

# **Doctoral Thesis**

**Katalin Masopust:**

## **Care for musical work capacity as applied in different areas of pedagogy**

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The standards in the field of musical performance are grown incredibly. Nowadays they expect such productions from music school students which were needed for the diploma a few years ago. As a result, the number of injuries has increased.

Artists, teachers, students exploit themselves ignoring physiological capabilities; they make physical training very rarely. While sportsmen have whole teams to prepare them for races, the musicians have no help before the big performances. We start studying the instruments at the beginning of musical education, but hardly anything is mentioned about the "first instrument of music", the human body.

The lack of physical training has a double disadvantage. The poor physical condition blocks musical development, and the weak unprepared physique is straining, exhausting the musician under the huge workload.

Doctors need special knowledge to help musicians. In Germany, Switzerland and Spain there are specialized institutions, organizations and publications on this topic. However, the number of publications concerning musician health has grown in the last 20 years in Hungary, nothing much is published about this subject.

At the international conferences on the health of musicians, the role of teachers in prevention is emphasized. These kinds of advisory training hardly exist so that the concern for health in modern musical education continues to be kept in the background.

In Hungary, with developing of the Kovacs method (taking care of musical work capability) a special pedagogical system was worked out, which serves to fulfill the special needs of musicians and can be integrated into music pedagogy and into the everyday musical practice as well. Elements of the method: scientific training system, lifestyle program, mode of approach. The purpose is for musical students and adults to be provided with help in professional and other assignments from the beginning of studies though their whole life.

This system approaches the development from the side of physical ability. The starting point and the unifying cornerstone is the all living phenomenon, therefore the music as well,

is the function of living action of organs, tissues, cells. This treatment positively influences the shaping of the whole personality through beneficial stimulating of the body.

The first musical instrument is the person himself, to know himself and take care of himself is the first task in the interest that a musician can successfully complete his work. This is of both personal and social importance, since musical education is very expensive and time consuming. Broken careers caused by physical and mental breakdowns result losses in considerable cultural and economic.

The purpose of my research is to introduce – with searching of national and international literature – the historical background of workability care and contemporary methods, and to outline the care of musical work ability (Kovacs method) from aspects of physiology, anatomy, and to present the development, the main topics, principles, and methods of this method. The purpose of the empirical research is to show objectively the appropriateness of this system for the solving of hypothetical problems, as well as to show the direction for further research with respect to use of research methods.

During the preparation of my doctoral dissertation, I felt it necessary for the sake of better understanding the give a detailed analysis of physiological and anatomical background of the Kovács method.

The human body forms a unified entity, every part works in separately with all the others. The fundamentals of life depend on the satisfactory working of the cells. The work ability is adequate if the cell functions of the body are normal and properly coordinated. The normal cell function depends on the metabolism. During this process, the cells must replace the used building materials, and the used materials of the energy-producing process, as well as take away the waste products formed during this process, because they poison the body and bother its functioning. With musicians, these functions are not satisfactory because of weak circulation and superficial breathing, this phenomenon is hiding. The physiology of cell function calls attention to the fact that fluid and food must be supplied continuously, and adequate breathing and circulation must be secured.

The right posture is an important condition of all body functions. While playing music, some posture will be developed (hanging head, asymmetrical backbone, hunchback) that are unfavorable to the body. Without counterbalancing, these postures become permanent causing many different problems. An essential element of Kovács method is the improvement of posture

which has a great the importance in the warm up before music lessons and exercises, as well as during movement lessons. Relaxing is also an important point, because posture of a fresh, relaxed musician can be developed more easily than of a tired, and stiff person.

A very high number of musicians are affected by musculoskeletal complaints. These complaints stem from the special movements of playing music and from the untrained body. Playing music uses some groups of muscles to the fullest, while most of the body suffers from lack of movement. Primarily the back, neck, shoulder, arm and hand muscles are strained. Just holding the instrument is a hard work for the trunk and arms. Repetitive movements, which must be performed under pressure, are a source of danger. Further risk is long lasting continuous practice. Work periods without rest can lead to muscle stiffness, cramps, and nerve troubles. Teachers and specially qualified health workers should have the responsibility to warn students to this consequence and to teach them how to make relaxation exercises. Care of working ability in music, principle of intermittent work, and healthy living and nutrition provide the cells and tissues continuous supply of nutrients and oxygen. This explains the fact that occupational diseases can be improved by following principles of the method.

Many times the harm of a musical occupation can be found in weak breathing and the subsequent insufficient oxygen. The first condition of good oxygen supply is well a ventilated place, which is often not ensured. In order to use the complete breathing capacity of the lungs, a correct body posture, and the free movement of the chest muscles are needed, which are inhibited by most of the instrument playing. For the musicians, because of the sitting, there is not much chance for the strengthening of these muscles. A further cause of oxygen deficiency in the breathing system, which always works to provide only enough for the present moment. Small movements of music playing, however, do not stimulate sufficient stimuli for the strong breathing. This way the oxygen supply is continuously insufficient which leads long-term to worsening performance and perhaps to health troubles, as well as, due to lack of training, the slowly working organs will not harden. The other reason for oxygen undersupply is the attentive breathing blocking. Another contributing factor towards the deficit of breathing is a unique feature of the human body, that it can bear the lack of oxygen tenaciously. In the breathing centre of the brain, there are no sensors indicating oxygen deficiency, the receptor only feels the CO<sub>2</sub> increase. So the stimulating of breathing happens because of the CO<sub>2</sub> increase instead of the oxygen deficiency. We only have cells

sensing oxygen deficiency in the aorta and in the artery in the neck, but even these locations give signals only when there is big drop in oxygen supply, to speed up breathing. This peculiar anatomical-physiological characteristic not only makes it possible for low oxygen levels to occur, but also to become permanent, with all its consequential disadvantages.

In the pedagogy of the Kovacs system, the taking care of breathing has an outstanding position, during which they pay special attention to the muscles helping us breathe and to the right breathing techniques. Dr. Zsuzsa Pásztor has proven in her experiments that with the right training, the parameters of breathing improve and the measurement of circulation (pulse readings) improves. (Dr. Zsuzsa Pásztor [2004]: The examination of work capability among wind instrument players. Medical, pedagogical research report from the National Scientific Research Fund - financed from 1993 to 1996 - Studio of Kovacs method, Budapest).

One of the main determinants of work capacity is the state of circulation. For musicians several factors may influence the circulation. Small movements do not stimulate the circulation system, that why it works on a minimum level. The circulation is also hindered by the static posture of muscles blocking free flow of blood.

The body blood supply is automatically regulated. When the heart works slowly the small blood vessels in the skin and muscles shrink, those areas get proportionately small amount of blood, but the important organs, first of all the brain, get enough blood supply. This situation is unfavourable for playing music, since the peripheral organs are strained. Musicians don't work their muscles hard, which would keep fit their cardiovascular system. An essential element of the Kovács method is the ensuring of vividness of blood circulation that can be made by warm-up before playing the instrument, or by relaxation with movement while playing or practicing.

As for the nervous system, occupational hazards stem from the contradiction that while music playing strains the nerves, the oxygen and nourishment are restricted. Plentiful replacement of the necessary oxygen and nutritious elements are needed in the nerve cells for the formation of the nerve stimulus, transmission of the stimulus, regeneration, protection, provision of the nourishing function and all the processes for the functioning of life. Without these, the nervous system will suffer damage. The internal automatism of the body protests against damage by restrictions, which appear in functional disturbances (reduced activity, memory troubles, lack of attention, etc.). Malfunctions of the nervous system could lead to disturbed self-esteem, depression.

In these cases often will be advised to stop playing music, which may be catastrophic from the individual's point of view. Instead of deciding career suitability, it is possible to develop the work capability, by means of the Kovács method.

Playing music is one of the most complex human activities. To make just one sound, lots of central organs and peripheral nerves need to be cooperated.

The main conductor of voluntary movements is the pyramid lane starting from the brain.

The extra pyramidal lane is the ancient moving system which is responsible for the posture of the body, the muscle tone and some other things. The extra pyramidal lane beginning point can be found in the gray seed of the brain trunk, as well as in the substance network. The little brain participates in the balancing and refining coordination of movements. The brain trunk along with the little brain and the vestibularis system plays a major role in the development of muscle tone, posture and walking reflexes. Besides stimulating operation of the cerebral cortex, some blocking fields became known; these are responsible, for example, for preventing the muscle contraction.

One of the important elements of musculoskeletal system is the airstrip, which sends information moving from the periphery toward the centre. This system sends information to the cerebral cortex about the stress state of muscles, about the position of knuckle joints, and about the pressure of muscle bands.

The huge representations area of musculoskeletal system explains the observation that information recording linked to movement is more efficient than purely intellectual imprinting.

The preliminary instrumental movement pedagogy of the Kovács method is based on this experience. During the exercise of the movements, conductivity of nerve fibers increases, this shortens the reaction time, and leads to acceleration of reflexes. Another important momentum is that the well-practiced movements become automatic and reach the subconscious spheres, so they can be focused on the upper regions of the musical process management.

An effective playing the musical instrument is impossible without a high degree of concentration. The concentration of many complex brain structures based on collaboration, with great effort, during which the mental energy to tasks or activity voluntarily turn, the expense of other activities. The attention is created by a specialized pattern of raising/

blocking the level of arousal. For optimal performance is realized by mid-level of level of arousal.

Favorable wakefulness of the nervous system and the entire body can be regulated by well regulated movement. Training for the musical ability is suitable for the participants to leave the training in an alert, but calm state, so their concentration performance can be improved. This is confirmed by the result of d2 the Brickenkamp attention test, which was filled by participants before and after the movement lesson. For the second time their performance was significantly better.

The movement activity has an important role in the learning processes. Learning of the movement means not only the performing of power of motor action, but considerably more. The perfect motor coordination is significantly influenced by the memory, by the comparison with long-term memory and by the decision-making. Development of new movement skills are based on existing movement patterns. There are five analyzers in the movement information processing playing an important role: visual, auditory, tactile, balance, movement.

During the 20th century representatives of the operational psychology formulated the idea that learning processes are based on the actions. Based on Piaget's theory, according to the concept of Balogh Katalin Porkolábné an educational development program can be created for children with learning disabilities. She believes that the cause of deficient performance is originated from underdevelopment of the sensor apparatus, from the level imbalance of different perceptual features, as well as from the lack of internal integration of sensor motor systems. Therefore, for the prevention of learning disorders as a first step, motor and perceptual skills should be developed.

The Basic Therapy developed by Éva Marton-Dévényi combines a number of movement therapies of the 20th century. According to her theory the maturation of the human nervous system occurs during the maturation of movement patterns. If the child's nervous system goes along the normal developmental line (crawling - climbing- walking - selection of dominance), and this is accompanied by sensorial maturation, only then will appear reading and writing skills, as the crown of development of the nervous system.

A. J. Ayres's theory emphasizes the importance of the sensory integration role of the brain. This means that the brain has to filter and integrate the incoming sensory stimuli. Integration can be created at different levels of the brain (spinal cord, brain stem, sub cortical seeds, cortex). The brain works as a whole, the integration of lower areas affect also the

operation of upstream regions. Movement plays a vital role in the development of sensory integration, because motoric centers are the largest centers of convergent sensory information. During the sensory integration therapy the senses of movement, the movement coordination, and the equilibrium system are widely developed.

Beside the therapies listed above there are many developing therapies using the movement for prevention and treatment of learning disorders?

The extremely rich repertoire of movement in the Kovács method had originally a special aim, to facilitate the acquirement of the instrument playing. The rich movement vocabulary of the method can be used for developing and kindergarten pedagogy purposes. In the two educational trends there are many common principles, such as the principle of indirect, complex, and the transfer effect.

The application capabilities are certified by surveys with teachers, the success of kindergarten application is certified by an experiment described in Pintérné Tasnádi Ágnes's book. (Pintérné Tasnádi Ágnes [2006]: Pedagogy of movement in the kindergarten. Published by : Trefort Kiadó, Budapest.)

Musicians are exposed to outstanding psychological stress. Practice, musical lessons, rehearsals, concentration and concert stress pose a huge intellectual challenge. In addition, there are a number of stress factors in the life of musicians. Beside objective factors, subjective character of musicians also tends to be responding to stressful factors sensitively. In addition to psychological symptoms stress effect is often manifested in physical pains.

Musicians have to face considerable stress effects already during their studies. Teachers have an important role on the one hand not to increase negative effect in students, on the other hand to teach them to fight against stress effectively.

Extremely important role in the movement of the stressful factors caused by the voltage reduction. Physically fit people are much less likely to get sick during stressful events. In addition to the normalization of the healthy behaviors bodily movement through the activation of certain hormones, mood significant effect on the well-being.

In the background of occupational hazards is very often a disturbance of hormone balance. The cause of the disorder remains hidden in most cases, but the music teacher or musician meets only with the unpleasant symptoms.

A healthy body proportions, balanced behavior, willingness, work capacity, harmonious movements depend on the normal functioning of the hormonal and nervous system. With the orientation of the needs of the outside world and internal state these two systems together control the automatism of the body. The homeostasis is the requirement of the internal stability. It is essential for the body in order to have conditions necessary for the operation. Good nutrition, fluid replacement, adequate sleep, well-planned movements, the effects of sunlight and fresh air can provide the appropriate stimuli for the harmonious functioning of the body. In the life of musicians, however, these conditions are rarely provided.

As a result of long-term stressful situation excitatory mechanisms could become permanent (steady simpatikotonia), when the body functions in a resting state are more active than normal (e.g., higher pulse).

In case of lack of oxygen and strong stress causes a number of reactions in the body, of which the hyperthyroidism is very typical among the musicians. The thyroid hormones regulate, inter alia, cell metabolism and the cells oxygen flow, as well as the structure of energy source compounds. As the effect of mild hyperthyroidism, metabolism of cells and consequently the entire the body will lose the balance. Such cases are characterized by rapid heartbeat, fatigue, excessive mobility, muscle stiffness, inattention and irritability. In many cases the person is advised to leave the field of music, but instead the ability to work can be established with the development of working ability, where the lifestyle and exercise program of Kovács method can give assistance.

Excessive stage fright also indicates the disruption of homeostasis of the body. Pulse of musicians with stage fright is also in a calm state higher than normal, and under a relatively small load it will increase quickly. These musicians can show restless behavior, their movements are getting more intense and they speak fast. Their palms are clammy and cold. Their mood is anxious and nervous, their tempers are fluctuating, their performance is changeable and their self-confidence is unstable. All these indications show the high level of arousal the vegetative nervous system. They seem to have the same increased readiness, which normally occurs on a concert performance. The people with stage fright, however, this excessive readiness is constantly present ("simpatikotonia"). On stage the normal readiness reactions extremely increase the high levels of arousal and creating an excessive stage fright that is threatening the performance. These symptoms may be eliminated by increasing workout load and with new lifestyle.

Fatigue is the main issue of music pedagogy, because music students have an above-average workload. Music is considered publicly as an active relaxation, but this is only partially true. After the activity mostly spent in a seated position, due holding of instruments there is a high stress of waist and back, and the central nervous system is also extremely loaded. The situation is complicated by controversial nature of music as well. While the complex action of music would require increased oxygen and nutrient supply, this is not ensured due to the conditions of instrumental music (sitting, standing position, blood circulation, posture preventing respiration, inhibition of attention etc.)

The music has a special doping effect. For music susceptible people music creates enthusiasm and activity also in a tired state. With activating of the cortical layer music has a refreshing impact on people, but the learning activity is a very challenging workload.

The phenomenon of fatigue is a complex process, including individual talent, physical fitness, and psychological and work organization factors.

In order to combat against fatigue during music playing, the Kovács method provides a complex solution by means of a training method for musicians, as well as by a method applicable in the education.

Regular exercises strengthen the human organ, functioning of the heart and lungs will be stronger, blood flow to the muscles will be improved, adaptability of neural and hormonal control will increase. These changes ensure the load ability of the human body.

In the 18th century specialists began to deal with the physical problems relating to instrument playing and with the idea of movement preparing without the instrument. One of the main trends focuses on the strengthening of the hand. Their main characteristic is that it only deals with the hand, which - similarly to instrument use - can lead to occupational disease. The other trend tends to improve the general physical condition. These authors described some general physical education instructions, and life skills tips.

In connection to exploring the contemporary literature in this topic research institutes were worldwide established where these kinds of diseases of musicians are researched. From my experience planned prevention is sporadically researched (Norway, Trondheim, London, Texas, Barcelona).

Compared with the previous approaches the Kovács method has a very complex approach, focusing on three tasks:

1. Preparing human body to special functions (preparation of instrument holding and movements, development of movement coordination, development of endurance, promotion of suitability playing on stage)

2. Providing protection against occupational hazards. (It prevents the excessive strain of movement system, eliminates fatigue, corrects asymmetric holding of instruments, equalizes one-sided loads and protects and relaxes the auditory, protects the stability of the vegetative nervous system, helps the balanced functioning of the internal organs.)

3. In case of exertion and fatigue it helps to recover working capacity in cases within the health zone. (with specially planned training and practicing method, with the introduction of regenerative lifestyle)

The Kovács method is aimed at developing and maintaining of physical, mental, spiritual suitability to playing music, therefore it can not be replaced by other training methods.

Task of the movement training is on the one hand to keep the vital life functions in order : to improve breathing, to normalize circulation, to upgrade instrument holding , to strengthen and relax the muscles, to maintain the internal organs, to normalize operation of nervous and hormonal system. On the other hand tasks of the program are to prepare for special musical requirements: development of manual skill, improvement of coordination, development of concentration, improvement of stamina when practicing, development of security during playing on stage, improving of appearance and the development on stage.

The positive impact of movement system is ensured by strict compositional principles: Specified load curve, movement dosage and time proportioning of the lessons. Important methodological principle of the Kovács method is that performance will never be forced. Pleasing result of the effort is an optimal state required for playing music.

The Kovács method attaches importance to be in a good mood during trainings. Positive mood of emotional spheres of the central nervous system basically determines motivation and performance. During the trainings and exercises the participants have a relaxed experience and this is due to the moderate dosage, and amusing variability. There is no pressure to do well; everybody wants to achieve the best.

An essential element of musical performing is the implementation of precise movements. The instrument playing develops itself lots of abilities, but at the beginning of music learning it is needed to learn a variety of advanced capabilities.

Contrary to previous schools the instrumental movement pedagogy of Kovács method includes the entire body as a whole. Its aim is to ensure physical conditions of playing music, to create of instrumental actions concerning background of nervous control, hormonal, circulatory and muscle metabolism.

The preliminary subtasks of instrumental movement are as follows: Preparation of hearing, vision care, development of touch sensitivity , improvement of the movement detection, speed development, ability to develop a short relaxation , independence of the fingers, flexibility of wrist , the free movement of the arm , improving of feet, practicing of adaptable movements, developing of tim detection .

I hypothesized that care of musical work ability can help during learning /studying and playing of music:

- 1) individualized training program – with the normalization of functional balance of the human body – will improve the overall workload, thereby increasing the endurance of practicing,
- 2) moderates the fatigue generated during work, so it helps to prevent straining , and the resulting occupational diseases,
- 3) promotes to develop a good posture and instrument holding,
- 4) develops the movement coordination, thereby improves the technical conditions of the instrument playing
- 5) stabilizes the neurological state, which is reflected in the increase of security when playing on stage , and to decrease ( terminate ) excessive stage fright,
- 6) improves the concentration and memory,
- 7) in case of strain, deterioration it helps to restore the working capacity.

After a long consideration I found that questionnaire and the interview will be the appropriate method for the empirical research.

During planning of the research the difficulty was to identify hat what are the factors in the care of musical work ability that can be measured and how can I prove the hypotheses.

It has been suggested to apply sport tests. These are capable to measure the speed, strength, and endurance. For playing on musical instruments a special strength is required. Looseness is an important factor. This is a kind of flexible standby; playing technique can be improved with this method. These devices can not be measured objectively.

Medical tests could have been applied, but for me there is no way to carry out. There are some medical measurements in my thesis; these are from the research of Dr.Zsuzsa Pásztor.

The uniqueness of the topic is that disabling deterioration in music is not necessarily a medical problem. Stiffness of the fingers, hand tremors, excessive stage fright is not diseases. For people who are not musicians these signals do not cause any problems, a medical examination does not diagnose any diseases, but music playing will be more difficult. Objectively measured termination of pain is also not measurable.

During the research an additional problem was that the method will bring a result only, if someone does the workout program regularly, and follows the advice for lifestyle settlement.

I tried to use qualitative and quantitative methods in the empirical research, but my research can be described basically as a qualitative research. The reason for that is that the care of music work ability is still an unexplored research, and I worked with a small number of elements, because the Kovács method is applied by a relatively small number of people.

In terms of the questionnaires I applied a quantitative method, but there were some open questions that gave me the opportunity to make also a qualitative analysis.

The semi-structured thematic interviews gave the opportunity to have more specific issues. Some aspects have been arisen in connection with the method, which were not expected earlier.

During my research, I sampled randomly from the following layers:

- ELTE University students of postgraduate studies. (38 people)
- Students of the Franz Liszt Academy of Music, who participated in optional theoretical and practical occupation. (42 people)
- Teachers and artists (41 people) participating on workouts regularly
- Teachers who

Participated in the education of ELTE PPK by finishing state exam. (3 people)

The questionnaire was filled by 100 persons, from the groups listed above, totally 24 interviews were made.

In the questionnaire I measured the improvements perceived as a result of the Kovács method by means of intensity questions. The scale included the following values: 1. no 2 marginally 3. middle-rate 4. significantly 5. largely

The average of values of respondents showed a value of about 3, so the assumptions of hypotheses have been confirmed.

Manifestations of the interviewees also evidenced that the Kovács method is very effective. Beside the issues given in the hypothesis, the reports have shown a number of positive impacts about the care of musical workability.

For prevention of occupational diseases occurring to students and adults involved in music the introduction of institutional care of working ability could be a solution. The causal of musical occupational damages is often very complex and requires a complex treatment. Improvements could be made faster and more effective in some difficult cases where a team of different experts would care the persons affected. . For example, beside physical care - movement training, massage, baths, breathe training etc. - performed by the teacher of care of work ability, a psychologist may be needed to help as well. Painful mental state, feeling of anxiety, feeling of uncertainty of the future or vulnerability of existence seriously hinders the rehabilitation process. In addition, involvement of doctor is also necessary in some cases when the occupational condition worsening is outside of the health range. Perfect competence of the doctor is very important also in the field of music. Concerning these tasks, those doctors, who actively make music, or have a past as a musician, are the most successful.

There is a university education of Kovács method in the Music Academy Franz Liszt as an optional subject, and also in the Pedagogical University Eötvös Lóránd within special professional examination. However, this course is required to be expanded in two fields. On the one hand it would be important for any musician, music student to understand the basics of care of musical workability , in order to get to know the functioning of the body of musicians, to learn about the occupational hazards, and to work healthier, and more efficiently. The students of teacher training college need deeper methodological and didactic skills in order to teach health conscious in the future and to help their pupils in protection against occupational hazards. On the other hand it is necessary to train teachers in sufficient numbers, who will care ability to work. Their task would be in the music teaching institutions, as well as in the musical workplaces to lead work ability care management programs for pupils/students and adults, as well providing information and advice on difficult cases.

Currently teaching and providing of the Kovács method – due to lack of sufficient human and financial capacity – is based on purely practical experience. In the case of people involved in programs it would be important to carry out medical examinations in the future that would support current experiences. It would be necessary to record parameters of vital life functions, such as circulation and respiration, to perform anthropometric measurements,

and to monitor changes in physical condition. Furthermore, it would be needed to control the effect of workability trainings, as well as of changes in lifestyle and working order to physical and neurological and intellectual functions, attention, memory, with the involvement of control groups. Finally, it would be useful to measure the changes concerning the quality of musical performance, the pursuit of practicing endurance and safety of playing on stage.

As previous experience has shown that the Kovács method is not related specifically to musical work. In the 1960s Dr. Géza Kovács applied the method of workability with the participation of musicians, pupils, students participating in general education, and of industrial workers as well. Today, in the practice of developing teachers continuously confirmed the usefulness of Kovács method in two areas. One area is freshening movement training for the resolving of the fatigue during the school work. Short exercise programs, which will be used by the teacher in the music school to relieve fatigue, can be easily applied to make school classes and day care more efficient. Another area is the development of partial skills that defined learning. Exercises that prepare, improve, strengthen the playing of musical instruments, and develop speed, spatial perception, sense of rhythm, as well as improve holding of instrument and breathing promote the development of fine motor skills, body scheme, seriality and other partial capabilities. Beside school and kindergarten application it is assumed that intermittent work developed in the Kovacs method can be used successfully in secondary school, university, in industrial areas, and in health care.

### **List of publications**

- New ways of music teaching. (Váci Polgár / *Civilian of Vác* / 2002. No.6 Page 7. )
- International Health Conference for Musicians in Feldkirchen.  
(Parlando, 2005. No. 5. Page. 18-24.)
- The role of communicating values in art education. (Parlando Plus, 2007. No 2.)
- Health World Conference for Musicians in Barcelona. I.- II.  
(Parlando. 2007. No. 4. Page 30-35. ; No 5. Page 34-38.)
- Causes of occupational diseases in the field of music and prevention methods.  
(Parlando, 2010. No. 5. Page 24-26.)
- The physical condition of fatigue and its aspects in music teaching. (Parlando Plus, 2010. No. 5.)