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## The Musical Aptitudes and their Relationship with Intelligence Quotient in Students of the Region de Murcia

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### Abstract

The objective of this research is to analyse the relationship between the musical aptitudes of primary-school children of the Region de Murcia and their intelligence quotient. The participants are 85 students, 37 girls and 48 boys between the ages of 9 and 13. The instruments used to collect information, have been: the battery of differentials and general aptitudes (BADYG-E3), which gives information about the intelligence quotient and, the tests of musical aptitudes of Seashore. The results show high and significant correlations between some of the analysed variables.

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*Keywords:* Musical aptitude, intellectual aptitude, Music, primary school

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### 1. Introduction

Music is an inherent manifestation that takes place in all types of social and cultural organizations, and it is a language that favours the socialization of individuals and it involves to them in the use of an expressive system.

For these reason and as it affirms Mercé Vilar (2004, p.3) “*The musical education becomes, then, a necessity, both to ensure the transmission of a particular communication system and the development of individual aptitudes that impact on the education of the human being*”. Podemos afirmar que The musical education is a necessity to ensure the transmission of a specific communication system as the development of the individual aptitudes that impact on the integral education of the human being and aid to the development of intellectual capacities as effective thereof.

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For all that, School must take up the challenge to integrate the musical education into the curriculum, since music impact on the development of physical ability and mental capacity, enriching the human being. In relation to this Many composers, including Sessions (1971), have highlighted the relationship between music and bodily-kinesthetic intelligence.

The relationships between music and spatial intelligence are less clear, but not least less genuine. The position of the musical capacities in the right hemisphere indicates that certain musical skills might be intimately related to the space capabilities. The psychologist Lauren Harris (1978) quotes statements about the powerful space skills that composers require.

On the other hand, we need to emphasize the connection between musical interpretation and sentimental people life. Music can serve as a way of catching feelings, the knowledge on feelings, or the knowledge on the way of feelings, communicating them from the interpreter or the creator to the attentive listener.

We already reflected, from the initial discoveries of Pythagoras, on the relationships between music and mathematics. In determining the operation to the rhythms in the musical work, it is necessary that the individual possess some basic digital literacy.

Rauscher, Shaw, Levine, Wright, Dennis & Newcomb (1997) demonstrate the relationship between musical training and a higher intellectual quotient. Lázaro, Sánchez-Velasco, Gómez y Sánchez-López (2013) point out the relationship between Memory, rhythm, time and intellectual quotient.

All this confirms what Gardner (1994) exposed about the theory of multiple intelligences, based on the idea that people have at least eight intelligences or abilities that are relatively independent and act globally and together, being all of them equally important. These different intelligences represent diverse ways of learning and representing comprehension, knowledge, and they are revealed in dexterities and abilities clearly differentiated, where we can find as eighth intelligence the musical one, which is part of the main part of our enquiry.

The purpose of our research is to analyse the relationship between musical aptitudes (amplitude, rhythms, time and tonal memory) and intellectual quotient of students of third cycle of primary education.

## **2. Materials and methods**

### *2.1. Objectives*

Analyse the relationship between musical aptitudes (amplitude, rhythms, time and tonal memory) and intellectual quotient of students of third cycle of primary education.

To know the intellectual quotient depending on the students' age of the third cycle of primary education

### *2.2. Study population and sample*

The participants in our study are 85 students of the third cycle, 37 primary education girls and 48 boys (5<sup>o</sup> and 6<sup>o</sup> level) of three different education centres of Region de Murcia, more specifically in the municipality of Murcia. Their ages are between ten and twelve. 38 belong to first level of 3rd primary education cycle and 47 to 2nd level.

### *2.3. Instruments.*

We have used the battery of differential and general aptitudes, BADyG- E3 (Yuste, Martínez & Gálvez, 1998). The aim for this battery is to provide information about five intellectual factors, general intelligence, logical reasoning, numerical factor and space factor.

We use on an assessment the Seashore tests of musical aptitudes (Seashore, Lewis & Saetveit, 2008). The test provides separated measures in six aspects: tone, amplitude, rhythm, sense of time, timbre and tonal memory.

### *2.4. Study variables*

The variables which we shall analyse in our study are intellectual quotient (independent variable) amplitude, time, rhythm and tonal memory (dependent variables).

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