

# Musically Talented Pupils in Slovene Elementary Schools: Gender and Age Differences in the Area of Musical Abilities

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## Abstract

*The basic purpose of this article is to form suitable terminology and definitions for musical talent that include important fields of evaluating the characteristics of musical talent. It also aims to carry out research into some characteristics of a sample of musically talented Slovene pupils in the area of musical abilities at the elementary school level, especially from the aspect of finding possible differences related to gender and age. The research involved 86 elementary school teachers from twelve Slovene schools (city and rural) who teach first to fifth grade (6-10 year-old pupils). 86 musically talented pupils were evaluated. It is surprising that of the musically talented pupils nominated, 72.1% were girls and only 27.9% were boys. Based on the results, we tried to prove the hypothesis that gender is not a differential factor of the characteristics of most musically talented pupils in the area of musical abilities. There were only two characteristics that showed a statistically significant difference between boys and girls: the variable of listening with directed attention was expressed more by girls and tonal stability was expressed more by boys. Contrary to our expectations, age (6-10 years old) was not found to be an important differentiation factor in the characteristics of musically talented pupils in the area of musical abilities.*

**Key words:** *characteristics of musically talented pupils; factor analysis; gender and age; musical abilities; musical talent.*

## Introduction

Today, the process of identifying gifted pupils in Slovene elementary schools involves teacher observation, nomination of these pupils by teachers, group test assignments,

group and individual intelligence tests, creativity tests and success in school (grade-point-average). It is carried out every three years and consists of three levels: evidence, identification (exempted from the first evaluations), and informing parents and asking their opinions (Bezić et al., 2006). But, the school environment in Slovenia does not offer enough support to musically talented pupils (Kovačič, 2007). In order for a positive move to be made in this specific area, musical talent should be suitably defined and general and specific characteristics of musically talented pupils need to be examined.

The basic purpose of this article is to form suitable terminology and definitions for musical talent that include important fields of evaluating the characteristics of musical talent, as well as to investigate some characteristics of a sample of musically talented Slovene pupils in the area of musical abilities at the elementary school level, especially from the aspect of identifying possible differences according to gender and age.

In the literature on this topic, distinctions are made between giftedness and talent. One of the leading researchers in this area, Francoys Gagné (2005), defines talent as “the outstanding mastery of systematically developed abilities (or skills) and knowledge in at least one field of human activity to a degree that places an individual at least among the top 10 percent of age peers who are or have been active in that field or fields”. Giftedness is defined as “possession and use of outstanding natural abilities (called aptitudes or gifts).../” (p. 99).

In music classes and other musical activities in Slovene elementary schools pupils most often develop abilities and skills and gain knowledge and experience. Therefore, we can already refer to their musical talent at this age, but not their giftedness. When evaluating a pupil’s musical abilities at this age (assessing their knowledge, creativity, performance etc.), we in fact evaluate the expressiveness of their musical talent or individual characteristics that make up the parameters of musical talent in different areas of evaluation.

Blažič, Črčinovič Rozman and Kovačič (2009) formed six areas of evaluating the characteristics of musical talent: musical abilities, musical creativity, musical interpretation, musical knowledge, musical activities, and other characteristics and features. In our previous research (Črčinovič Rozman & Kovačič, 2010) we defined musical talent as “*an advantageous combination of a pupil’s characteristics (usually high above average) in one or some of the following fields of characteristics: musical ability, musical creativity, musical performance, musical knowledge, musical activity and other characteristics and features*” (p. 50). In the present study we tested this theory and definition of musical talent as they apply to the characteristics in the six areas mentioned above. The definition of musical talent above was proved suitable by use of the qualitative methodology of the analyzed case.

Knowing the general characteristics of musically talented pupils makes it easier to recognize them and to work with them. Based on the findings of an extensive body of research, we developed criteria for identifying gifted pupils, determining the terminology, definitions and creating musical tests. Based on their own findings and pedagogical experience, Blažič, Črčinovič Rozman, and Kovačič (2009) formed some general characteristics of musically talented pupils:

- *The pupil's musical talent was recognized early.* (Scheinfeld, 1956; as cited in Winner & Martino, 2000; Howe & Sloboda, 1996).
- *Musically talented pupils live in an encouraging social environment (family, school, teachers).* (Davidson, Howe, & Sloboda, 1997; Freeman, 2000a, 2000b; Davidson & Pitts, 2001; Burland & Davidson, 2002; Davidson & Borthwick, 2002; Evans, Bickel, & Pendarvis, 2004; McPherson, 2009).
- *Musically talented pupils have well-developed musical abilities.* (Rojko, 1981; Moore, 1994; Moore et al., 1997; Sloboda, 1997; Haroutounian, 2000a, 2000b; Hallam & Schaw, 2002; Baum, Owen, & Oreck, 2004; Kay & Subotnik, 2004; McPherson, 2005; Hallam, 2006).
- *Musically talented pupils are musically creative.* (Guilford, 1986; Pimmer, 1992; Webster, 1996; Umemoto, 1997; Haroutounian, 2000a, 2000b; Brophy, 2002; Kiehn, 2003; Baum, Owen, & Oreck, 2004; Kay & Subotnik, 2004; Selby, Shaw, & Houtz, 2005; Hickey & Lipscomb, 2006; Paananen, 2006; Tafuri, 2006; Črčinovič Rozman, 2009).
- *Musically talented pupils are very successful in musical performance.* (Davidson, Howe, & Sloboda, 1997; Haroutounian, 2000a, 2000b; Sloboda, 2000; Juslin, 2003; McPherson & Schubert, 2004).
- *Musically talented pupils have good knowledge of music theory.* (Učni načrt glasba, 1998; Mills & McPherson, 2006).
- *Musically talented pupils are involved in many different musical activities and practice a lot.* (Sloboda et al., 1996; Davidson, Howe & Sloboda, 1997; O'Neill, 1999; Williamon & Valentine, 2000; McPherson, 2005; Chin & Harrington, 2007).
- *Musically talented pupils have many other positive characteristics (motivation, concentration, perseverance etc.).* (Haroutounian, 2000a, 2000b; Baum, Owen, & Oreck, 2004; Kay & Subotnik, 2004, Kovačič, 2007).

There is not yet enough knowledge about the general characteristics of musically talented pupils to successfully identify them and work with them. In this varied problematic (conceptual confusion, nonexistence of generally acknowledged definitions, professional qualifications of teachers, lack of knowledge of specific criteria to recognize and evaluate characteristics, problems related to using music tests, etc.) we can look for reasons why musically talented pupils are not detected in elementary schools. Supposedly, this occurs when the characteristics of musically talented pupils are not strongly expressed.

In already completed research in Slovenia (Blažič, Črčinovič Rozman, & Kovačič, 2009) we prepared and used a very reliable questionnaire (Cronbach's coefficient alpha value of 0.972) to examine characteristics of musical abilities. The questionnaire consisted of 25 criteria (Table 1) connected with musical abilities. The results of this research showed that the characteristics of musically talented pupils were high above average in the area of musical abilities. The findings of this research are in accordance with numerous publications in the area of musical talent that describe the above average abilities and capabilities (Rojko, 1981; Moore, 1994; Moore et al., 1997; Sloboda, 1997; Haroutounian, 2000a, 2000b; Hallam & Schaw 2002; McPherson,

2005; Hallam, 2006). We can say that the above average musical ability is an important indicator of musical talent.

We discovered that attending a music school is an important differential factor for numerous characteristics in the area of musical abilities, which is an advantage for pupils enrolled in music schools (Blažič, Črčinovič Rozman, & Kovačič, 2009). Participation in different musical activities and especially attending a music school to learn to play an instrument has a positive effect on the development of musical abilities. A positive proof of this finding can also be found in numerous publications (Sloboda et al., 1996; Davidson, Howe, & Sloboda 1997; O'Neill, 1999; Williamon & Valentine, 2000; McPherson, 2005; Chin & Harrington 2007).

Table 1

Some parameters of descriptive statistics for manifested variables (Blažič, Črčinovič Rozman, & Kovačič, 2009) and the Kolmogorov-Smirnov Z test.

	Definition of variables	N	M	$\sigma$	KA	K-S Z	p
v1	Expressing rhythm with body movement	86	6.19	1.112	-1.431	2.809	<0.0001
v2	Keeping consistent rhythm	86	6.30	.983	-2.319	2.529	<0.0001
v3	Exact repetition of rhythmic patterns	86	6.34	.835	-1.206	2.872	<0.0001
v4	Playing repetitive patterns	86	6.43	.760	-1.076	3.289	<0.0001
v5	Waiting for the exact moment to start	86	6.33	.860	-1.257	2.845	<0.0001
v6	Ability to find the basic beat or rhythm	86	6.02	.920	-.696	2.279	<0.0001
v7	Response to the change of rhythm and tempo	86	6.24	.811	-.886	2.469	<0.0001
v8	Distinguishing between rhythms	86	6.30	.869	-1.186	2.788	<0.0001
v9	Listening with directed attention	86	6.15	.927	-1.125	2.311	<0.0001
v10	Memorizing sounds	86	6.33	.774	-.798	2.859	<0.0001
v11	Perceptive listening - detecting small differences in rhythm, melody, intervals	86	5.58	1.057	-1.107	2.938	<0.0001
v12	Contextual discrimination - identification of patterns, melodies and instruments in a musical context	86	5.67	.951	-.559	2.644	<0.0001
v13	Perceiving the differences between intervals	86	6.19	.914	-1.044	2.367	<0.0001
v14	Esthetic sensitivity – a pupil notices slight changes in the mood, dynamics and tone color	86	5.78	1.278	-.993	2.47	<0.0001
v15	Perception of dynamics	86	5.97	1.079	-1.542	2.923	<0.0001
v16	Memorization and repetition of melodic phrases	86	6.15	.927	-1.035	2.419	<0.0001
v17	Distinguishing tones produced by different instruments	86	5.95	1.039	-.871	2.214	<0.0001
v18	Ability to sing precisely	86	6.28	.916	-1.341	2.637	<0.0001
v19	Accuracy of tone height – pupil hits a tone accurately	86	6.24	.880	-1.139	2.502	<0.0001
v20	Tonal stability	86	5.87	1.082	-.822	2.161	<0.0001
v21	Singing abilities	86	6.24	.894	-1.215	2.469	<0.0001
v22	Relative pitch- learned pitch	86	6.03	.939	-.770	2.343	<0.0001
v23	Perfect pitch*	86	5.05	1.556	-.923	1.938	<0.0001
v24	Memorization of melody and rhythm	86	6.30	.869	-1.186	2.788	<0.0001
v25	Sense of harmony, consonance	86	5.92	1.140	-1.350	2.744	<0.0001

\* Perfect pitch – from audio information a pupil can define tonality (major, minor), type of chord, intervals and individual tones

Besides enrollment in a music school, it is reasonable to study at least two more necessary differential factors: *gender* and *age* of pupils. This will provide a deeper insight into the characteristics of musically talented pupils in elementary schools.

The development of musical talent is a process where musical abilities develop along with the age of the pupils. Research has shown that musical abilities often improve between ages 5 and 10 (Moore, 1994, p. 6). Mirković-Radoš (1983) claimed that pupils quickly develop the rhythmic and melodic aspects of their abilities between ages 6 and 9. When that period begins, the higher aspects of musical abilities emerge. Moore et al. (1997) found that improvement in memorizing songs in the age period from 6 to 9 is statistically significant.

The amount of practicing, music lessons and occupation with different musical activities accumulatively grow with the age of the pupils. Haroutounian (2010, p. 620) wrote that the role of practice is a significant factor in the development of musical talent. Reis (2010, p. 868) also lists some other factors that have an important role in the development of talent: faith, support, environment, family situation, teachers, and a desire to work hard.

Based on the area of musical development, especially in connection with the effects of being involved in musical activities and the development of musical abilities related to age, we assumed that, under favorable circumstances, older musically talented pupils would express some characteristics of musical talent more strongly than younger musically talented pupils. In the present research we are interested to find out if, in the area of musical abilities, there are differences related to age of musically talented pupils expressed at the level of statistical significance.

The results of research carried out into the differences between genders vary. Moore (1994), on a sample of 128 pupils aged 8 to 11 talented in singing, did not find any statistically significant differences related to age and gender in the ability to sing intervals accurately. Contrary to this, Moore et al. (1997) found that girls exceed boys in memorizing songs between the ages 6 and 9.

Olsson (2007) summarized numerous studies that have focused solely on the research of gender issues and music education, from which he concludes: (1) gender differences are salient in children's preferences for musical instruments; (2) children's and teachers' expectations of girls' and boys' musical practices are influential; (3) girls and boys negotiate gender identity through their different activities; girls are, for example, more involved in singing and classical music, which provides an affirmation of gender for girls in the form of a safe and private form of display. Boys, on the other hand, are involved in activities connected to music technology and electronic instruments; (4) gender roles are also performed and promoted in musical beliefs and preferences; (5) male role models influenced males, while female role models influenced females (pp. 996-997).

Based on tests of musical ability in auditory perception (see review by Shuter-Dyson & Gabriel, 1981, as cited in O'Neill, 1997, p. 49), there were no reliable differences found between the genders. Where there were differences, it was explained by the fact that girls, in comparison with boys, had more musical training (Gilbert, 1942; as cited in O'Neill, 1997, p. 49). It is interesting to note that being involved with music is not necessarily connected with the achievement of musical success. O'Neill (1997,

p. 49) talks about the fact that more girls participate in musical activities in school and are more successful than boys. However, men dominate the music profession and reach higher achievements in their musical careers. The author, based on vast research, explains that musical achievements do not depend only on individual's musical gift, but also on the interaction of the following: cognitive factors, social factors, environmental factors, motivational factors, individual experience, education, aspirations, relation to music and musical training.

Due to the weak theoretical connection of the differences between boys and girls, we formed a hypothesis that there are no differences between musically talented girls and boys in the area of musical abilities.

Teacher nomination is an important procedure for the identification of gifted and talented pupils. This is often complemented with the use of rating scales or checklists (Renzulli, 2010a, 2010b). For the needs of studying the characteristics of musically talented pupils in Slovenia, we formed a new approach to gain hypothetically a view of the upper 5% of musically talented pupils at the elementary school level. Elementary school teachers nominate one pupil from their class who is the most talented of all the pupils. With the use of grading scales and given criteria they evaluated the pupil's characteristics. The suitability of such an approach has been explored in previous research (Blažič, Črčinovič Rozman, & Kovačič, 2009) and in some other research that is still in progress.

In the research carried out by Evans, Bickel, and Pendarvis (2004), it was shown that high expectations of teachers have a positive effect on the achievements of their pupils. Also, according to The Expectancy Theory (Rosenthal & Jacobson, 1968; Babad, 1998; Rosenthal, 1991; Rubie-Davies, 2006; Locke, 2005), the achievements of pupils are connected with the expectations of their teachers. Teachers' own definitions of musical talent and their expectations can also have an effect on the evaluation of the characteristics of talented pupils. We think that elementary school teachers who also teach music to musically talented pupils are competent and reliable evaluators of determining such characteristics. This thesis is supported by Hickey's findings (2001). Her research showed that the most reliable evaluator of a pupil's creative achievements turned out to be the music teacher.

## **Methods**

### ***Definition of the Problem***

In publications on this topic we found lack of research conducted in the area of musical talent at the elementary school level (students aged 6-10). A precise study on some characteristics of musically talented pupils in the area of musical abilities was carried out in Slovenia on a sample of 86 elementary school teachers (Blažič, Črčinovič Rozman, & Kovačič, 2009). 86 musically talented pupils were nominated and evaluated by their teachers. The present article introduces the further findings of this research.

The fundamental purpose of the research was to compare the characteristics of the sample of musically talented pupils according to gender and age (6-10 years old) so

as to gain a deeper view of the characteristics of musically talented Slovene pupils in the area of musical abilities at the elementary school level of education.

### ***Research Goals***

The goals of the research were:

- To determine if gender is a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities;
- To determine if age is a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities;
- To gain new insight that can be used as support for further research in the area of musical talent.

### ***Hypotheses***

- H1: Gender is not a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities;
- H2: Age is a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities.

### ***Statistical Methods***

Data was processed with an SPSS computer program for PC. The following statistical methods were used:

- Descriptive statistics: for the description of the characteristic value of the variables;
- Factor analysis, Cronbach's alpha coefficient: to estimate reliability;
- Kolmogorov-Smirnov Z test: to consider the probability of distribution;
- The nonparametric Mann-Whitney test and the Kruskal-Wallis test: for assessing the differences between individual independent samples and variables (according to gender and age).

### ***Sample***

86 elementary school teachers from 12 Slovene schools (city and rural) who teach pupils from first to fifth grade (6 - 10 years old) were included in the research. Most teachers included in the research teach third grade (25.6%), while the lowest number of them teach second grade (15.1%). The average number of pupils in the class was 17.79. There were 86 musically talented pupils nominated and evaluated (72.1% girls and 27.9% boys), of which 64 pupils attended music schools. Most of the pupils (n=22) play keyboard instruments.

### ***Measuring Instruments***

The data was collected with a survey questionnaire that was based on the Likert psychometric scale. The poll questionnaire consisted of the animated approach with 25 criteria (Table 1) for evaluating the characteristics of musically talented pupils

in the area of musical abilities. A scale of 1 to 7 was used: the scale was organized in ascending order, from *not developed* (1) to *developed* (7). This was used for the assessment of the development of abilities for mastering skills.

### ***Measurement Characteristics***

The objectivity of the testing was high because the instructions and criteria for the poll questionnaire were clear and unambiguous, and every interviewee had equal conditions in filling it out. Objectivity in evaluating the answers was also high, because the seven-level grading scale was uniform for all the interviewees.

### ***Reliability***

To estimate the reliability, we used the factorization process. The reliability of the poll questionnaire was extremely high because of the value of the Cronbach's coefficient:  $\alpha = 0.972$ . The value of the index of the Kaiser-Meyer-Olkin's test was 0.927, which means that the sample is suitable for factor analysis. Bartlett's test of sphericity is statistically significant ( $\chi^2=1948.058$ ;  $P=0.000$ ), which means that the factor model explains enough of the variable variance. Both results show that the factor analysis was a logical choice. The factors were extracted from Hotteling's method of principal components (Fulgosi, 1988, pp. 104, 119), and the number of factors was defined by Kaiser-Guttman's criteria. From the criteria of eigenvalue above 1 (Fulgosi, 1988, p. 134), we extracted 3 factors. For the interpretation of the factors we used the matrix where "varimax" rotation, according to the subject matter, was more interpretable. By using factor analysis, we obtained three factors (the factor of melodic abilities, the factor of rhythmic abilities, and the factors of abilities of a higher rank), which altogether explain 70.796% variance.

### ***Validity***

An expert evaluated the subject validity of the test. Factor analysis showed suitable constructive validity. The first factor explains 25.695% of variance, which is more than the lowest of the presumed level of validity (20%). Therefore, we determined that the instrument was valid.

### ***Data Collection Process***

The data was collected in May 2009. Poll questionnaires were distributed personally or sent by mail to 12 randomly chosen Slovene elementary schools (both city and rural). We received the completed questionnaires personally by mail.

## **Results and Discussion**

### ***Testing of Hypotheses***

***H1*** *Gender is not a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities.*



Firstly, we checked if all the evaluations of the characteristics of pupils were normally distributed. We used the Kolmogorov-Smirnov test (Table 1). All the variables were normally distributed. Therefore, instead of using the t-test for independent samples that presume a normality of distribution, we used the nonparametric Mann-Whitney test (Table 2).

Table 2

Descriptive statistics and Mann-Whitney test

	Gender of Pupil						Mann-Whitney U	Z	p
	Male			Female					
	M	N	$\sigma$	M	N	$\sigma$			
v1	5.71	24	1.574	6.37	62	0.814	614	-1.375	0.169
v2	6.17	24	1.465	6.35	62	0.726	693	-0.544	0.586
v3	6.21	24	1.021	6.39	62	0.754	700	-0.469	0.639
v4	6.13	24	0.947	6.55	62	0.645	566.5	-1.935	<b>0.053</b>
v5	6.17	24	1.049	6.39	62	0.776	684	-0.639	0.523
v6	5.79	24	1.103	6.11	62	0.832	639.5	-1.069	0.285
v7	6.04	24	1.042	6.32	62	0.696	660	-0.877	0.380
v8	6.21	24	1.021	6.34	62	0.809	716.5	-0.291	0.771
v9	5.67	24	1.204	6.34	62	0.723	512	-2.404	<b>0.016</b>
v10	6.21	24	0.932	6.37	62	0.707	695	-0.517	0.605
v11	5.58	24	1.139	5.58	62	1.033	728	-0.167	0.867
v12	5.50	24	1.063	5.74	62	0.904	654	-0.926	0.354
v13	6.21	24	0.977	6.18	62	0.897	713.5	-0.317	0.751
v14	5.63	24	1.498	5.84	62	1.190	719	-0.252	0.801
v15	5.63	24	1.469	6.10	62	0.863	638	-1.103	0.270
v16	6.17	24	1.049	6.15	62	0.884	697.5	-0.483	0.629
v17	5.71	24	1.083	6.05	62	1.015	603	-1.430	0.153
v18	6.17	24	0.963	6.32	62	0.901	674	-0.743	0.457
v19	6.17	24	1.090	6.27	62	0.793	733	-0.115	0.908
v20	6.13	24	1.361	5.77	62	0.948	523.5	-2.224	<b>0.026</b>
v21	6.13	24	0.992	6.29	62	0.857	682	-0.652	0.514
v22	6.04	24	1.122	6.03	62	0.868	694	-0.512	0.608
v23	5.17	24	1.633	5.00	62	1.536	673	-0.703	0.482
v24	6.33	24	1.049	6.29	62	0.797	662	-0.868	0.385
v25	5.75	24	1.595	5.98	62	0.914	691	-0.544	0.587

From the results (Table 2) we can see that the characteristics of musically talented pupils are high above average.

There was a significant difference found in only two characteristics: listening with directed attention (v9) is more strongly expressed by girls, while tonal stability (v20) is more strongly expressed by boys. We should also mention the variable for playing repetitive patterns (v4), where the difference between boys and girls is on the border of statistical significance. It is expressed more strongly by girls than by boys. The stated hypothesis can mainly be confirmed.

Rojko (1981) presented an extensive overview (for that time) of all developed musical tests. A homogeneous use of these tests for boys and girls was always predicted,

which also confirms our findings that the characteristics of musically talented boys and girls in the area of musical abilities are similar and differences are minimal. O'Neill (1997, p. 49) detected a lack of research in the area of differences between genders regarding musical talent. This author's opinion is that one of the reasons for this is a lack of general agreement among researchers on what musical talent actually is (whether it is an ability to sense and understand musical structure or it encompasses numerous different abilities that are present or absent at different levels).

In our research the teachers nominated and evaluated 72.1% girls and only 27.9% boys. This data is surprising considering the fact that teachers got instructions to choose and evaluate only one pupil (boy or girl) whom they feel is the most musically talented one. We anticipated an approximately even distribution of nominated pupils according to gender. We believe that musically talented girls at the elementary level of education express some characteristics and features connected with musical talent more strongly, and therefore the teachers nominated them more frequently. We predicted that the teachers' nominations would also affect the social stereotypes connected with gender differences as they apply to teachers' expectations. In this direction we will have to carry out research, which will confirm or disprove our assumptions.

*H2 Age is a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities.*

In order to test this hypothesis we used the Kruskal-Wallis test.

Contrary to our hypothesis, statistically significant differences between musically talented pupils according to their age were not prevalent, except in the first two variables. Therefore, we rejected the hypothesis of existing differences (H2). The characteristic: *Waiting for the exact moment to start (v5)* was expressed most strongly by pupils in the first grade (age 6), and least strongly by pupils from the second grade (age 7). The characteristic: *Perceiving the differences between intervals (v13)* was expressed most strongly by the pupils from the fourth grade (age 9), and least strongly by the pupils from the third grade (age 8).

The development of musical talent is a developmental process (McPherson & Williamon, 2006; Haroutounian, 2000c). Therefore, it is surprising to find there was no statistically significant difference related to age among the pupils aged 6 to 10. As far as musical development is concerned, the group of pupils whom we studied had not yet reached the period when "higher aspects of abilities" appear (Mirkovič-Radoš, 1983, p. 91). They were still in the developmental period of simple musical abilities (rhythm and melody). Therefore, it was not possible to find statistically significant differences between musically talented pupils of different ages. For further research it will be necessary to expand the sample, include older pupils and to form and test other grading scales in order to obtain more accurate evidence to support or disprove our findings.

Table 3

*Descriptive statistics and the Kruskal-Wallis test*

	Age/ Grade										$\chi^2$	p
	Six years old First grade (n = 18)		Seven years old Second grade (n = 13)		Eight years old Third grade (n = 22)		Nine years old Fourth Grade (n = 18)		Ten years old Fifth grade (n = 15)			
	M	$\sigma$	M	$\sigma$	M	$\sigma$	M	$\sigma$	M	$\sigma$		
v1	6.50	0.786	6.54	0.660	5.68	1.323	6.33	1.283	6.07	1.033	7.023	0.071
v2	6.61	0.608	6.31	0.480	5.91	1.571	6.50	0.618	6.27	0.799	3.394	0.335
v3	6.39	0.850	6.15	0.555	6.18	1.097	6.50	0.618	6.47	0.834	2.676	0.444
v4	6.50	0.786	6.31	0.630	6.36	0.848	6.50	0.707	6.47	0.834	1.460	0.692
v5	6.78	0.428	6.00	0.707	6.23	1.110	6.17	0.924	6.40	0.737	9.737	0.021
v6	6.06	1.056	5.85	0.801	6.00	1.024	6.11	0.900	6.07	0.799	1.260	0.739
v7	6.28	0.826	6.23	0.599	6.23	1.020	6.33	0.767	6.13	0.743	0.456	0.928
v8	6.39	0.698	6.31	0.480	6.00	1.234	6.56	0.616	6.33	0.900	2.271	0.518
v9	6.39	0.698	6.00	0.816	5.95	1.174	6.33	0.970	6.07	0.799	3.196	0.362
v10	6.28	0.752	6.15	0.689	6.27	0.935	6.50	0.786	6.40	0.632	2.357	0.502
v11	5.67	0.840	5.31	0.855	5.36	1.465	5.72	0.752	5.87	1.060	2.599	0.458
v12	5.67	0.767	5.54	0.967	5.59	1.098	5.89	0.900	5.67	1.047	1.509	0.680
v13	6.11	0.963	6.08	0.641	5.73	1.120	6.61	0.608	6.53	0.743	8.974	0.030
v14	6.06	1.259	5.38	1.446	5.45	1.503	5.78	1.114	6.27	0.799	3.066	0.382
v15	6.00	0.970	6.23	0.599	5.45	1.503	6.17	0.924	6.20	0.775	3.355	0.340
v16	5.89	1.023	6.54	0.519	5.82	1.220	6.44	0.616	6.27	0.704	5.398	0.145
v17	6.11	1.023	6.00	0.913	5.55	1.262	6.28	0.752	5.93	1.033	4.215	0.239
v18	6.44	0.984	6.46	0.519	5.91	1.192	6.28	0.895	6.47	0.516	3.202	0.361
v19	6.39	0.698	6.31	0.480	6.00	1.309	6.33	0.767	6.27	0.704	0.434	0.933
v20	5.78	1.060	5.85	1.068	5.64	1.465	6.06	0.802	6.13	0.743	0.470	0.925
v21	6.22	0.943	6.31	0.855	6.05	1.174	6.39	0.608	6.33	0.724	0.229	0.973
v22	6.17	0.707	6.00	1.000	5.91	1.192	6.11	0.583	6.00	1.134	0.135	0.987
v23	4.83	1.724	5.62	1.193	4.68	1.912	5.22	1.396	5.13	1.187	2.130	0.546
v24	6.28	0.669	6.46	0.519	6.00	1.234	6.67	0.594	6.20	0.862	4.410	0.221
v25	5.61	1.335	5.85	0.987	5.82	1.220	6.00	1.237	6.40	0.632	1.382	0.710

## Conclusions

In the present study we used a very reliable questionnaire (the value of Cronbach's coefficient  $\alpha = 0.972$ ) to study the characteristics of musically talented pupils in the area of musical abilities. The results of the empiric research show that the characteristics of musically talented pupils are high above average. Our findings are consistent with those of Haroutounian (2000a), who reports high ratings of school music specialists, classroom teachers and independent music teachers, who, within the framework of the Music Link program observed each characteristic of talent or essentials of musical talent, using a four-point Likert scale. We mostly confirmed the hypothesis (H1) that gender is not a differentiation factor between the characteristics of musically talented pupils in the area of musical abilities. In connection with age (6-10 years old), we disproved the hypothesis (H2) that age is a differentiation factor between

the characteristics of musically talented pupils in the area of musical abilities. We can explain these results by the fact that the evaluated pupils were in the developmental period of simple musical abilities. Therefore, we were unable to find statistically significant differences between their abilities according to age. A small variability in the results, which were not linearly expressed, can be attributed to a relatively small sample. In the publications on this topic we can find numerous studies that examine gender and age differences in the area of musical abilities and musical talent, but they do not ensure an empirical comparison of our results.

The results and findings of our research provide us with a deeper insight into the characteristics of the population of musically talented pupils at the elementary school level and lay the foundation for continual research work in this area.

To gain a complete view of the characteristics of a specific population of musically talented pupils in Slovene elementary schools, it will also be necessary to direct our future research to other areas of characteristics of musical talent such as: musical creativity, musical performance, musical knowledge, musical activities (and other characteristics and features) expressed in school music lessons. It will also be necessary to expand the sample of research in quantity and age.

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# Glazbeno talentirana djeca u osnovnim školama u Sloveniji: razlike prema spolu i dobi u području glazbenih sposobnosti

## Sažetak

Glavni cilj ovoga rada jest izraditi odgovarajuću terminologiju i definicije glazbenog talenta koji bi uključili važna polja procjenjivanja karakteristika glazbenog talenta. Također je cilj i provesti istraživanje o nekim karakteristikama na uzorku glazbeno talentiranih učenika u Sloveniji u području glazbenih sposobnosti na osnovnoškolskoj razini, posebno s aspekta pronalazaženja mogućih razlika prema spolu i dobi. U istraživanju je sudjelovalo 86 nastavnika koji rade na osnovnim školama (gradskim i seoskim) u Sloveniji, a koji predaju u razredima od prvog do petog (učenici u dobi od 6-10 godina). Procjenjivalo se 86 glazbeno talentiranih učenika. Iznenađuje činjenica da su od svih nominiranih talentiranih učenika 72,1% bile djevojčice, a samo 27,9% dječaci. Na temelju rezultata pokušali smo dokazati hipotezu da spol nije razlikovni faktor karakteristika glazbeno najtalentiranijih učenika u području glazbenih sposobnosti. Uočene su samo dvije karakteristike koje su pokazale statistički značajnu razliku između djevojčica i dječaka: varijabla slušanja s usmjerenom pažnjom bila je izraženija kod djevojčica, a tonska je stabilnost bila izraženija kod dječaka. Suprotno našim očekivanjima, dob (6-10 godina) se nije pokazala važnim razlikovnim faktorom karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti.

**Ključne riječi:** faktorska analiza, glazbene sposobnosti, glazbeni talent, karakteristike glazbeno talentiranih učenika, spol i dob.

## Uvod

U današnje vrijeme proces identificiranja darovitih učenika u osnovnim školama u Sloveniji zahtijeva opažanje nastavnika, nominiranje tih učenika, zadavanje grupnih testova, testova inteligencije za pojedince i grupe, testove kreativnosti i školski uspjeh (prosjek srednje ocjene). Taj proces provodi se svake tri godine, a sastoji se od tri razine: dokaza, identifikacije (izdvojene od početnih procjena), obavještanja roditelja i traženja njihova mišljenja (Bezić i sur., 2006). No školsko okruženje u Sloveniji ne

pruža dovoljnu podršku glazbeno talentiranim učenicima (Kovačič, 2007). Da bi se napravio važan preokret u tom posebnom području, potrebno je talent definirati na odgovarajući način, što znači da bi trebalo istražiti opće i specifične karakteristike glazbeno talentiranih učenika.

Osnovna svrha ovog članka jest izraditi odgovarajuću terminologiju i definicije glazbenog talenta koji bi uključili važna polja procjenjivanja karakteristika glazbenog talenta, kao i provesti istraživanje o nekim karakteristikama na uzorku glazbeno talentiranih učenika u Sloveniji u području glazbenih sposobnosti na osnovnoškolskoj razini, posebno s aspekta pronalaženja mogućih razlika prema spolu i dobi.

Literatura koja postoji o toj temi razlikuje dva pojma: darovitost i talent. Jedan od vodećih stručnjaka u tom području, Francois Gagné (2005), definira talent kao „izvanrednu kontrolu nad sustavno razvijenim sposobnostima (ili vještinama) i znanju u barem jednom polju ljudskih aktivnosti do stupnja koji pojedinca svrstava barem u prvih 10% vršnjaka koji trenutno jesu ili su bili aktivni u tom polju ili poljima”. Darovitost se definira kao „posjedovanje i korištenje izvanrednih prirodnih sposobnosti (dara)...!” (str. 99).

Na nastavnim satima glazbene kulture i drugim glazbenim aktivnostima u slovenskim osnovnim školama učenici najčešće razvijaju sposobnosti i vještine, stječu znanje i iskustvo. Stoga se u toj dobi učenika već može govoriti o njihovu glazbenom talentu, no ne i o njihovoj darovitosti. Kada u toj dobi procjenjujemo glazbene sposobnosti učenika (ocjenjivanje znanja, kreativnosti, izvedbe itd.), mi zapravo procjenjujemo izraženost njihova glazbenog talenta ili osobne karakteristike koje čine parametre glazbenog talenta u različitim područjima evaluacije.

Blažič, Črčinovič Rozman i Kovačič (2009) osmislili su šest područja evaluacije karakteristika glazbenog talenta: glazbene sposobnosti, glazbenu kreativnost, glazbenu interpretaciju, znanje o glazbi, glazbene aktivnosti, i druge karakteristike i obilježja. U našem prijašnjem istraživanju (Črčinovič Rozman i Kovačič, 2010) definirali smo glazbeni talent kao „povoljnu kombinaciju učenikovih karakteristika (obično iznadprosječnih) u jednom ili nekoliko od sljedećih polja karakteristika: glazbene sposobnosti, glazbene kreativnosti, glazbene izvedbe, glazbenog znanja, glazbene aktivnosti i drugih karakteristika i obilježja” (str. 50). U ovom istraživanju testirali smo teoriju i definiciju glazbenog talenta onako kako se oni odnose na karakteristike u šest navedenih područja. Definicija glazbenog talenta navedena u tekstu pokazala se pogodnom, uz korištenje kvalitativne metodologije analiziranog slučaja.

Poznavanje općih karakteristika glazbeno talentiranih učenika olakšava njihovo prepoznavanje i rad s njima. Na temelju rezultata opširnog istraživanja razvili smo kriterije za identificiranje darovitih učenika, za određivanje terminologije, definicija i pisanja glazbenih testova. Na temelju svojih vlastitih rezultata i pedagoškog iskustva Blažič, Črčinovič Rozman i Kovačič (2009) uočili su neke opće karakteristike glazbeno talentiranih učenika:

- *Glazbeni talent učenika bio je rano prepoznat* (Scheinfeld, 1956; citirano u Winner i Martino, 2000; Howe i Sloboda, 1996).
- *Glazbeno talentirani učenici žive u poticajnom društvenom okruženju (obitelj, škola, nastavnici)* (Davidson, Howe i Sloboda, 1997; Freeman, 2000a, 2000b; Davidson i Pitts, 2001; Burland i Davidson, 2002; Davidson i Borthwick, 2002; Evans, Bickel i Pendarvis, 2004; McPherson, 2009).
- *Glazbeno talentirani učenici imaju dobro razvijene glazbene sposobnosti* (Rojko, 1981; Moore, 1994; Moore i sur. 1997; Sloboda, 1997; Haroutounian, 2000a, 2000b; Hallam i Schaw, 2002; Baum, Owen i Oreck, 2004; Kay i Subotnik, 2004; McPherson, 2005; Hallam, 2006).
- *Glazbeno talentirani učenici su glazbeno kreativni* (Guilford, 1986; Pimmer, 1992; Webster, 1996; Umemoto, 1997; Haroutounian, 2000a, 2000b; Brophy, 2002; Kiehn, 2003; Baum, Owen i Oreck, 2004; Kay i Subotnik, 2004; Selby, Shaw i Houtz, 2005; Hickey i Lipscomb, 2006; Paananen, 2006; Tafuri, 2006; Črčinovič Rozman, 2009).
- *Glazbeno talentirani učenici su vrlo uspješni u glazbenoj izvedbi* (Davidson, Howe i Sloboda, 1997; Haroutounian, 2000a, 2000b; Sloboda, 2000; Juslin, 2003; McPherson i Schubert, 2004).
- *Glazbeno talentirani učenici imaju dobro znanje o glazbenoj teoriji (Učni načrt glasba, 1998; Mills i McPherson, 2006).*
- *Glazbeno talentirani učenici uključeni su u mnogobrojne i raznovrsne glazbene aktivnosti i puno vježbaju* (Sloboda i sur. 1996; Davidson, Howe i Sloboda, 1997; O'Neill, 1999; Williamon i Valentine, 2000; McPherson, 2005; Chin i Harrington, 2007).
- *Glazbeno talentirani učenici imaju mnoge druge pozitivne karakteristike (motivaciju, koncentraciju, ustrajnost itd.)* (Haroutounian, 2000a, 2000b; Baum, Owen i Oreck, 2004; Kay i Subotnik, 2004; Kovačić, 2007).

Još uvijek ne postoji odgovarajuće znanje o općim karakteristikama glazbeno talentiranih učenika da bi ih se moglo uspješno identificirati i raditi s njima. U toj raznolikoj problematici (konceptualna konfuzija, nepostojanje opće prihvaćenih definicija, profesionalne kvalifikacije nastavnika, nedostatak znanja o specifičnim kriterijima bitnima za prepoznavanje i evaluaciju karakteristika, problematika upotrebe glazbenih testova itd.) možemo potražiti razloge tomu zašto glazbeno talentirani učenici nisu prepoznati u osnovnim školama. Navodno se to događa kada karakteristike glazbeno talentiranih učenika nisu izražene u velikoj mjeri.

U već završenom istraživanju u Sloveniji (Blažič, Črčinovič Rozman i Kovačić, 2009) pripremili smo i koristili se vrlo pouzdanom anketom (vrijednost Cronbach alfa koeficijenta bila je 0.972) da bismo ispitali karakteristike glazbenih sposobnosti. Anketa se sastojala od 25 kriterija (Tablica 1) povezanih s glazbenim sposobnostima. Rezultati tog istraživanja u skladu su s brojnim objavljenim radovima u području glazbenog talenta, a koji opisuju navedene sposobnosti i mogućnosti (Rojko, 1981;

Moore, 1994; Moore i sur. 1997; Sloboda, 1997; Haroutounian, 2000a, 2000b; Hallam i Schaw 2002; McPherson, 2005; Hallam, 2006). Možemo reći da je iznadprosječna glazbena sposobnost važan pokazatelj glazbenog talenta.

Saznali smo da je pohađanje glazbene škole važan razlikovni faktor kod mnogobrojnih karakteristika u području glazbenih sposobnosti, što je prednost za učenike koji su upisani u glazbene škole (Blažič, Črčinović Rozman i Kovačić, 2009). Sudjelovanje u raznovrsnim glazbenim aktivnostima, a posebno pohađanje glazbene škole kako bi učenici naučili svirati glazbeni instrument, ima pozitivan učinak na razvoj glazbenih sposobnosti. Dokaz koji ide u prilog tom rezultatu može se pronaći u brojnim objavljenim radovima (Sloboda i sur. 1996; Davidson, Howe i Sloboda 1997; O'Neill, 1999; Williamon i Valentine, 2000; McPherson, 2005; Chin i Harrington 2007).

#### Tablica 1.

Osim upisa u glazbenu školu potrebno je proučiti barem još dva važna razlikovna faktora: *spol* i *dob* učenika. To će dati detaljniji uvid u karakteristike glazbeno talentiranih učenika osnovnih škola.

Razvoj glazbenog talenta jest proces u kojem se glazbene sposobnosti razvijaju zajedno s dobi učenika. Istraživanja su pokazala da se glazbene sposobnosti često poboljšavaju između 5. i 10. godine (Moore, 1994, str. 6). Mirković-Radoš (1983) tvrdi da učenici brzo razvijaju ritmički i melodički aspekt svojih sposobnosti između 6. i 9. godine. Kada to razdoblje počne, pojavljuju se viši aspekti glazbenih sposobnosti. Moore i sur. (1997) su saznali da je napredak u pamćenju pjesama između 6. i 9. godine statistički bitan.

Vrijeme provedeno vježbajući, nastavni glazbeni sati i zaokupljenost raznolikim glazbenim aktivnostima u porastu su u skladu s dobi učenika. Haroutounian (2010, str. 620) je napisao da je uloga vježbanja značajan faktor u razvoju glazbenog talenta. Reis (2010, str. 868) također navodi i neke druge faktore koji imaju važnu ulogu u razvoju talenta: vjeru, podršku, okruženje, stanje u obitelji, nastavnike i želju za napornim radom.

Na temelju područja glazbenog razvoja, posebno vezano uz učinke sudjelovanja u glazbenim aktivnostima i razvoju glazbenih sposobnosti prema dobi učenika, pretpostavili smo da će, pod povoljnim uvjetima, stariji glazbeno talentirani učenici izražavati neke karakteristike glazbenog talenta u većoj mjeri nego mlađi glazbeno talentirani učenici. U ovome istraživanju željeli bismo saznati postoje li, u području glazbenih sposobnosti, razlike vezane uz dob glazbeno talentiranih učenika koje bi bile izražene na stupnju statističke značajnosti.

Rezultati istraživanja koje je provedeno o razlikama između spolova variraju. Moore (1994), na uzorku od 128 učenika u dobi od 8 do 11 godina koji su bili talentirani za pjevanje, nije pronašao statistički značajne razlike vezane uz dob i spol u sposobnosti točnog pjevanja u intervalima. Suprotno tome, Moore i sur. (1997) su saznali da su djevojčice u dobi od 6 do 9 godina bolje od dječaka u pamćenju pjesama.

Olsson (2007) je sažeo brojne studije koje su se usredotočile isključivo na istraživanje pitanja spola i obrazovanja u području glazbe, i zaključio: (1) Rodne razlike najistaknutije su u sklonostima koje djeca pokazuju prema glazbenim instrumentima; (2) Očekivanja djece i nastavnika imaju važan utjecaj na glazbene vježbe kod djevojčica i dječaka; (3) Djevojčice i dječaci izgrađuju spolni identitet različitim aktivnostima; djevojčice su, na primjer, više orijentirane pjevanju i klasičnoj glazbi, što im omogućuje afirmaciju spola u obliku sigurnog i privatnog oblika nastupa. Dječaci se, međutim, uključuju u aktivnosti vezane uz glazbenu tehnologiju i elektroničke instrumente; (4) Rodne razlike se također provode i promoviraju u glazbenim uvjerenjima i sklonostima; (5) Muški idoli utječu na dječake, a ženski idoli utječu na djevojčice (str. 996-997).

Na temelju testova glazbenih sposobnosti u slušnoj percepciji (vidi recenziju Shuter-Dysona i Gabriela, 1981, citirano u O'Neill, 1997, str. 49), nisu uočene pouzdane razlike među spolovima. Kada su te razlike i postojale, objašnjene su činjenicom da su djevojčice, u usporedbi s dječacima, imale više glazbene poduke (Gilbert, 1942; citirano u O'Neill, 1997, str. 49). Zanimljivo je spomenuti da okupacija glazbom nije nužno povezana s postizanjem glazbenog uspjeha. O'Neill (1997, str. 49) govori o činjenici da više djevojčica sudjeluje u glazbenim aktivnostima u školi, i da su one uspješnije od dječaka. Međutim, muškarci dominiraju u glazbenoj profesiji i postižu veći uspjeh u glazbenoj karijeri. Autor, na temelju opsežnih istraživanja, objašnjava da glazbena postignuća ne ovise samo o glazbenom daru pojedinca nego i o međusobnom djelovanju sljedećih faktora: kognitivnih faktora, društvenih faktora, faktora okoline, motivacijskih faktora, osobnih iskustava, obrazovanja, težnji, odnosa prema glazbi i obrazovanju u području glazbe.

Zbog slabe teorijske povezanosti razlika između dječaka i djevojčica, razvili smo hipotezu da ne postoje razlike između glazbeno talentiranih djevojčica i dječaka u području glazbenih sposobnosti.

Nominacija od nastavnika važan je postupak za identificiranje darovitih i talentiranih učenika. To se često dopunjava korištenjem skala procjene ili kontrolnih lista (Renzulli, 2010a, 2010b). Za potrebe proučavanja karakteristika glazbeno talentiranih učenika u Sloveniji smislili smo novi pristup da bismo hipotetički dobili uvid u gornjih 5% glazbeno talentiranih učenika na osnovnoškolskoj razini. Nastavnici koji rade na osnovnim školama nominiraju jednog učenika iz svojeg razreda koji je najtalentiraniji od svih učenika. Korištenjem skale za ocjenjivanje i danih kriterija nastavnici su procjenjivali karakteristike učenika. Prikladnost takvog postupka ispitana je u prijašnjem istraživanju (Blažič, Črčinovič Rozman i Kovačić, 2009), kao i u nekim drugim istraživanjima koja su još u tijeku.

U istraživanju koje su proveli Evans, Bickel i Pendarvis (2004) uočeno je da visoka očekivanja nastavnika imaju pozitivan učinak na postignuća njihovih učenika. Također, prema Teoriji očekivanja (Rosenthal i Jacobson, 1968; Babad, 1998; Rosenthal, 1991; Rubie-Davies, 2006; Locke, 2005), postignuća učenika povezana su s očekivanjima

njihovih nastavnika. Vlastite definicije glazbenog talenta koje imaju nastavnici, kao i njihova očekivanja, također mogu imati učinak na procjenu karakteristika talentiranih učenika. Smatramo da su nastavnici koji rade na osnovnim školama i predaju glazbenu kulturu glazbeno talentiranim učenicima kompetentni i pouzdani u procjenjivanju i određivanju tih karakteristika. Tu tezu podupiru i rezultati istraživanja koje je provela Hickey (2001). Njezino je istraživanje pokazalo da je nastavnik glazbene kulture osoba koja s najvećom pouzdanošću može procijeniti kreativna postignuća učenika.

## **Metode**

### ***Definicija problema***

U radovima objavljenima o navedenoj temi uočili smo da je nedovoljno istraživanja provedeno u području glazbenog talenta na osnovnoškolskoj razini (dob učenika od 6 do 10 godina). Preciznije istraživanje o nekim karakteristikama glazbeno talentiranih učenika u području glazbenih sposobnosti bilo je provedeno u Sloveniji na uzorku od 86 nastavnika koji rade u osnovnim školama (Blažič, Črčinovič Rozman i Kovačič, 2009). 86 glazbeno talentiranih učenika bilo je nominirano i evaluirano od njihovih nastavnika. Ovaj članak prikazuje daljnje rezultate tog istraživanja.

Glavna svrha istraživanja bila je usporediti karakteristike uzorka glazbeno talentiranih učenika prema spolu i dobi (6 do 10 godina starosti) da bi se dobio detaljniji uvid u karakteristike glazbeno talentiranih učenika u Sloveniji u području glazbenih sposobnosti na osnovnoškolskoj razini.

### ***Ciljevi istraživanja:***

Ciljevi istraživanja bili su:

- Odrediti je li spol razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti;
- Odrediti je li dob razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti;
- Steći novi uvid koji se može koristiti kao potpora daljnjim istraživanjima u području glazbenog talenta.

### ***Hipoteze***

- H1: Spol nije razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti;
- H2: Dob je razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti.

### ***Statističke metode***

Podaci su obrađeni SPSS računalnim programom za osobna računala. Korištene su sljedeće statističke metode:

- Deskriptivna statistika: za opis karakterističnih vrijednosti varijabli;

- Faktorska analiza, Cronbach alfa koeficijent: za procjenu pouzdanosti;
- Kolmogorov-Smirnov Z test: za razmatranje vjerojatnosti distribucije;
- Neparometrijski Mann-Whitney test i Kruskal-Wallisov test: za procjenjivanje razlika između pojedinačnih neovisnih uzoraka i varijabli (prema spolu i dobi).

### **Uzorak**

U istraživanju je sudjelovalo 86 osnovnoškolskih nastavnika iz 12 škola (gradskih i seoskih) u Sloveniji, koji poučavaju učenike od prvog do petog razreda (u dobi od 6 do 10 godina). Većina nastavnika koji su sudjelovali u istraživanju poučavali su treći razred (25,6%), a najmanji je broj njih poučavao drugi razred (15,1%). Prosječan broj učenika u razredu bio je 17,79. Bilo je nominirano i procijenjeno 86 glazbeno talentiranih učenika (72,1% djevojčica i 27,9% dječaka), od čega je 64 učenika pohađalo glazbenu školu. Većina učenika (n=22) svira glazbene instrumente s tipkama.

### **Mjerni instrumenti**

Podaci su prikupljeni putem ankete koja se temeljila na Likertovoj psihometrijskoj skali. Anketa se sastojala od animacijskog pristupa i 25 kriterija (Tablica 1) za procjenu karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti. Korištena je skala od 1 do 7. Organizirana je uzlaznim redoslijedom, od *nije razvijen* (1) do *razvijen* (7). Koristila se za procjenu stupnja razvijenosti sposobnosti za ovladavanje vještinama.

### **Mjerne karakteristike**

Objektivnost testiranja bila je visoka jer su upute i kriteriji za anketu bili jasni i jednoznačni, a svaki ispitanik imao je jednake uvjete u ispunjavanju ankete. Objektivnost evaluacije odgovora bila je također visoka, jer je skala ocjenjivanja od 7 stupnjeva bila jednaka za sve ispitanike.

### **Pouzdanost**

Da bi se procijenila pouzdanost koristili smo proces faktorizacije. Pouzdanost ankete bila je iznimno visoka zbog vrijednosti Cronbachova koeficijenta:  $\alpha = 0,972$ . Vrijednost indeksa Kaiser-Meyer-Olkinovog testa bila je 0,972, što znači da je uzorak pogodan za faktorsku analizu. Bartlettov test sfernosti je statistički značajan ( $\chi^2=1948,058$ ;  $P=0,000$ ), što znači da faktorski model objašnjava dovoljno varijance varijable. Oba rezultata pokazuju da je faktorska analiza bila logičan izbor. Faktori su izdvojeni Hottelingovom metodom glavnih komponenti (Fulgosi, 1988, str. 104, 119), a broj faktora definiran je Kaiser-Guttmanovim kriterijima. Iz kriterija čiji je eigenvalue iznad 1 (Fulgosi, 1988, str. 134) izdvojili smo tri faktora. Za interpretaciju faktora koristili smo se matricom u kojoj je varimaks rotacija, prema sadržaju, bila pogodnija za interpretaciju. Korištenjem faktorske analize dobili smo tri faktora (faktor melodijskih sposobnosti, faktor ritmičkih sposobnosti i faktor sposobnosti višeg reda), koji zajedno objašnjavaju 70,796% varijance.

## **Valjanost**

Stručnjak je procijenio valjanost sadržaja testa. Faktorska analiza pokazala je odgovarajuću konstruktivnu valjanost. Prvi faktor objašnjava 25,695% varijance, što je više od najnižeg pretpostavljenog stupnja valjanosti (20%). Stoga smo odlučili da je instrument valjan.

## **Proces prikupljanja podataka**

Podaci su prikupljeni u svibnju 2009. godine. Ankete su uručene osobno ili su bile poslane poštom u 12 nasumično odabranih osnovnih škola (i gradskih i seoskih) u Sloveniji. Osobno smo poštom primili ispunjene ankete.

## **Rezultati i rasprava**

### **Testiranje hipoteza**

*H1 Spol nije razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti.*

Najprije smo provjerili jesu li sve evaluacije karakteristika učenika bile normalno distribuirane. Koristili smo se Kolmogorov-Smirnovljevim testom (Tablica 1). Sve varijable bile su normalno distribuirane. Stoga, umjesto primjene t-testa za neovisne uzorke koji podrazumijevaju normalnu distribuciju, koristili smo se neparametrijskim Mann-Whitney testom (Tablica 2).

Tablica 2.

Iz rezultata (Tablica 2) možemo vidjeti da su karakteristike glazbeno talentiranih učenika visoko iznad prosjeka.

Pronađena je značajna razlika samo u dvije karakteristike: slušanje s usmjerenom pažnjom (v9) izraženije je kod djevojčica, a tonska je stabilnost (v20) izraženija kod dječaka. Također bismo trebali spomenuti varijablu za sviranje repetitivnih uzoraka (v4), u čemu je razlika između djevojčica i dječaka na granici statističke značajnosti. Izraženija je kod djevojčica nego kod dječaka. Navedena hipoteza se uglavnom može potvrditi.

Rojko (1981) je predstavio opsežan pregled (za to vrijeme) svih izrađenih glazbenih testova. Homogena upotreba tih testova za dječake i djevojčice uvijek se predviđala, što također potvrđuje naše rezultate koji pokazuju da su karakteristike glazbeno talentiranih dječaka i djevojčica u području glazbenih sposobnosti slične, a razlike su minimalne. O'Neill (1997, str. 49) je uočio nedostatak istraživanja u području razlika među spolovima s obzirom na glazbeni talent. Njegovo je mišljenje da je jedan od razloga za to nedostatak općeg slaganja među istraživačima o tome što je zapravo glazbeni talent (je li to sposobnost osjetiti i razumjeti glazbenu strukturu ili on uključuje mnoge različite sposobnosti koje postoje ili ne postoje na različitim razinama).



U našem istraživanju nastavnici su nominirali i procjenjivali 72,1% djevojčica i samo 27,9% dječaka. Taj je podatak iznenađujuć kada se uzme u obzir činjenica da su nastavnici dobili upute da odaberu i procijene samo jednog učenika (djevojčicu ili dječaka) za kojega su smatrali da je glazbeno najtalentiraniji. Očekivali smo otprilike jednaku distribuciju nominiranih učenika prema njihovu spolu. Smatramo da glazbeno talentirane djevojčice na osnovnoškolskoj razini obrazovanja u većoj mjeri izražavaju neke karakteristike i obilježja vezana uz glazbeni talent, pa su ih zbog toga nastavnici češće nominirali. Predvidjeli smo da će nominacije nastavnika također utjecati na društvene stereotipe vezane uz rodne razlike onako kako one odražavaju očekivanja nastavnika. U tom ćemo smjeru morati provesti istraživanje kojim ćemo potvrditi ili odbaciti naše pretpostavke.

*H2 Dob je razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti.*

Da bismo testirali tu hipotezu, upotrijebili smo Kruskal-Wallisov test.

Tablica 3.

Suprotno našoj hipotezi, statistički značajne razlike između glazbeno talentiranih učenika prema njihovoj dobi nisu bile od presudne važnosti, osim u prve dvije varijable. Stoga smo odbacili hipotezu o tome da postoje razlike (H2). Karakteristika: *Čekanje na točan trenutak kada treba započeti* (v5) bila je izraženija kod učenika prvog razreda (dob od 6 godina), a najmanje je bila izražena kod učenika drugog razreda (dob od 7 godina). Karakteristika: *Uočavanje razlika između intervala* (v13) bila je izraženija kod učenika četvrtog razreda (dob od 9 godina), a najmanje je bila izražena kod učenika trećeg razreda (dob od 8 godina).

Razvoj glazbenog talenta je razvojni proces (McPherson i Williamon, 2006; Haroutounian, 2000c). Stoga iznenađuje činjenica da nije uočena statistički značajna razlika vezana uz dob među učenicima starosti 6 do 10 godina. Što se tiče glazbenog razvoja, grupa učenika koje smo proučavali još nije došla u razdoblje kada se pojavljuju „viši aspekti sposobnosti” (Mirković-Radoš, 1983, str. 91). Oni su još uvijek bili u razvojnom procesu jednostavnih glazbenih sposobnosti (ritam i melodija). Zato nije bilo moguće pronaći statistički značajne razlike između glazbeno talentiranih učenika različite dobi. U daljnjim istraživanjima bit će neophodno proširiti uzorak, uključiti starije učenike, zatim formirati i testirati ostale skale ocjenjivanja, da bi se dobili precizniji dokazi kojima bismo potvrdili ili odbacili naše rezultate.

## Zaključci

U ovome istraživanju koristili smo se vrlo pouzdanim upitnikom (vrijednost Cronbach alfa koeficijenta bila je  $\alpha = 0.972$ ) da bismo proučili karakteristike glazbeno talentiranih učenika u području glazbenih sposobnosti. Rezultati empirijskog istraživanja pokazuju da su karakteristike glazbeno talentiranih učenika daleko više od prosjeka. Naši rezultati u skladu su s onima Haroutouniana (2000a), koji navodi

visoke ocjene od školskih stručnjaka za glazbu, učitelja i neovisnih nastavnika glazbe koji su, unutar okvira Music Link programa, promatrali svaku karakteristiku talenta ili osnova glazbenog talenta koristeći se Likertovom skalom od četiri stupnja. Uglavnom smo potvrdili hipotezu (H1) da spol nije razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti. Što se tiče dobi (od 6 do 10 godina), odbacili smo hipotezu (H2) da je dob razlikovni faktor karakteristika glazbeno talentiranih učenika u području glazbenih sposobnosti. Te rezultate možemo objasniti činjenicom da su procjenjivani učenici bili u razvojnom dobu jednostavnih glazbenih sposobnosti. Stoga nismo mogli pronaći statistički značajne razlike među njihovim sposobnostima koje su vezane uz njihovu dob. Mala varijabilnost u rezultatima, koja nije bila linearno izražena, može se pripisati relativno malom uzorku. U radovima objavljenima o toj temi možemo pronaći brojne studije koje istražuju rodne i dobne razlike u području glazbenih sposobnosti i glazbenog talenta, no one ne pružaju empirijsku komparaciju naših rezultata.

Rezultati našeg istraživanja pružaju nam detaljniji uvid u karakteristike populacije glazbeno talentiranih učenika na osnovnoškolskoj razini obrazovanja, te utiru put za kontinuirano istraživanje toga područja.

Da bismo imali sveobuhvatniji pogled na karakteristike specifične populacije glazbeno talentiranih učenika u slovenskim osnovnim školama, bit će također potrebno usmjeriti naša buduća istraživanja i na druga područja karakteristika glazbenog talenta, kao što su: glazbena kreativnost, glazbena izvedba, znanje o glazbi, glazbene aktivnosti (i druge karakteristike i obilježja) izražene na školskim satima glazbene kulture. Također će biti potrebno povećati uzorak prema kvantiteti i dobi.