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Correlation of Teachers and Pupils in the Context of Singing in Primary School

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Abstract

Singing activity is the basis of music education and its essential implementation form at all stages of general education. Voice is a primary musical instrument and an elementary means for performing that enables pupils to approach musical art in an appropriate way so that they can successfully receive, experience and evaluate it. With the research we discover and prove the importance of mastering the vocal technique of teachers, which is a prerequisite for quality singing activity in primary school. From the stated it follows that the application of a quality method of vocal technique, which teachers use both in speech and singing undoubtedly means improving the quality of singing activity in the educational process. The results also highlight important correlations between teachers and pupils in music education, and especially in singing activities, where we determine the strong influence of teachers on pupils.

Key words: *singing activity, musical education, vocal technique, primary school.*

Introduction

In modern society, verbal communication is increasingly important in various fields and there are many professions where voice is decisive for successful work (Verdolini, Ramig, 2001; Vilkman, 2004). The category of professions, where a healthy voice and knowledge of vocal technique are the basic conditions for

quality work, also includes the profession of a teacher. The mentioned issues are especially topical for teachers who teach music education.

Children's development is a complex and dynamic process within the integration of motor, emotional-social and cognitive factors that are intertwined and interdependent. The insufficient presence of quality musical activity in the development of adolescent youth leaves the consequences that are visible in a later period and cannot be completely remedied. Namely, during the development and maturation of the pupil the influence of musical stimuli decreases and consequently the lack of experience and the possibility of musical engagement can slow down both the musical and intellectual development of a pupil who is very perceptive when it comes to the stimulus of the environment in the early childhood (Green, 2006). The influence of musical activities on the pupil's comprehensive development is undoubtedly the greatest in this period, but it subsides and declines over time. Because of this, musical activity and the recognition of quality musical content are of paramount importance to the pupils in their early childhood. This allows them to be involved in various fields of their expression, which plays an important role both in the cognitive process (Gardner, 1999), as well as in the creation of a pupil's overall personality. Quality teaching of music education is conditioned by an integrated approach and appropriate teacher's activity which is a guarantee for quality work in the educational process. The pre-school and school period is decisive for shaping the image of an adult, and music activity and especially singing as a key music activity plays an important role therein. In the field of music education, special attention should be paid to vocal education, vocal technique and singing. Teachers are insufficiently aware of the importance of knowing the voice apparatus and mastering vocal technique. In the domain of singing activity, knowledge of different singing methods is of great importance to the teacher and the basis for the correct approach according to the pupils' developmental level. The success and interest of pupils for singing and musical activity is entirely conditioned by their surroundings and an inadequate teacher's approach can even create an aversion to music engagement in pupils. This is especially important when talking about singing. Knowledge of vocal technique should enable the teacher to adapt to pupils and to choose appropriate techniques for the optimal development of the vocal apparatus and at the same time musical abilities.

Experts have different opinions about the time when children should start to learn vocal technique, as well as whether they should sing at all during the maturation and formation of the vocal apparatus. We agree with those (Miller, 2004) who advocate the thesis on the harmlessness of singing at any age. They condition this by the correct soft setting of the tone and proper breathing. Many

authorities on singing pedagogy advocate the learning of appropriate vocal technique in the first three years and even earlier (Philipps, 1992; Temmerman, 2000; Welch, 2000; Miller, 2001; Nelson et al., 2002), however with the correct forms and methods. The developing voice of a child possesses unique characteristics, which the method of singing teaching must adapt to (Welch, 2000). If one does not take into account the individual characteristics of a particular pupil in teaching singing, voice problems may arise in the form of illness, injuries or improper use of the voice apparatus, which is reflected both in singing and in speech (Wilson, 1987). Vocal technique education in the first triennium of the primary school is based on various strategies of singing teaching (Sabol, Blades-Zeller, 1995; Rutkowski, 2003). The condition for successful mastery of vocal technique is knowledge of the basics of human anatomy and the functioning of the vocal apparatus. The emphasis must be, from the very beginning, on proper breathing, posture, relaxation and proper orientation and tone setting. A prerequisite for vocal education is, of course, a healthy vocal apparatus (Logan-Pelhan, 2002). The vocal apparatus of children does not differ significantly from the vocal apparatus of adults. We can talk about the same anatomical and physiological characteristics in both. The only difference is in the size of individual components. Namely, in accordance with their physical development, the child also experiences voice changes that are most pronounced during the period of mutation. This is especially evident in boys when these physical changes have a very pronounced effect on the child's voice (Cooksey, 2000). The sound qualities of the voice depend on the size and position of body's resonance cavities, which are conditioned by age, as well as the size of the vocal cords which is also important for the ambitus of the voice. All of the above affects the voice quality. The colour of the children's voice is mainly due to the dominance of the head resonance; there is also a resonance of the chest cavity, but to a lesser extent. For this reason, children's voices are usually more light and relaxed compared to adult voices. Most acknowledge the common foundations, such as the use of bright and light tones with adequate muscular support, proper and relaxed posture, covering of the ears for listening to themselves and control, individual singing without a teacher, appropriate motivation in terms of praise and criticism, and syllabic singing with the text. These basics mean easier access to vocal technique learning for many children (Rutkowski, 2003; Liao, Davidson, 2007). Teachers and other music educators must be very careful when forming children's voices and teaching vocal technique. We need to follow principles that are also important for adult singers, but are indispensable for pupils. The progression is reflected in the corresponding rhythmic and melodic exercises aimed at the development of various musical abilities (Langness, 2000; Welsh, 2000;

Silverman, 2008). With proper body posture, we can also ensure body relaxation. When singing, we should consciously activate the diaphragm breathing muscles first. The articulation will be appropriate if we initially relax the jaw, tongue and lips and open the space in the oral cavity and throat. The setting of the tone is the basis of the proper singing and we have to pay great attention to it. It affects the purity of intonation. The expansion of the voice range must be spontaneous and a long-term matter. We need to cultivate both "legato" and "staccato" singing and all intermediate stages. Dynamics and agogics as the basic components of the interpretation must be flexible and appropriate according to the requirements of the score (Greenberg, 1970; Goetze, 1985). Teachers must, in order to successfully develop and shape the voices of pupils, know and carefully select exercises for these activities and continuously implement them in music education as well as in all other musical activities (Gordon, 1985).

Methodology of Research

The quality of singing activities in the classroom depends on the above-mentioned competencies of the teacher who most often does not manage the vocal field in a complex way. The problem is identified in the music pedagogy in practice in the first and second cycle of the primary school, where we want to shed the light on the reasons for the established situation. We are interested in individual segments of the singing activities of teachers and pupils and the connections between them. In particular, we are interested in the influence of teachers on pupils in mastering vocal technique. Systematic and representative research of the issue in relation to the discussed problems has not been implemented in Slovenia, while elsewhere we have found research related to singing activity only for a certain segment of creative singing and reproduction.

Research goals:

- To determine the quality of singing activities in the first triennium in terms of rhythmic and melodic reproduction, dynamics and singing phrasing.
- Find out the connections and the influence of the vocal technique of teachers on the quality of students' singing.

The study of results is based on a quantitative empirical descriptive causal non-experimental method of pedagogical empirical research.

Sample of Research

We randomly selected and included third-grade pupils of randomly selected nine-year primary schools in Slovenia who had the same teacher continuously in the first three years of education. On the basis of the random selection principle, we included a sample of 21 urban and 20 rural primary schools from different Slovenian regions. The survey involved 935 pupils and 52 teachers from 41 primary schools.

Measuring Instruments

In the research, we used a test to evaluate the quality of singing activity, which we summarized from the project *Music education in the new curriculum* by The Ministry of Education, Science and Sport. We adjusted it to the purpose of the research for determining the correctness of rhythmic and melodic reproduction, dynamics and phrasing, and established connections between teachers and pupils. In setting the evaluation criteria, we relied on the test *Development and validation of a clarinet performance adjudication scale* (Abeles, 2002), which has high reliability (*Cronbach Alpha* = 0.949). We previously examined and studied other numerous non-standardized and standardized tests that measure musical abilities (Stumpf, 1883; Revesz, 1954; Bentley, 1966; Lowery; 1926; Lundin, 1967), musical achievements (Colwell, 1970), musical performance (Mosher, 1925; Watkins, Farnum, 1954) and musical interests (Hevner, 1936; Seashore, 1960; Chalmers, 1978).

Statistical Methods of Processing

The data were processed with the statistical program SPSS. We performed basic statistical data processing. The measurement characteristics of the assessment scale were determined by calculating the coefficient *Cronbach Alfa* and by calculation of the *factor analysis*. To determine the normality of the data distribution we used the *Kolmogorov-Smirnov test* and then normalized the data.

Results With Interpretation

Analysis of Data for Determining the Correctness of Rhythmic and Melodic Reproduction, Dynamics and Phrasing in Singing

The table 1 provides descriptive statistics for individual instruments. Depending on the asymmetry coefficient (KA) and the coefficient of flattening (KS) (values should be between -1 and 1) and values of *Kolmogorov-Smirnov's test* (statistical significance of the instrument), the data were normalized according to the standardized normal distribution method prior to further processing.

Table 1. Descriptive test statistics for vocal technique and quality of singing – variables from 1 to 16

Claims	Min	Max	M	Me	Mo	SD	KA	KS	K-Sz sig.
1	1	5	3.73	4.00	4	1.140	-0.599	-0.437	1.505
2	1	5	4.10	4.00	5	1.125	-1.228	0.762	1.947
3	1	5	3.29	3.50	4	1.242	-0.514	-0.598	1.562
4	1	5	2.56	2.00	2	1.349	0.570	-0.831	1.711
5	1	5	3.88	4.00	5	1.278	-0.890	-0.413	1.809
6	1	5	3.00	3.00	1	1.482	-0.075	-1.356	1.164
7	1	5	2.87	2.00	1	1.815	0.167	-1.850	1.816
8	1	5	1.81	1.00	1	1.496	1.549	0.669	3.145
9	1	5	2.25	2.00	1	1.297	0.691	-0.604	1.704
10	1	5	2.33	2.00	1	1.438	0.712	-0.940	1.758
11	1	5	2.17	1.50	1	1.465	0.934	-0.581	2.079
12	1	5	2.15	2.00	1	1.363	0.822	-0.683	2.034
13	1	5	2.22	2.00	1	1.331	0.539	-1.198	2.071
14	1	5	2.25	2.00	1	1.440	0.689	-1.008	2.077
15	1	5	2.44	1.50	1	1.650	0.528	-1.452	2.228
16	1	5	2.38	2.00	1	1.561	0.609	-1.263	1.976

1	The rhythm is accurate and the tempo corresponds to the prescribed one.
2	The accents are correctly performed in interaction with the text.
3	Performance takes into account the rhythmic features.
4	Appropriate agogics is present in the implementation.
5	The melody is accurate and matches the record.
6	The melody is performed precisely in terms of intonation.
7	The initial intonation of the song is accurate.
8	Performance is duophonic or harmonically supported by instrumental accompaniment.
9	There is a dynamic scale ranging from p to f in the performance.
10	Dynamics affects the intensity of singing.
11	Recorded dynamics is taken into account when performing.
12	The dynamics are appropriate according to the melody, rhythm and text.
13	Phrases are properly set up and performed.
14	When performing, there is an appropriate dynamic increase and decrease.
15	The last syllables in the phrase are correctly not emphasized and sung, withheld.
16	Long tones are performed with an appropriate intensity based on the duration of the notes.

Legend: Min – Minimum value; Max – Maximum value; M-Arithmetic mean; Me – median; Mo – modus; SD-Standard deviation; KA – asymmetry coefficient; KS – coefficient of flattening; K-Sz – Kolmogorov-Smirnov distribution normality test

From Table 1, we can see that all the recordings were evaluated and graded. The highest mean value of the grades occurs in variable 2, *"The accents are correctly performed in interaction with the text."* and it is 4.10, so rhythmic pronunciation is very good in most of the recordings. The average lowest mean value is for estimates for variable 8, *"Performance is duophonic or harmonically supported by instrumental accompaniment."* and it is 1.81, which means that teachers do not master the harmonic component and, in practice, singing is not accompanied by harmonic instruments.

The dispersion of the responses expressed by the standard deviation was greatest for variable 7, *"The initial intonation of the song is accurate."* (SD 1,815), and the smallest in variable 2, "*The accents are correctly performed in interaction with the text.*" (SD 1,125) The coefficients of asymmetry for variables 1, "*The rhythm is accurate and the tempo corresponds to the prescribed one.*", 2, *"The accents are correctly performed in interaction with the text", 3, "Performance takes into account the rhythmic features.",* 5, "*The melody is accurate and matches the record.*" and 6, "*The melody is performed precisely in terms of intonation.*", show more or less asymmetry to the left, while in the other variables asymmetry is to the right. The largest deviation of the asymmetry to the left is for variable 1, *"The rhythm is accurate and the tempo corresponds to the prescribed one"* and to the right for variable 8, *"Performance is duophonic or harmonically supported by instrumental accompaniment"*. The coefficients of flattening show the most pointed response distribution for variable 2, "*The accents are correctly performed in interaction with the text.*" (KS 0.762), and the most flattened distribution with variable 7, *"The initial intonation of the song is accurate."* (KS -1.850). With the *Kolmogorov-Smirnov test* we have found that all variables are normally distributed. However, for further processing, the data were normalized using the method *RANKIT*. The constructive validity of the scale was determined by *factor analysis*. Prior to the factor analysis, we measured the measurement characteristics with the method of internal consistency of the evaluation scale. The reliability coefficient *Cronbach Alfa* was calculated to show the measurement statistics, indicating a high degree of consistency of the test used – 0.975.

Discussion

As part of the variables that evaluate rhythmic reproduction in singing, we find that 61.6 % of the teachers' rhythm is accurate and the tempo is appropriate. Accents in the text are usually correctly performed by 76.9 % of teachers.

Rhythmic specificities are taken into account by half of the teachers, and adequate agogics is present only in 25 % of teachers. A number of studies show the greatest impact of continuous intense musical education on the sustainability of rhythmic development (Shuter-Dyson, Gabriel, 1981). For this reason, teachers should give more emphasis to the development of rhythmic skills in music education.

In the second set of variables that evaluate the melodic reproduction of singing, we find that for 69.2 % of the teachers, the melody is accurate with regard to the record of the score. In terms of intonation, however, the melody is accurate only by 40.4 % of the teachers. A similar percentage is also shown by the results of the accuracy of the initial intonation of the song, as only 42.3 % of teachers know the importance of initial intonation. It is a worrying fact that only 17.3 % of the teachers perform two-voice singing harmonious accompaniment. From the results, we find that in practice too little attention is paid to the accuracy of singing intonation, which may result in a lack of discrimination in tonal heights, also confirmed by other studies (Welch, 2007).

From the results we further find that the dynamic expression in singing is insufficient in the first three years. Only 7.7 % of teachers have a tendency to use the dynamic scale. In a bit less than a third (26.9 %) of teachers, the singing intensity is felt as a tendency for proper dynamics. The prescribed dynamics were taken into account only by 21.2 % of teachers and with the same percentage also the dynamic appropriateness in regard to rhythm, melody and text.

In the last set of variables that evaluate the intensity of the phrasing, we find that there is usually no emphasis on the proper determination and performance of the phrase. In the majority of cases, it is not possible to find suitable increases and decreases either. In half of the teachers we find incorrect emphasis on light and heavy periods, while in 46.2 % of teachers, longer note values are performed without adequate intensity.

Conclusion

The results of our research show a close connection between teachers and pupils in the field of vocal technique and singing. Testing and analyses show that pupils of teachers who use a high quality vocal technique in teaching have a sufficiently developed musical ability and a proper attitude towards singing, appropriately master vocal technique, have appropriate musical skills for their age and enjoy singing. The results undoubtedly confirm the influence of teachers on the singing and overall development of pupils as well as the importance of the teacher's mas-

tering of the vocal technique. On the basis of our research we can emphasize that the vocal technique in the educational process plays an important role both in the singing and the speaking domains, and it should be further explored and given proper attention. This would be an additional good basis for accepting vocal technique as an important element of musical education and the educational process in general, as a skill that teachers at any level and in any field must satisfactorily master and thus ensure a higher quality of teaching. This is essential for the music field; teachers should be aware that pupils have the right to good music education, which is also conditioned by, inter alia, appropriate vocal technique and singing activity.

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