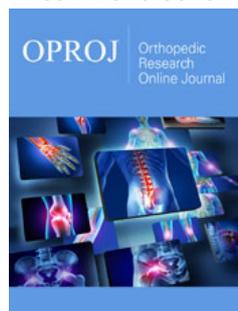


Inclusive Education from Musical Competence and its Application Neuropsychological for Social Cohesion in Secondary School

ISSN: 2576-8875



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Submission:  September 06, 2022

Published:  Septmeber 15, 2022

Volume 10 - Issue 1

How to cite this article: De Dios Tronch Amparo* and Bermell Corral M^oÁngeles. Inclusive Education from Musical Competence and its Application Neuropsychological for Social Cohesion in Secondary School. Ortho Res Online J. 10(1). OPROJ. 000728. 2022.

DOI: [10.31031/OPROJ.2022.10.000728](https://doi.org/10.31031/OPROJ.2022.10.000728)

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Abstract

Due to the change from childhood to adolescence, biochemical changes arise, which alter the teaching-learning process with levels of neglect in the Secondary stage. Music teachers concerned about the personal, academic and emotional development of students must propose inclusive and innovative resources in the school curriculum from the perspective of neuroscience.

The objective of this study is to analyze the importance of the musical experience in the Secondary stage and how students perceive it from the social cohesion model, where the construct of Musical Competence is confirmed, which is framed within the Secs Evalnecs project: design of a needs assessment model. In this macro-project, different constructs are investigated, among them, that of musical competence, integrated within the dimension of Sustainability throughout life. This construct has been designed and validated, and includes five dimensions with their different items, generating depth in the study

Keyword: Neuropsychology; Music; Innovation; Conflict and cohesion

Introduction

The school provides opportunities to rethink how to prevent and address the conflicts they contain in Secondary. At present, according to Carbonell [1], the school must be directed towards training towards social justice in order to compete in the world of work with daily life itself, where frequent changes such as the current one's favor risks such as school failure that result from indecision. by rapid adaptation and that end with social exclusion.

The application of the musical experience in the Secondary stage must be the competence of all teachers, because it has also been shown that it can be globalized with other areas of knowledge in an artistic way, from a story, a social history. Theater, accompanying, etc. This shared musical learning process mediates towards a social, educational integrative cohesion, which addresses the need to structure the areas of knowledge with specific guidelines for musical educational intervention, inside and outside the classroom. This experience is a process of innovation that facilitates the cooperation of the educational community. Being active in music supposes encounters with oneself and with others, a real, cultural and social knowledge where it will lead us to encourage cooperation and social cohesion.

The objective of this study is to analyze the importance of the musical experience in the Secondary stage from the social cohesion model, to confirm the importance of the Musical Competence construct, which is framed within the Secs Evalnecs project: design of an evaluation model of needs. In this macro-project, different constructs are investigated, among them, that of musical competence, integrated within the dimension of Sustainability throughout life. This construct has been designed and validated and includes five dimensions with their different items, generating depth in the study.

Background

As the composer Igor Stravinsky said, “music only represents itself”.

Music like any external stimulus is captured by the brain and before birth the newborn uses internal stimuli. Neurology and music lead us to conclusive studies to apply in education and health.

Located in the cranial cavity, the brain is a mass of nervous tissue that integrates the cognitive, motor, emotional and vital functions of the organism. The development process in education requires applicable premises from neuropsychology to comply with equitable education.

Following Olivers Sacks: “Nobody needs to have specific musical knowledge or have a musical gift to enjoy music and respond to it on all levels. Music is part of being human, and there is no human culture in which it has not been developed and admired”.

If music influences physiological processes to give a response in evolutionary development, we must consider the first steps of childhood, due to the functions of brain plasticity that remain when there is training. We also know that there are elements that hinder development such as depression, heart rate, pain, anxiety Altemüller et al. [2]. However, strictly listening to music and much more if it is what we prefer, helps to enhance structures involved in the activation of emotions, leading to the secretion of the pleasure neurotransmitter dopamine.

If listening to music is significantly related to social well-being, emotional regulation and social cohesion Papinczak et al. [3], the question would be, would it help to improve the tensions and nervousness of adolescence and make it possible to focus their emotional responses?? According to McFerran et al. [4], most adolescents use music to improve their mood.

The perception of music

We know that music goes further than the word, music has always accompanied man in the most important events of his life. His evocative power surpasses any other sensation [5]. These lived situations have been evaluated by means of electroencephalograms and magnetic resonances through the musical experience.

According to Sacks [6], the motor cortex shows changes, for example when performing piano exercises with all five fingers, even the activity of the basal ganglia and the cerebellum increases when it is practiced physically or mentally. This training modifies the structure and function in the stages of brain development, and can induce plastic changes in adult brains, helping to preserve areas of white and gray matter even in old age, a stage in which certain brain functions are lost Sluming et al. [7] and can extend to cortical and subcortical structures.

Does being musically active have advantages?

Secondary is necessary because it brings together the perception-action junction intervening in the sensory, motor and multimodal brain regions, and positively contributes to sound transmission areas located in the brainstem and in the thalamus. So, is it important to perceive music in Secondary?

Following Altemüller et al. [2] his contribution not only helps the development of education, but also supports music therapy and repairs damaged neural processes, or stimulates brain regions, that is, it is a great advance that would depend in principle of the Musical Competition of the teaching staff together with the rest of the teaching colleagues to be able to alleviate social exclusion.

Shared human emotions

“There are societies without writing, but none without music. Just as language can confuse, music is a more truthful way of conveying information or emotions. There is no part of the brain that is not affected by music.”

Stefan Koelsch

Indeed, in the brain resides the cerebellum with a specific motor function and the cerebral hemispheres that constitute different functions, the HI is analytical and the HD more holistic and emotional and according to Bermell [8], the action of music interrelates the entire central system.

Perlovsky [9] studied emotions, defining them as neural signals that connect brain regions responsible for instinct and conceptualization. Emotion and motivation are intimately linked: “It is more difficult to fake music than in language” This communication between instinctive needs and brain mechanisms of understanding and conceptual recognition, allows preference to be given to those situations that can better satisfy the vital necessities in the classrooms and the public, when listening to his most well-known melodies.

Music as social cohesion

Music is an instrument of social cohesion, the result of the need to communicate through musical instruments, survive, and evolve a lifestyle. There were musical patterns created by our ancestors from certain sounds to indicate the presence of danger, calls or indications. Its evolution to the present has given an indispensable place to music, and compositions between different cultures, styles at different times in the history of music continue to be demonstrated. Music, painting and lyrics have always been the standard of each era.

Gómez [10] carried out a study on the relationship between the emotions provoked by music and the physiological response and observed that, despite the contrast of their music, similar structures appear between different cultures that provoke the same emotions of happiness, sadness, fear and anger. Musicians and people without musical training can identify the emotions conveyed by the notes of a musical composition. Music awakens a different feeling in each person, where emotions emerge and facilitates social cohesion.

Method

The methodology that has been used for the study and validation of the musical competence construct from a social cohesion model has been through the creation of a context questionnaire. The previous phase for the creation of this context questionnaire was the creation of a team of expert judges, who were in charge of validating the different constructs investigated. Once these

constructs were validated, among them, that of musical competence contextualized within the dimension of Sustainability throughout life, different dimensions were created for each one, which in turn were made up of different items. Contrasted from the analysis of the contributions of significant authors in the field studied, in order to generate a deeper understanding of the subject and clarify the set of probabilistic conclusions that must be explored.

Results

To relate the perception of music with the results of the different

dimensions, we present the descriptive results of dimension 2 and 3 of the Musical Competence/Cultural and Artistic Competence construct. Dimension 2, music appreciation, is made up of 5 items and dimension 3, involvement, is made up of 7 items.

We show the Figure 1 where all the constructs studied in the Secs Evalnec project appear, so that you can see where the Musical Competence construct is contextualized, which is located within the dimension of the Social Cohesion model called Sustainability throughout life [11].

Dimensiones de definición de la CS	Constructos o dimensiones implicados
Bienestar social (para todos)	Clima social y de aprendizaje en el aula
	Gestión social del aula
	Gestión de conflictos en el aula
Sostenibilidad (a lo largo de la vida)	Competencias básicas (señaladas en el diseño curricular):
	✓ Competencia en comunicación lingüística.
	✓ Competencia matemática.
	✓ Competencia en el conocimiento y la interacción con el mundo físico.
	✓ Tratamiento de la información y competencia digital.
✓ Competencia social y ciudadana.	
✓ Competencia cultural y artística.	
✓ Competencia para aprender a aprender.	
✓ Autonomía e iniciativa personal.	
Competencia y desarrollo emocional	
Valor social de la educación	
Resiliencia	
Equidad (en el acceso a recursos y oportunidades)	Metodología didáctica (participativa, equipos, el estudiante como protagonista de su aprendizaje...)
	Metodología de evaluación (diversificada en métodos, situaciones, tareas e instrumentos)
Integración de la diversidad (personal y social)	Colegialidad docente
	Respeto, dignidad y reconocimiento
	Inclusividad: Atención a la diversidad física, cultural y/o social
Participación (social)	Colaboración Familia-Profesorado-Escuela
	Estilos educativos familiares
	Estilos educativos docentes
	Sentido de pertenencia discente
	Responsabilidad social: Autoimagen del rol social respecto a los entornos comunitarios (Escuela, Familia y Sociedad)

Figure 1

Source: Jornet [11].

Table 1: Dimension 2: Music appreciation.

Descriptive Statistics					
Questions	N	Minimum	Maximum	Media	Dev. typ.
2.1. Do you think learning music is important?	420	1	4	2,70	1,096
2.2. Is learning music easy for you?	422	1	4	2,81	1,038
23. Would you like there to be more hours of music in your school?	422	1	4	2,35	1,214

2.4. Do you like to invent music? (rhythms, melodies, song lyrics, etc.)	421	1	4	2,45	1,219
2.5. Do you like to create music with any object? (bottles, boxes, tables, floor...)	419	1	4	2,61	1,179

Next, we observe Table 1 to show the descriptive results of dimension 1, musical appreciation:

To continue, we show Table 2 with the descriptive results of dimension 3 and the respective ones that form it:

Table 2: Dimension 3: Implication.

Questions	N	Minimum	Maximum	Media	Dev. typ.
3.1. Do you want to be part of a band or music group when you grow up?	420	1	4	1,94	1,134
3.2. Do you feel good playing any musical instrument?	420	1	4	2,50	1,204
3.3. Do you do any extracurricular music activities?	416	1	4	1,86	1,253
3.4. If you do extracurricular activities, would you like there to be more?	417	1	4	2,29	1,189
3.5. If you don't do extracurricular activities, would you like to do them?	407	1	4	2,66	1,235
3.6. Do you participate in the musical activities of your center? (band, choir, orchestra...)	419	1	4	1,80	1,136
3.7. Does your center organize excursions to music concerts?	420	1	4	2,04	,990

Discussion and Conclusion

Different investigations confirm that students who have received more training in the subject of music obtain better overall academic results. The musical experience encourages stimuli that produce physiological changes, due to being able to express feelings and emotions that even go further than the word.

Regarding the practice of music education, we affirm that it provides various benefits both at a cognitive, motor and social level, which allows a better development and integration of students in the classroom, due to cooperative musical practices.

In addition, the music curriculum is considered essential as a social educational process and as an educational and social integrative tool that helps structure the areas of knowledge to address the specific guidelines for educational intervention, inside and outside the classroom.

In reference to Secondary Education students, we have observed that they do not value the subject of music so much because the educational system does not give it the weight it deserves due to the low teaching load.

Finally, it should be noted that teacher training requires a neuropsychological orientation of music to confirm the importance that this subject has as an agent that enhances social cohesion and equal quality.

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