# The Development of Students' mental Functions by Studying the Violin

ELENA ADRIANA LEPADATESCU Dept. of String Instruments Music High School "Tudor Ciortea" Brasov 500084 Brasov, Col. Buzoianu Street no.1 danalepadatescu@yahoo.com

OCTAVIAN RATIU Head of the Stringed Instruments Department National University of Music Bucharest Ştirbei-Vodă Street no.33, sect.1 <u>octavian.ratiu@yahoo.com</u>

> JUDITH IVASCU C.S.E.I. Brasov 13 Decembrie 125, Brasov judithivascu@yahoo.com ROMANIA

*Abstract*: - The purpose of the following presentation is to prove the fact that, if the students are given from an early age, an instrumental education, their psychic processes (such as attention, memory) are improved. Another benefit would be the improvement of their accomplishments at school.

*Key* – *Words:* - violin, mental function, psychic processes, memory.

#### **1** Introduction

As we have noticed that there are remarkable differences regarding perceptiveness, level of focus, memory and generally all intellectual activities between children studying in regular schools and those that learn to play a musical instrument (in the case of this research, the violin), we suggest that an increasing number of children should be subject to an intense musical education, which encourages their balanced development.

By supporting this hypothesis, we join the existing worldwide tendency according to which the study of music accomplishes even the personality of those having weak musical skills.

#### **2** Assumptions

1<sup>st</sup> Assumption

If the students are subject to an intense instrumental education, then their intellect (attention, memory, and thinking) is developed.  $2^{nd}$  Assumption

If the students are subject to an intense instrumental education, then their educational efficiency increases.

### **3** Establishing the area of research

We have included in this research two groups of children in the fifth grade, each group being made of 15 children as follows:

- Group A-experimental, children from the Arts College, Brasov
- Group B- witness, children from School no.8, Brasov

## 4 Sampling

We have applied the musical and psychological tests on the two groups, A and B, but also we have included in our sample only students having an I.Q. between 90 and 120, thus including children with medium and high levels of intelligence.

We did not use a division according to gender.

# 5 Choosing the techniques (research tools)

In order to track down the I.Q. of the two groups, we collaborated with the psychology department from the Children's' Hospital, Brasov, department that determined the I.Q. by applying the following battery of tests: Standard Progressive Matrices (J.C.Raven), Goodenough Test, Rhibaut.

In order to test the musical skills of both groups, we have used tasks to determine the pitch, musical memory tasks and rhythm tasks.

# 6 The research

At the beginning of 2008-2009 school year we have applied a battery of tests that aimed to identify the musical skills of the students belonging to the previous mentioned groups.

a. Tests to determine the pitch of the sounds

In this battery of tests one does not use the marking scheme based on grades, but a system using balls, the placement of the balls being made according to the pitch of the sounds.

- b. Tests that focus on the musical rhythm by comparing identical or different rhythmical patterns
- c. Tests that focus on memorizing the pitch of the sounds by using short series of 3 or 4 sounds placed one after the other. During the second performance, one of the sounds is changed and the candidate should point to the modified sound.

The above mentioned tests had a progressive degree of difficulty and they had a marking scheme ranging from 1 to 5. According to the students' score, we used a scale to determine their musical skills as follows:

- Very good-10 points
- Good-7 points
- Medium-3 points
- Weak-1 point

Throughout the following school year, after a systematic study of the instrument, we have continued the battery of tests in order to track down the intelligence quotient of the students from *T. Ciortea Arts College, Brasov,* and in doing this we focused on testing the immediate memory (Rey test for memorizing numbers and words), which is necessary when testing one's musical skills.

The quantitative and qualitative analysis of the results of this research shows that the systematic study of the violin, started at a young age, develops both "the skills connected to imagining and capturing sounds (pitch, intensity, length, tone colour), the intelligence, the memory and musical thinking, the interest and will, the ability of affective rendition and delivery of the contents regarding ideas or emotions of musical pieces, as the metrical-tactile skills" (manual and instrumental skill).

The instrumental music performed by the instrumentalist acts upon the body according to the level of the nervous system to which it applies to.

There is a step from emotion to thinking and to movement, followed by a return to emotion. As a result of this mood, there can be an increasing intensity in the emotion, a sustained enthusiasm in the movement, a living, imaginative skill in the process of thinking and endlessly varied attitudes in the consciousness.

The children that learn to play the violin from a young age are visibly favoured in their intellectual development.

Throughout the study, the young instrumentalist practices his will by skipping games and channeling his attention towards the study of his instrument, his distributive attention by simultaneously engaging more analyzers and at the same time executing several different movements required by his musical score, his thinking by solving the mathematical ratio between different time values of musical notes and distances as by formally analyzing a studied piece; the imagination by searching for practical, mundane correlations for the message of that particular music; creativity by creating a personalized performance while still keeping it according to the style of that piece; memory, by memorizing and precisely performing a melodic -rhythmical sequence; affectivity, through the benefic effect that music has upon the spirit.

The rehearsal of these mental actions leads implicitly to the development of the intellect through practice.

Musical skills do not form a monolithic entity and there have been rumors that they do not all depend on the same brain hemisphere: the right one could have a great importance when it comes to global comprehension and it could play the main part in the emotional aspects that are so widely involved in music, while the left hemisphere, having an analytical role, could interfere when it comes to tasks that require didactically acquired notions.

Moreover, recent studies emphasized the hemispherical asymmetry as related to different basic musical parameters: rhythm, distance etc. For example, the rhythm is a function solely 'dealt with' by the left hemisphere (Gordon, 1978) while chords belong to the right one.

However, this 'hemispherical specialization' according to which there can be a righthemisphere-connected superiority as far as music is concerned, should be analyzed according to a variety of factors as well as the musical knowledge level.

### 7 Conclusion

The current experiment clearly shows an existing correlation between the memory of words and numbers and the one of music, as we can not talk about an anatomical location of mental activity but one of nervous activities that form their basis. In the same time, there is no special anatomical centre for a particular function, each analyser having a central part (the nucleus) where the complex analysis and synthesis forms occur, and a periphery where the previously mentioned forms may occur solely in their most elemental condition. The associative function, the uniting and placing in the circuit one occur on the entire brain cortex.

Taking everything into consideration, I can state that students who study the violin can obtain through activating their mental functions results which are superior to those of students attending regular schools.

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