characteristics of Gregorian chant in the authentic modes (N=58)

	f	%	N		f	%
<i>Musical example 1 <i>Iubilate Deo universa terra</i></i>						
dignified	47	81.0	58	undignified	11	19.0
peaceful	52	89.7	58	restless	6	10.3
sensitive	53	91.4	58	harsh	5	8.6
prayer like	49	84.5	58	scattered	9	15.5
celebratory	40	69.0	58	casual	18	31.0
captivating	41	70.7	58	indifferent	17	29.3
powerful	26	44.8	58	weak	32	55.2
joyful	26	44.8	58	sad	32	55.2
admirable	42	72.4	58	repulsive	16	27.6
serious	53	91.4	58	frivolous	5	8.6
hopeful	46	79.3	58	hopeless	12	20.7
<i>Musical example 2 <i>Benedicite Dominum omnes angeli</i></i>						
dignified	44	75.9	58	undignified	14	24.1
peaceful	53	91.4	58	restless	5	8.6
sensitive	49	84.5	58	harsh	9	15.5
prayer like	49	84.5	58	scattered	9	15.5
celebratory	29	50.0	58	casual	29	50.0
captivating	42	72.4	58	indifferent	16	27.6
powerful	26	44.8	58	weak	32	55.2
joyful	20	34.5	58	sad	38	65.5
admirable	38	65.5	58	repulsive	20	34.5
serious	51	87.9	58	frivolous	7	12.1
hopeful	49	84.5	58	hopeless	9	15.5

	f	%	N		f	%
<i>Musical example 3 Laetare Jerusalem</i>						
dignified	52	89.7	58	undignified	6	10.3
peaceful	37	63.8	58	restless	21	36.2
sensitive	50	86.2	58	harsh	8	13.8
prayer like	45	77.6	58	scattered	13	22.4
celebratory	36	62.1	58	casual	22	37.9
captivating	43	74.1	58	indifferent	15	25.9
powerful	38	65.5	58	weak	20	34.5
joyful	28	48.3	58	sad	30	51.7
admirable	39	67.2	58	repulsive	19	32.8
serious	48	82.8	58	frivolous	10	17.2
hopeful	50	86.2	58	hopeless	8	13.8
<i>Musical example 4 Dirigatur</i>						
dignified	50	86.2	58	undignified	8	13.8
peaceful	43	74.1	58	restless	15	25.9
sensitive	50	86.2	58	harsh	8	13.8
prayer like	49	84.5	58	scattered	9	15.5
celebratory	41	70.7	58	casual	17	29.3
captivating	47	81.0	58	indifferent	11	19.0
powerful	31	53.4	58	weak	27	46.6
joyful	27	46.6	58	sad	31	53.4
admirable	40	69.0	58	repulsive	18	31.0
serious	50	86.2	58	frivolous	8	13.8
hopeful	45	77.6	58	hopeless	13	22.4

The frequency results show that students of the first and second grade are more inclined to evaluate Gregorian chant in the direction of the positive pole of the adjectives. Students experienced the first musical example in the Dorian mode as *peaceful*, *sensitive*, *prayer like*, *celebratory*, *captivating*, *admirable*, *serious* and *hopeful*. On the other hand, they experienced the same mode as *weak* and *sad*. Abstracted expressive features of the Dorian mode are described with the following adjectives: dignified, peaceful, grandiose, expressive and serious. Children from the first two grades have recognised this old church mode in almost all its components, out of which the most expressed experience is equal impression of seriousness and sensitivity (91,4%), although other adjective is more connected with the Phrygian mode.

The students experienced the other, authentic Phrygian mode in exactly the same way. They characterise it most frequently as *peaceful* (91,4%) and *serious* (87,9%); and then *sensitive*, *prayer like* and *hopeful* (84, 5%). The least number of students do not consider this mode *restless* (8,6%), and the greatest number feel it is *weak* (55,2%) and *sad* (65,5%). The features of the Phrygian mode are described with terms celebration, glorification and deep sensitivity. With regards to the results pertaining to the musical example in the Phrygian mode, it can be inferred that the children have recognised

its expressive component, described with the adjective *sensitive*, but failed to perceive the *celebratory* impression of this mode.

The Lydian mode of the third musical example is mostly perceived as *dignified* (89,7%), *sensitive* and *hopeful* (86,2%), *serious* (82,8%), *prayer like* (77,6%) and *captivating* (72,4%). One half of the subjects (51,7%) experience the Lydian mode as *sad*. The Lydian mode's features are comprised in the descriptions of its power and strength, joy, awe and ecstasy, i.e. joy and optimism. Although the children did not recognise the element of joy in this mode, it can be said that other features children ascribed to this mode are on the verge of the general impression of its expressiveness.

The fourth listened to example of Gregorian chant is in the Mixolydian mode. The students experience it as *dignified, sensitive and serious* (86,2%); and *captivating* (81,0%). On the other hand, they also perceive it as *sad* (53,4%). General features of the Mixolydian mode are joy, festivity and celebration, and its effect is light, without severity. In accordance with the results of the Semantic differential, it can be stated that children did not recognise the most important characteristic of the listened to example in the Mixolydian mode, moreover, more children experienced the chosen example as *sad*. However, the adjective *captivating*, which the children felt to be a feature of the Mixolydian mode in great percentage, can be said to be in the direction of being in rapture because of the beauty, so it can be said that in such a way children perceived the essence of the Mixolydian mode.

It should be stressed as interesting that lesser number of the students experienced the heard examples of Gregorian chant as *joyful* in relation to the given *sad* feature.

Third grade and fourth grade students' opinions about the expressiveness of Gregorian chant

The Semantic differential examined the students' opinions of assigned musical examples with the paired bipolar adjectives on a scale with the following ratings: 3 - the positive adjective completely describes it; 2 - the positive adjective somewhat describes it; 1 - the positive adjective describes it; -1 - the negative adjective describes it; -2 - the negative adjective somewhat describes it; -3 - the negative adjective completely describes it. The students could also choose 0 on the scale, which facilitated their indecisiveness in assessing the expressiveness of the listened to examples of Gregorian chant. The results of the implemented Semantic differential are presented with the arithmetic mean values (M).

Table 2

Third grade and fourth grade students' opinions about the characteristics of the authentic modes of Gregorian chant (N=42)

	N	Min	Max	M	SD	Skewness	Kurtosis
<i>Musical example 1 Iubilate Deo universa terra</i>							
dignified-undignified	42	-3	3	1.14	1.61	-1.70	2.29
peaceful-restless	42	-2	3	0.98	1.10	-1.25	2.60
sensitive-harsh	42	-1	3	1.52	1.06	-0.32	-0.11
prayer like-scattered	42	-3	3	0.90	1.19	-2.02	5.08
celebratory – casual	42	-3	3	0.90	1.65	-0.83	0.02
captivating – indifferent	42	-2	3	0.57	1.65	-0.18	-1.25
powerful – weak	42	-3	3	0.40	2.20	-0.43	-1.30
joyful – sad	42	-3	3	-0.71	1.95	0.48	-0.88
admirable – repulsive	42	-3	3	0.21	1.80	-0.05	-0.86
serious – frivolous	42	-2	3	1.24	1.03	-0.51	1.65
hopeful – hopeless	42	-3	3	0.90	1.74	-0.90	0.12
<i>Musical example 2 Benedicite Dominum omnes angeli</i>							
dignified - undignified	42	-3	3	1.02	1.40	-1.26	1.62
peaceful - restless	42	-1	3	1.33	0.72	0.21	2.52
sensitive - harsh	42	-1	3	1.52	0.94	-0.35	0.93
prayer like – scattered	42	0	3	1.38	0.67	0.46	0.26
celebratory – casual	42	-3	3	0.60	2.03	-0.70	-0.70
captivating – indifferent	42	-3	3	0.40	2.90	-0.64	-0.95
powerful – weak	42	-3	3	-0.88	1.90	0.76	-0.67
joyful – sad	42	-3	3	-1.24	1.94	0.93	-0.42
admirable – repulsive	42	-3	3	0.79	1.90	-0.70	-0.36
serious – frivolous	42	-3	3	1.14	1.40	-1.30	1.89
hopeful – hopeless	42	-3	3	1.00	1.50	-1.00	1.19
<i>Musical example 3 Laetare Jerusalem</i>							
dignified - undignified	42	-2	3	1.24	1.09	-0.81	2.37
peaceful - restless	42	-3	3	1.02	1.66	-1.38	1.40
sensitive - harsh	42	-3	3	1.31	1.35	-1.35	2.50
prayer like - scattered	42	-2	3	1.19	1.00	-0.56	2.02
celebratory – casual	42	-3	3	0.33	1.99	-0.30	-1.02
captivating – indifferent	42	-3	3	1.10	1.78	-0.88	-0.25
powerful – weak	42	-3	3	-0.12	2.29	0.15	-1.56
joyful – sad	42	-3	3	-0.14	1.80	0.07	-0.84
admirable – repulsive	42	-3	3	0.57	1.76	-0.67	-0.54
serious – frivolous	42	-3	3	0.76	1.76	-1.08	0.30
hopeful – hopeless	42	-3	3	0.95	1.51	-0.93	0.95

	N	Min	Max	M	SD	Skewness	Kurtosis
Musical example 4 <i>Dirigatur</i>							
dignified - undignified	42	-3	3	1.26	1.449	-1.59	3.60
peaceful - restless	42	-3	3	1.00	1.530	-1.20	1.22
sensitive - harsh	42	-3	3	1.26	1.398	-1.11	1.69
prayer like - scattered	42	0	3	1.45	.670	0.69	0.12
celebratory – casual	42	-3	3	0.36	1.998	-0.37	-0.99
captivating – indifferent	42	-3	3	0.81	1.903	-0.67	-0.46
powerful – weak	42	-3	3	-0.29	2.040	0.06	-1.42
joyful – sad	42	-3	3	-0.29	2.223	0.18	-1.53
admirable – repulsive	42	-2	3	1.00	1.431	-0.42	-0.41
serious – frivolous	42	-3	3	0.86	1.407	-1.28	1.56
hopeful – hopeless	42	-3	3	1.12	1.596	-0.85	0.34

The results in Table 2 show the answers are in range between the positive and negative pole of the adjectives, reaching the maximum for most examples. The arithmetic mean indicates students of the third and fourth grade experienced the expressiveness in a way that *the positive adjective somewhat describes it to the positive adjective describes it* and were even *indecisive*.

According to the arithmetic mean value, the Dorian mode is mostly perceived as *sensitive* (M=1,52). It means that the listened to example corresponds with number 2 on the scale, i.e. that the medium value corresponds with the term *sensitive*. On the opposite pole, it is mostly regarded as *sad* (M=-0,71). Students do not experience the Dorian mode in the whole scope of its characteristics. They perceive it as sensitive and sad, which can be associated with the characteristics of peacefulness and seriousness of the mode.

The student perception of the Phrygian mode is the same, more oriented to the positive pole of the Semantic differential's scale. They characterise it as *sensitive* (M=1,52), whereas on the negative pole they again point out it seems somewhat *sad* (M=-1,71). In this example, the students are not on the verge of the first two determined characteristics of the Phrygian mode (festive, celebratory), but perceive its characteristics of compassion and deep expressiveness more, experiencing them as *sad*.

The highest arithmetic mean for the expressiveness of the Lydian mode corresponds with the adjective *sensitive* (M=1,31) and *sad* (M=0,14). The term *sad* is arithmetically closer to 0, which marks uncertainty, i.e. students' indecisiveness. Throughout the whole history of Gregorian modes theory, the Lydian mode is perceived as the merry, optimistic and joyful mode (Koprek, 2019), but the students did not recognise these characteristics in the listened to example. Perhaps this result is owing to the fact that flat *Ti* note appears in the chosen example *Laetare Ierusalem* and its presence creates an atmosphere opposite of the main characteristics of the Lydian mode (Martinjak, 1997).

The students feel similarly about the Mixolydian mode perceiving it as *prayer like* (M=1,45), *weak* and *sad* (M=0,29). The characteristics of this mode are ease, playfulness,

festiveness and celebratory tone, which was not recognised nor experienced by the students.

It is obvious that students of all primary education grades have experienced the Lydian and Mixolydian mode more as sad than merry and joyful, which are its basic characteristics. Martinjak (1997) stresses that these two modes can express deep sadness and sorrow in some compositions of Gregorian chant, making the students' perception plausible. It can be implied from the stated that the students still feel the secondary qualities of Gregorian chant, which are of praying nature. At the same time, bearing in mind that Gregorian chant is generally perceived as meditative, serene, praying music, it is possible that the students have experience it as sad more than they could have sensed the specific differences in the qualities of the modes (Tomašić, 1968; Martinjak 1997; Ljubičić, 2007; Žižić, 2007; Tkalec 2008; Koprek, 2013; Porterfield, 2014).

Third grade and fourth grade students experience the heard examples of Gregorian chant with less intensity and in average rate it with number 1 on the scale. However, there are more positive than negative assessments on the scale. It means that the students nevertheless associate more positive than negative characteristics with Gregorian chant. To further develop the auditory sensibility, future systematic work in music teaching would be desirable, also familiarising children with the characteristics and specificities of Gregorian chant. Amongst other things, it presents the foundation on which latter musical forms developed (Chailley, 2006; Koprek, 2013).

Conclusion

The research on the perceptive differences between the authentic modes done with examples of Gregorian chant with children in primary education has shown that students of the first four grades of primary school recognise some of the general characteristics usually ascribed to the music which is part of the system of musical modes. The most expressive characteristics corresponding with the general theoretic descriptions of the modes were recognised by the children in the Dorian (*dignified, peaceful*) and somewhat less in the Phrygian mode. However, the children recognised the main components of the Lydian and the Mixolydian modes, which could be described with adjectives *merry and joyful* only in a small percentage. It can be inferred that children perceived the modes which are closer to today's *minor key* considering their tonal structure (Dorian, Phrygian), as opposed to the modes whose tonal structure is closer to today's *major key* (Lydian and Mixolydian). Besides, the listened to examples of Gregorian chant sound *sad* to most children, which is not completely in accord with the theory of expressiveness of the old modes. Future research of the auditory sensitivity to Gregorian chant could encompass less modes, but with more characteristic examples of specific modes, in order for the subjects to better discern the main expressive characteristics of individual old church modes.

Since the official policy document *National Curriculum Framework* (2013) did not foresee the introduction to Gregorian chant in lower primary school grades in Croatia,

children of this age do not have the opportunity to get acquainted with this kind of music nor develop their perceptive ability with regards to this part of old music. It is not only the foundation of today's music, but it also lives primarily in the context of church musical practice, then in Croatian musical folklore and in art compositions belonging to historical periods and today. In order to provide children with the opportunity to acquire knowledge of music in as greater extent possible, it is necessary to offer a selection which would at least approximately treat the foundations of music in relation to other classical and popular musical styles which are part of instruction encompassed by school subject Music.

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Doživljaj ekspresivnosti autentičnih modusa u gregorijanskom koralu kod učenika primarnog odgoja i obrazovanja

Sažetak

Ekspresivnost starocrkvenih ljestvica odražava se kroz karakternost i pripisivanje izvjesnih stanja određenom modusu ili pojedinoj gregorijanskoj skladbi koja pokazuje specifičnu ekspresivnost. Važna karakteristika gregorijanskog pjevanja na tonskom planu je dijatonsko pjevanje temeljeno na ljestvicama bez kromatike koje koriste samo jedan polustupanj u tetrakordu čija glazbena struktura odražava ekspresivnost gregorijanskog pjevanja. U takvoj ekspresivnosti postižu se karakterne specifičnosti koje modus, svaki za sebe, odražava. Izražajnost gregorijanske glazbe uvelike je uvjetovana raznolikim modalnim materijalom koji se upotrebljava u pojedinoj skladbi pa će na slušni dojam i procjenu utjecati modalna struktura pojedinog gregorijanskog napjeva. Cilj rada je ispitati viđenje ekspresivnosti gregorijanskih modusa kod učenika primarnog odgoja i obrazovanja te istražiti može li današnja auditivnost koje ja navikla na dva tonska roda, dur i mol, prepoznati ono što se stoljećima baštini u repertoaru gregorijanskih napjeva. Istraživanje je provedeno u školskoj godini 2018./2019. s učenicima prvih, drugih, trećih i četvrtih razreda osnovne škole (N=100). Rezultati istraživanja pokazali su kako učenici prvih i drugih razreda iskazuju veću slušnu senzibilnost pri prepoznavanju određenih karakteristika autentičnih gregorijanskih modusa. Učenici trećih i četvrtih razreda manje su auditivno otvoreni i perceptivni s obzirom na karakterne razlike autentičnih gregorijanskih modusa.

Ključne riječi: gregorijanski koral; modalnost; starocrkvene ljestvice; učenici primarnog odgoja i obrazovanja