# THE TRANSFER EFFECT OF MUSICAL ACTIVITIES IN TERMS OF ABILITIES AND PERSONALITY DEVELOPMENT - ABOUT THE RESULTS OF A MUSIC-PEDAGOGICAL STUDY

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Abstract: Music is an essential condition for both general development and educational work. It evokes emotions, has a therapeutic effect and affects both the individual's intellect and physical-mental-emotional world. As a result, in the last few years or decades, the impact of music and musical activities have become a central topic of more and more research. The requirements of modern education are also met by creative activities that have a broad transfer effect, spread their impact over several areas, a multitude of skills and have a positive effect on the development of the whole personality as well. In the present paper, we demonstrate the results of such study. In our music-pedagogical study, focusing on the elements of production and reproduction, perception and reception, we summarize the ability-developing and personality-developing effects of the use of creative – instrumental and vocal-instrumental – musical activities.

Keywords: music, ability, personality development, transfer, research, study, educational

## 1 Introduction

Music is a human-forming force that affects the whole personality. Overall, it has a significant impact on the general development of an individual. It predisposes us to be more receptive to the beautiful; moreover, it shapes taste and human behaviour. Music education is only a small segment of institutional training yet it can strongly influence the individuals' general development. It directly induces emotions, affects the development of cognitive and emotional competencies and physical and mental health. Consequently, music education is a crucial part of educational work and personality development. Last but not least, music is considered one of the central research topics in various examinations. According to their fields of expertise, music researchers, music educators, music historians, psychologists, doctors and therapists study the impact of music on ability development, talent development, concentration, socialization and community building processes. Music aids in achieving spiritual harmony and well-being, in preserving and nurturing health, in relieving stress and rehabilitating. It is therefore a tool in education, personality development, therapy and prevention (Falus 2016).

## 2 The place and role of music in ability development

The quality and degree of ability (as a suitability for an action or performance)[1] is determined partly by the person's innate abilities and partly by the set of environmental influences, and the experience, knowledge and skills that are to be acquired in the learning process. The abilities are divided into two main groups. These are general abilities – above all, intelligence and creativity – as well as special abilities that are manifested in different forms of activity, e.g. music, fine arts and sport. In the system of basic musical ability, both simple and complex abilities are present (Erős 1993: 10). Every person has an ability; however, as an ability covers internal hidden possibilities, it is only manifested and measurable as a result of a certain performance. Likewise, based on one's talent, musical abilities are created in consequence of learning (Erős 1993, Tóth 2011). Abilities and skills cannot be realized without an organic cooperation. Musical abilities and skills are 'automated' components of the musical activity. The physiological conditions of their formation are: the interaction of the central nervous system, the sensory organs and the motor apparatus. 'The instrumental musician, for instance, uses the senses of hearing to correct the movements of the hand apparatus, and the singer also regulates breathing and the innervation of the larynx accordingly' (Michel 1964: 69).[2] There are a number of components in terms of musical abilities. 'By musical abilities we mean a combination of many factors. These include instrumental and singing abilities, music-specific cognitive processes, emotional and musical experiences, motivation, musical preferences, attitudes and interest' (Gembris 2002, cit. Turmezeyné-Máth-Balogh 2005: 100-123). Gordon (1971) claims that abilities determine the level we are able to achieve, but the role of the environment and music education are important in taking the opportunities to the full. Besides abilities, Sloboda (1994) emphasizes the importance of the environment, interest and motivation (Janurik-Józsa 2013).

Therefore, the environment, motivation and education play a significant role in the ability development. This also applies to music education. Music classes lead to results only if they follow a complex musical education that includes perception and reception, reproduction (singing, musical reading and writing, instrument playing) and creation (improvisation and improvisation activities). Each activity – receptive, reproductive and creative – urges students to engage in external and internal activities. Singing requires physiological functions; the logic of music activates the intellectual functioning; and its pictoriality, dynamics and direct emotional impact help the development of the individual's personality through the experience of singing, music making and listening to music (Dobray 1983). Music requires twice as much brain activity as speech, and instrumental singing activates the entire pallium. As a result, the many skills that are used while music making also aid in developing other areas. 'Musicians have a demonstrably more advanced corpus callosum – a tract which connects the two cerebral hemispheres of the brain – than average people. Accordingly, there is much greater interoperability between skills related to emotional intelligence, logical thinking and speech than in general' (Marton, Janurik 2016).

From the perspective of the development of musical abilities, certain elements of music are important, which according to *Zoltán Kodály* (1882-1967) are effective "educational tools." In his opinion, 'Rhythm develops attention, concentration, steadiness and ability of innervation. Melody opens up the world of feelings; it changes in intensity, tone and it is the sharpener of our auditory organ. Singing is, after all, such a versatile bodily function that the effect of physical education is immeasurable – in case 'soul education' would not be important to someone. Its health benefits are well known' (Kodály 1974: 95). It is in this spirit that Kodály had developed and created his music-pedagogical method; its essence is putting musical and aesthetic education at the centre of child's upbringing and personality formation.

## 3 Creative musical activities and their impact

Creative and diverse musical activities are at the forefront of modern and progressive methods. These can be solo, small-group, - and large-group classes, and can be realized in vocal, instrumental, vocal-instrumental, musical-kinetic forms. The range of possibilities is extremely rich; the active forms of music, singing, instrument playing and physical movements always have to be coordinated harmoniously. Singing in groups proves to be more advantageous than soloing. With its communicative aspect, it invites collaboration and improves relationships between people. At the same time, it ensures the anonymity of individual expression and interpretation, which in many cases creates a secure sense of self-realization (Mátejová 1993). This has been shown to be particularly beneficial for adolescents struggling with "complexes" and for teenage boys whose voice mutation has just begun.

[1] The literature on abilities is very rich, including sources of researches focusing on the most significant musical abilities and skills: Michel 1964, Teplov 1965, Kokas 1972, Poledňák 1984, Gordon 1971, Dombi Kemény 1999,, Franěk 2007, Tichá 2009.

[2] In this paper, I have translated all quotations from Hungarian and Slovak into English.

The biggest role of vocal expression (apart from professional factors) lies in the fact that it is the most natural and spontaneous way of spiritual and somatic expression, regardless of age and gender. The psychological and somatic positive effects of active singing are a proven fact.[3] Besides somatic factors, singing has a positive impact from a psychological viewpoint. Singing contributes to the training and shaping of sound and hearing, helps develop a sense of rhythm, increases emotional and aesthetic expression, and, of course, provides an aesthetic experience (Pavlovská 1980). An additional or accompanying element of the vocal performance can be the instrumental play as well as a part of musical games, or it can also be a tool for 'demonstrating' certain curricula.

Musical-kinetic activities also prove to be an excellent tool for developing musical competencies. They give an opportunity to satisfy the need for physical movement. It is important for the individual to be able to express the music they hear with movement (Orsovics 2018). Singing and music lessons as well as musical games, conducted in a creative atmosphere, can be assigned a significant role, for the need for play is undoubtedly in human life. '*Play is an inseparable part of proper development*' (Poledňák 1984: 76). It is not just a childhood- and adolescence activity, but play is even related to adulthood and old age; it accompanies human life in various forms. During cognitive development in early and preschool age, *play is both a sensorimotor and dominant activity* (Leontyev, cit. Poledňák 1984: 77). At a later stage, it is symbolic, when functioning as a manifestation of thinking and speech. During periods of personality development, the importance of play cannot be neglected and ignored, for play is often a reflection of the subject's physical and social environment, his self-esteem and "self-interpretation," regulation and differentiation of feelings, and the derivation of tension or liberation. From a psychological perspective, in communities, groups and classes, play also provides an opportunity to enhance socialization processes, to deepen cooperation and build teams. From a pedagogical point of view, therefore, the play helps to bridge the professional immanentist position and contributes to the approximation and connection of the experiences and cognitive horizons of music, and of the teacher and the student (Richter 1984). The foci of each lesson are those activities that result in inventive product creation. From a pedagogical point of view, the presence of play is evident, which, on the one hand, functions as a tool for community bonding, and, on the other hand, provides a fertile ground for achieving the goals of development.

Creative singing and music lessons, musical games, and applied musical-kinetic activities clearly have ability-developing and personality-building qualities. These classes and activities are highly popular due to their dynamic character, colourful content, cheerful, liberated atmosphere and last but not least because of their creative elements. As for their advantage, they greatly influence concentration, stimulate musical hearing, and harmoniously coordinate the participants' audio-visual and motor perceptions. In many cases, different musical games and physical exercises even cultivate the manifestation and expression of movement. They thus have a multifaceted effect on the process of personality development.

**4 Several examples of examining musical ability development**

The positive results and ability-developing effects of active musical activities have already been proven in many studies, both internationally and domestically, more particularly in the last few decades. The requirements of modern education are met by creative activities that have a broad transfer effect, that spread the results of their development and a multitude of abilities over a large area. Finally, progressive education demands activities that positively influence learners' complex personality development. Music is undoubtedly one of the best tools to accomplish this goal. This is evidenced by the successful application of modern and progressive music-pedagogical methods, principles, techniques and their various adaptations, as well as by the results of research in the field.

Among the acknowledged international personality development trends in music pedagogy, the results and impacts of the adaptation of Dalcroze and Orff's principles to pedagogical practice are well-known. *Émile Jaques Dalcroze's* (1865-1950) internationally proven concept was introduced to the professional and general public; it focused on the relationship between physical movement and music. Dalcroze created *eurythmy*, the essence of which is to examine the relationship and impact of music and movement.[4] The concept and goal of *Dalcroze's eurythmy* is, above all, to deepen the rhythm formation and to develop a sense of rhythm. This is a significant help in understanding and perceiving music. He described his method as follows: *'The method I have created, which bears my name, aims to harmonize an individual's intellectual and physical abilities with the help of music'* (Dalcroze, cit. Szőnyi 1988: 9). In addition, *Carl Orff's* (1895-1982) concept of music pedagogy is based on four decades of practice. The aim of the *Günther School of Dance and Gymnastics*, founded together by Orff and *Dorothea Günter* (1896-1975), was to combine music and physical movement in the curricula of dance and gymnastics teachers and thus to strengthen the pedagogical and practical essence of complexity.

Dalcroze 'experimented' with children, Orff's, with young adults. The ability-developing effect of their music-pedagogical concept is supported from the perspective of both general and musical abilities. These were manifested in the following aspects: rhythm strengthens and coordinates muscle movements, develops eye-hand-body coordination and hearing also contributes to this; there is an opportunity for the child to express himself / herself freely, thus developing imagination and creativity; it affects his/her temperament and psychic development; enhances attention and concentration; contributes to the harmonious personality development; helps reduce tension – relaxation are play are very important after a school-day, but, at the same time, they help increase the child's attention and interest; develop the individual's adaptability within the community.

Consequently, it can be admitted that the application of Dalcroze's and Orff's pedagogical principles in effect significantly contribute to the simultaneous and complex development of an individual's abilities and personality (Szőnyi 1988).

The ability and personality development of music education has also been studied by other researchers and music educators. The world-famous and widely used Kodály method has a scientifically proven impact on ability development, which has been the subject of several representative researches. The music-pedagogical study of *Klára Kokas* (1929-2010) enjoys an international recognition; the scholar's aim was to assess the effect of music education on the development of abilities by using the Kodály method. The ability-building effect of music education has been proven in music education as well as in other fields and subjects; specifically, in language education, mathematics, memory and attention, mobility skills and other skills.[5] *'The observation ability of music groups increased in rhythm learning, and they also gave better results in visual tasks. Rhythm formation has an attention-enhancing effect on mathematics and more punctual hearing, on spelling. Therefore, one subject has an effect on the other and contributes to the development of psychic functions (…) Music education – conducted according to the Kodály method – has a transfer effect on the child's other abilities, namely balance and*

[3] Cf. e.g. Kohler 1968, Fengler 1961, Schütz 1962

[4] Dalcroze's method of *eurythmy* combines elements of music pedagogy and music therapy, i.e., it simultaneously focuses on the development of musical abilities, skills and complex personality development (Tóth-Bakos 2016).

[5] In physical education (PE), the results of anthropometric (movement) studies showed that the results of balance and rhythmic-free exercises were remarkably better in the musical groups. In math, children from musical groups solved arithmetic problems in a significantly shorter time than children who were less involved in music. Also, there was a strong significant difference in the results of the spelling exercises performed in *Hungarian grammar lessons* in favour of the musical groups.

*observation skills, as well as arithmetic and spelling performance'* (Kokas 1972: 108). Summarizing Kokas' research, it can be stated that compared to other school subjects, the practice of music education showed clearly better results among children participating in everyday music lessons.

Kodály's educational ideas, resp. the impact assessment of singing and music and its idea of personality development also engaged many researchers. Among others, using complex psychological and pedagogical surveys, *Ilona Barkóczi and Csaba Pléh* intended to explore the effects of regular singing, music making, physical movements and listening to music on the whole human personality. The experiences and results gained during their research were presented to the public in their paper entitled 'A Psychological Follow-up Study of the Method of Kodály's Music Education' (*Kodály zenei nevelés módszerének pszichológiai utánvizsgálata*). The researchers proved their hypotheses according to which *the general level of intelligence* – regarding the intelligence examined with traditional methods – *did not change* under the influence of the Kodály method, but *the developing effect of music education in creativity* was clear (Barkóczi-Pléh 1977: 141).

The correlation between intelligence and creativity has increased as a result of music education. The number of those who had good intelligence but poor creativity decreased. Social differences also played a significant role in intelligence-studies. Among the children, they were of higher and lower social status. The creativity-enhancing effect of music education has been demonstrated to a great extent in lower-class groups. '*In children with low social status, the disproportion between verbal and non-verbal intelligence has equalized or decreased; in other words, the structure of intelligence has become more balanced. All this suggests that the compensatory effect of music education on cultural disadvantage is realized through the structure of intelligence and the development of creativity*' (Barkóczi-Pléh 1977: 142).

As the above-mentioned studies show, active music, singing, musical movement, creative music classes and diverse creative activities – with a systematic order of skill development – primarily affect the individual's emotional world and exert their multifaceted positive transfer effects at all stages of development.[6]

## 5 A study of ability development among student teachers with the help of vocal and instrumental activities

### 5.1 The subject, purpose and process of a music-pedagogical research

The music-pedagogical concepts and ability development studies outlined above made it justified to examine the ability- and personality development effects of instrumental and vocal-instrumental activities among student teachers.

*Research objectives*: to survey the impact of creative musical activities, the transfer effect of the use of instrumental play and vocal-instrumental activities.

The *research process*: in the process of the study, the music education with first-year pre-school- and teacher trainees took place in 2 small groups (6-6 people), in two terms. The members of the group were heterogeneous in terms of knowledge of music and piano playing. In the period between the initial and final phases of the study, we used an alternative method in which we focused on instrumental education based on acoustic elements. The aim was to avoid the way of acquiring self-serving academic knowledge and to prioritize the acquisition of pragmatic knowledge for the purpose of creative music education. This process included enriching music education with instrumental, vocal-instrumental, musical-kinetic elements and activities.

The *research methods* were aimed at examining ability structures and approaching developmental trends. The main phase of the study series covered solving written music tests and reproducing tasks. A deductive research method was used for the study. Musical abilities were examined in a multidimensional system, adapted to the specific conditions of music and instrumental teaching.

Accordingly, we focused our studies on 4 areas: 1.) *rhythm*, 2.) *written auditory* and 3.) *auditory reproductive examination tasks* and 4.) musical activities focusing on the study of *instrumental play*.

### 5.2 Content and course of the research

In our ability-research, we monitored the process of musical development and surveyed the development of individual abilities and skills. Based on the results, we were able to draw conclusions that testify to the positive results of ability development.

The traditional music- and instrument playing education first teaches sounds and the system of sounds; only then does it turn to melodies and the unity of melodies. The pedagogical approach – mostly based on the vast majority of nursery rhymes and folk songs – primarily focuses on the text and the musical text. A melody is the first structural unit that – like the sentences, words and syllabi used in speech and written text – can be broken down into musical sentences and motifs. In grammar, the syllable represents microstructure, the sentence, the unity whereas in music the motif represents microstructure and the melody, unity. Students performed singing, writing, reading, and instrumental musical activities through the common use of microstructures and unity. Thus, the musical language and its structure became a *model-construction* for them, often using spontaneous forms of activity. In such learning process, '*the learnt musical language becomes their own to such an extent that it is also used in free improvisation […] and is transferred to other learning activities*' (Kokas 1972: 16).

The positive features of the pedagogical approach applied to the development of musical skills could be found in the realization of vocal-instrumental reproductions, musical productions and in the form of individual chamber plays and chamber groups' plays. An important pillar of our alternative method was the simultaneous act of musical instrument playing and singing. The instrument playing accompanied by singing makes the composition 'lively,' for the students receive the rhythmic and melodic elements, the microstructures of the structure of the composition with their own vocal-instrumental reproduction.[7]

We can establish several correlations between certain areas of the alternative method used in the process of our ability-research. Many musical perceptions stem from physical movement. When it comes to teaching students to play a musical instrument, it is better to guide beginners not by counting but by perceiving the pulsation of the songs. Awareness of rhythmic forms proved more useful after the primary rhythmic experience. The acquisition of rhythm and melodic motifs was aided by music-related *sensorimotor performances*, such as walking to the rhythm, mostly applauding, drumming, and so on.

The basics of sensorimotor rhythm exercises are thus activities that use elements of movement based on materials of singing, vocal-instrumental reproductions, nursery rhymes and folk songs. Hearing training is also an integral part of the rhythm training process regardless of whether we are talking about

[6] See also: BAKOS, A.: *Zenepedagógia és zeneterápia* (2014); CSEHI, A.: *A zenei képességek és a kisgyermekkori személyiségfejlődés kölcsönhatása* (2018); TÓTH-BAKOS, A.: *Mozartov efekt - môže hudba zlepšiť inteligenciu a kognitívne schopnosti?* (2015); TÓTH-BAKOS, A. – CSEHIOVÁ, A.: *Music and Brain - Music Training Transfer* (2016).

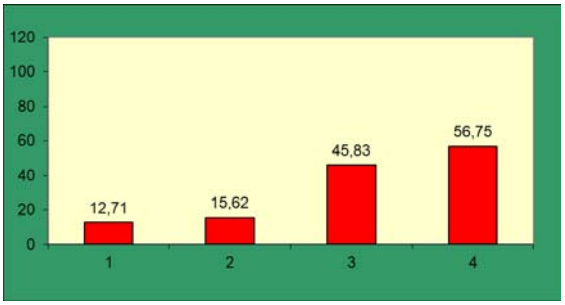
[7] In our study, we worked with two types of microstructures. We first focused on the rhythm exercises, then on the melody motifs (the melody already contains the rhythm). It is also effective to present the same material in a variety of forms. Above all, we emphasize the increase of the durability of the "experiential" memorized material, as well as the search for correlations between the individual elements; not only to recall the acquired knowledge, but to be able to apply it in new circumstances.

external or internal hearing training – since hearing is an active activity of consciousness.

**5.3 Research results**

The development of musical abilities of the two examined groups was monitored by observing each musical dimension. These are: 1. rhythm, 2. hearing – writing, 3. hearing – reproduction, 4. musical instrumental reproduction.

There was a positive result in each of the four areas examined. In the field of rhythm, the development showed an improvement of 12.71%, in the field of hearing-writing, 15.62%, and in terms of hearing-reproduction, 45.83%. The fourth area showed the highest significant difference, with the largest change showing improvement in instrumental reproduction, at 56.75% (Graph 1).




Graph 1: The development of the groups' musical abilities based on the examination of each musical dimension

Based on the overall results of our ability-examination, it can be stated that the systematic and consistent training of musical skills leads to an intensive progression in the development of both specific and general abilities of students. Based on the qualitative analysis of quantitative indicators, we summarize all this on the basis of the following specific aspects:

Ability development in terms of special / musical abilities:

- The parallel application of singing and instrument playing helps the process of teaching creative vocal-musical plays and instrumental plays based on acoustic elements;
- Observing and listening to the co-sounds of singing and the applied musical instruments help the auditory imagination;
- Using folk songs and nursery rhymes, the combined sounding of melody and lyrics develop the auditory imagination;
- The frequent use of pauses helps wait patiently and be aware of them;
- Enhancing auditory and visual memory and their interaction;
- Getting to know the joy and experience of common music making, listening to each other and strengthening cooperation by singing and playing the instruments together;

Ability development in terms of general abilities:

- Rhythm exercises develop the ability to concentrate;
- Systematic practice of singing and vocal-instrumental reproductions strengthens, deepens attention and concentration;
- Voluntary musical activities develop imagination and creativity;
- Playful musical activities promote and increase interest in music;
- By observing and following the instructions accurately, the duration of attention increases;
- Getting to know one's own and other cultures and traditions with the help of folk songs;
- Learning the rules of collective work by 'singing and playing together';
- Musical games and creative musical exercises reduce tension;
- The pursuit of individual expression and self-expression is increased;
- Through the achieved feeling of success, a positive self-awareness is formed.

**5.4 Summary**

Based on the results described above, it can be concluded that music, music education and creative vocal-music and instrument-playing education have a positive effect and a significant transfer effect on skill development, musical and other abilities. Above all, it positively influences inner hearing and intonation skills, the quality of instrumental and vocal-instrumental performances. Furthermore, considering some of the psychic factors, this education has a beneficial impact on observation skills; it improves concentration, reduces anxiety and last but not least increases self-confidence. The good results and the intensive development of skills and abilities can be explained by the persistent and focused attention gained during music training. Music education and instrument-playing education make students active with their diverse auditory, visual and motor stimuli. Vocal-instrumental musical activities and common music-making have a rich emotional content, evoke a series of experiences, so they also contain elements of experiential pedagogy (Csehi-Kanczné 2019). '*The artistic experience is a complex content of consciousness and spiritual state, into which emotional, intellectual and wilful elements, reality and imagination, precisely expressed thoughts, feelings, desires and aspirations – that have not reached the level of consciousness – are intertwined. It is in this way that the experience captures the person so deeply and in many ways. There are huge pedagogical opportunities in this*' (Dobray 1983: 11).

Due to their creative and experiential value, the artistic experiences can have a lifelong effect on the young adults' lives. '*Even if there is only one moment, the magnitude of life can be measured on the magnitude of that moment* (…)' (Kanczné 2007: 123). As a result, the various 'stimulus effects' together help develop abilities, that is the physiological basis of the transfer effect. The transfer effect is primarily ensured by the variety of creative activities and tools used in learning and practice, and the systematic and experiential training of musical abilities and skills. Thus, special abilities and skills not only have an impact on musical competencies, but have also been demonstrated during complex personality development.

**6 Conclusion**

Creative musical activities, vocal-instrumental tasks and creative music education contribute significantly to the development of musical abilities, but also have a positive effect on other abilities and on the development of higher psychic functions. Its influence transcends the boundaries of the content and material of music and determines the development of the whole personality. It is also an effective tool for spiritual and character education. Intellectual development can be interpreted by the reception of new information, the understanding of connections and by the formation of logical thinking. Character development is the development of the personality itself. After all, the musical experience can not only convey emotions, but it also shapes the individual's moral judgment, worldview and aesthetic taste.

'*With music, we don't only learn music. Singing liberates, encourages, heals from inhibitions and shyness. It concentrates, improves physical and mental disposition, makes you feel like working. It makes you more suitable and accustomed to attention and discipline. It develops a sense of community. It moves the whole person*' (Kodály 1974: 304).

**Literature:**

1. BAKOS, A.: *Zenepedagógia és zeneterápia*. In: Zborník medzinárodnej vedeckej konferencie Univerzity J. Selyeho -

2014: "Nové výzvy vo vede a vo vzdelávaní". Sekcie pedagogických a humanitných vied. Komárno: Univerzita J. Selyeho, 2014. P. 13-22. ISBN 978-80-8122-073-9
2. BARKÓCZI, I. – PLÉH, Cs.: *Kodály zenei nevelés módszerének pszichológiai utánvizsgálata.* Kecskemét: Kodály Zenepedagógiai Intézet, 1977. 154 p. ISBN 963 02 0521 1
3. CSEHI, A.: *A zenei képességek és a kisgyermekkori személyiségfejlődés kölcsönhatása*. In: VIII. Trefor Ágoston SZFP Konferencia. Budapest, 2018. P. 89-101.
4. CSEHI, A. – KANCZNÉ NAGY, K.: *Az élménypedagógia helye és szerepe a felsőoktatásban.* In: Neveléstudományi kutatások a Kárpát-medencei oktatási térben. A IV. Kárpát-medencei Oktatási Konferencia tanulmánykötete. Pedagogical Research in the Carpathian Basin Educational Space. 4th Carpathian Basin Educational Conference. Oradea. 2019. P. 362-374. ISBN 978-80-8122-310-5
5. DOBRAY, I.: *A zenehallgatás feladatrendszere és módszere*. Budapest: Tankönyvkiadó, 1983. 112 p.
6. DOMBI KEMÉNY, E.: *A zenei képességvizsgálatok kézikönyve*. Szeged: Vántus István Társaság, 1999. 56 p.
7. ERŐS, I.: *Zenei alapképesség.* Budapest: Akadémiai Kiadó, 1993. 153 p. ISBN 963-056-507-2
8. FALUS, A.: *Zene és egészség. Zene-Egészség-nevelés-test-lélek.* Budapest: Kossuth Kiadó, 2016. 303 p. ISBN 9 789630 986304
9. FRANĚK, M.: *Hudební psychologie*. Praha: Karolinum, 2007. 238 p. ISBN 802-460-965-2
10. GEMBRIS, H. (2002): The development if musical ability. In: Colwell, R., Richardson, C.: *The new handbook of research on music teaching and learning.* New York, Oxford University Press, 2002. P. 487–509
11. GORDON, E. E. (1971). The psychology of music teaching. Englewood Cliffs, NJ: Prentice-Hall
12. HORVÁTHOVÁ, K.: *Redundancy in the verbal communication of teachers in primary education.* DOI 10.1515/jolace-2017-0030 Journal of Language and Cultural Education. 2017. Vol. 5, no. 3, p. 93-107. ISSN 1339-4584. WoS.
13. JANURIK, M. – JÓZSA, K.: *A zenei képességek fejlődése 4 és 8 éves kor között.* MAGYAR PEDAGÓGIA, 2013. 113. évf. 2. sz., p. 75–99.
14. KANCZNÉ NAGY, K.: *A logoterápia és egzisztenciaanalízis alkalmazásának lehetőségei a nevelésben.* Gyermek-Nevelés-Pedagógusképzés. Budapest: Trezor Kiadó, 2007. 123 p. ISSN 1589-7370
15. KODÁLY, Z.: *Visszatekintés*. Budapest: Zeneműkiadó, 1974. 346 p. ISBN 963 330 034 7
16. KOKAS, K.: *Képességfejlesztés zenei neveléssel.* Budapest: Akadémiai Kiadó, 1972. 205 p. ISBN 9630562855
17. MARTON, Á., JANURIK, M.: *Zenei készségfejlesztés kisgyermekkorban.* In: PEDAGÓGIAI FOLYÓIRATOK. Új köznevelés. 2016, 72. / 4. www.folyoiratok.ofi.hu/uj-koznevеles/zenei-keszsegfejlesztes-kisgyermekkorban
18. MÁTEJOVÁ, Z.: *Základy teórie a praxe muzikoterapie.* Bratislava: Univerzita Komenského, 1993. 138 p. ISBN 80-223-0401-8
19. MICHEL, P.: *Zenei képesség, zenei készség*. Budapest: Zeneműkiadó, 1964. 141 p.
20. ORSOVICS, Y. – STRÉDL, T. – SZABÓOVÁ, E. – VASS, V.: *A személyiségfejlesztés új kihívásai a nemzetiségi óvodákban és iskolákban.* Komárno: Univerzity J. Selyeho, 2018. 161 p. ISBN 978-80-8122-282-5
21. PAVLOVSKÁ, O.: *Pôsobenie hudby na handicapované deti*. Bratislava: SPN, 1980. 68 p.
22. POLEDŇÁK, I.: *Stručný slovník hudební psychologie.* Praha: Supraphon, 1984. 459 p. ISBN 02-008-84
23. SCHWARZER, G.: Analytic and holistic modes in the development of melody perception. *Psychology of Music*, 1997, 25. P. 35–36.
24. SZŐNYI, E.: *Zenei nevelésirányzatok a 20. században.* Budapest: Tankönyvkiadó, 1988. 159 p. ISBN 963-180-510-7
25. TEPLOV, B. M.: *Psychologie hudebních schoponstí.* Praha: SHV, 1965. 227 p.
26. TICHÁ, L.: *Slyšet a myslet u klavíru.* Praha: Akademie múzických umení, 2009. 176 p. ISBN 978-807-331-151-3
27. TÓTH, P.: *Egyéni különbségek szerepe a tanulásban. A tanulási stílus.* Kutatási Füzetek I. Óbudai Egyetem. Trefort Ágoston Mérnökpedagógiai Központ, Budapest: 2011. ISBN 978-963-88946-5-6
28. TÓTH-BAKOS, A.: *Music education and music therapy.* INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia: IATED, 2016. ISBN 978-84-608-5617-7. ISSN 2340-1079, p. 1643-1652. WoS.
29. TÓTH-BAKOS, A.: *Mozartov efekt - môže hudba zlepšiť inteligenciu a kognitívne schopnosti?* In: Zborník medzinárodnej vedeckej konferencie Univerzity J. Selyeho: "Inovácia a kreativita vo vzdelávaní a vede" - Sekcie pedagogických vied. Komárno: Univerzita J. Selyeho, 2015. CD-ROM. P. 163-172.
30. TÓTH-BAKOS, A. – CSEHIOVÁ, A.: *Music and Brain - Music Training Transfer*. INTED 2016 Proceedings: 10th International Technology, Education and Development Conference. Valencia: IATED, 2016. ISBN 978-84-608-5617-7. ISSN 2340-1079, p. 1726-1732. WoS.
31. TURMEZEYNÉ HELLER, E. – MÁTH, J. – BALOGH, L.: *A zenei képességek fejlődésének vizsgálata.* MAGYAR PEDAGÓGIA, 2005. 105/2. P. 207–236.

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