MISOSTENIDO
REVISTA DE MUSICOTERAPIA unir

#9,4

MUSIC THERAPY AS AN EDUCATIONAL TOOL FOR THE IMPROVEMENT OF GROUP COHESION AND EMOTIONAL INTELLIGENCE

Musicoterapia como una herramienta para la mejora de la cohesión grupal y la inteligencia emocional

Carmen Lorigados Pérez
Musicoterapeuta. Maestra Ed. Infantil, Especialista en TCP y Gestalt
Diplomada en focusing y Terapia corporal
https://orcid.org/0009-0008-7486-9506

María García-Rodríguez
Doctora en Educación. Título Superior de Música. Musicoterapeuta.
Profesora Contratada Doctor de la Facultad de Humanidades de la Universidad Internacional de La Rioja
https://orcid.org/0000-0002-2365-3843

ACCESO ABIERTO

Citación recomendada
Lorigados-Pérez, C., y García-Rodríguez, M. (2025). Music therapy as an educational tool to improve group cohesion and emotional intelligence [Musicoterapia como una herramienta para la mejora de la cohesión grupal y la inteligencia emocional]. *Misostenido, 5*(9), 34-41.
https://doi.org/10.59028/misostenido.2025.05

Correspondence
carlorigados@yahoo.es

Received: 15 Ene 2025
Accepted: 20 Feb 2025
Published: 30 Mar 2025

Financing
This proposal does not have any institutional funding.

Competing interest
The authors of this proposal declare that they have no conflict of interest.

Authors contribution
The authors declare that they have developed this proposal and elaborated the paper.

Ethics approval
This study was carried out after approval by the TFE Ethics Committee of the Faculty of Arts and Social Sciences of the International University of La Rioja..

DOI
https://doi.org/10.59028/misostenido.2025.05

Editorial design
PhD. David J. Gamella. Universidad Internacional de La Rioja (Spain)

ABSTRACT

Background. Music therapy has been widely studied in different contexts. However, its specific application to improve group cohesion and the development of Emotional Intelligence in primary school children has been little explored. **Methodology.** This study evaluates the impact of weekly sessions of 45 minutes for eight weeks, using active and receptive music therapy techniques on 14 students between 6 and 7 years old, with cognitive, socioeconomic and family diversity. Ad hoc tools were designed to measure their effectiveness in two areas (group cohesion and emotional intelligence): a questionnaire with a Likert scale to measure seven key aspects of behaviour and a frequency table to measure the use of the main tool, the "Emotionometer" and the identification of emotions. **Results.** Statistical analysis reveals significant differences in group cohesion before and after the sessions ($p = .001$), indicating a post-intervention increase. In addition, a positive effect on emotional intelligence was observed, with improvements in the coherence and expression of emotions. These results suggest that music therapy can be effective in improving coexistence and emotional self-management in Primary Education, being an effective tool in both aspects. In addition, it favoured skills such as sustained attention, tolerance and motor coordination. **Conclusions.** Integrating music therapy into the school curriculum can enrich the educational experience, fostering an inclusive and collaborative learning environment

Keywords: music therapy, dynamical systems, therapeutic alliance, iso-principle.

RESUMEN

Antecedentes. La musicoterapia ha sido ampliamente estudiada en diferentes contextos, pero su aplicación específica para mejorar la cohesión grupal y el desarrollo de la Inteligencia Emocional en niños de Educación Primaria ha sido poco explorada. **Metodología**. Este estudio evalúa el impacto de sesiones semanales de 45 minutos durante ocho semanas, utilizando técnicas de musicoterapia activa y receptiva en 14 alumnos de entre 6 y 7 años, con diversidad cognitiva, socioeconómica y familiar. Se diseñaron herramientas ad hoc para medir su efectividad en dos áreas (cohesión grupal e inteligencia emocional): un cuestionario con escala Likert para baremar siete aspectos clave de la conducta, y una tabla de frecuencias para medir el uso de la herramienta principal, el "Emocionómetro" y la identificación de emociones. **Resultados.** El análisis estadístico revela diferencias significativas en la cohesión grupal antes y después de las sesiones ($p = .001$), indicando un aumento postintervención. Además, se observó un efecto positivo en la inteligencia emocional, con mejoras en la coherencia y expresión de las emociones. Estos resultados sugieren que la musicoterapia puede ser efectiva para mejorar la convivencia y autogestión emocional en Ed. Primaria, siendo una herramienta efectiva en ambos aspectos. Además, favoreció habilidades como la atención sostenida, la tolerancia y la coordinación motriz. **Conclusiones.** Integrar la musicoterapia en el currículo escolar puede enriquecer la experiencia educativa, fomentando un ambiente de aprendizaje inclusivo y colaborativo.

Palabras clave: musicoterapia, inteligencia emocional, cohesión grupal, educación primaria, necesidades educativas.

INTRODUCTION

Although the use of music therapy has been widely studied (Fernández-Company *et al.,* 2024; Freitas *et al.,* 2022; Nevado-Minaya & Fernández-Company, 2022; Sotelo-Martín *et al.,* 2021), the application of this discipline as a tool to facilitate group cohesion and the development of Emotional Intelligence (EI) in Primary Education (PE) students has been scarcely explored. This gap in the literature is particularly relevant given the growing interest in the development of socio-emotional competencies at early ages, especially in disadvantaged socioeconomic contexts, where students' emotional and social needs may be more pressing (Guhn et al., 2020).

From this perspective, the relationship between music and the development of emotional intelligence has been widely studied in the educational field. Music is not only a means of artistic expression but also a powerful tool to strengthen emotional and social development in children and young people (García-Rodríguez *et al.,* 2023; Peretz, 2019; Requena *et al.,* 2021; Rickard *et al.,* 2013). Recent studies have shown that music can modulate emotional responses and improve children's ability to identify and regulate their emotions (Zentner & Eerola, 2010). In addition, music has been associated with improved attention, memory, and problem-solving skills, skills that are critical for academic and social success (Miendlarzewska & Trost, 2014).

Different studies have shown that music education can significantly contribute to emotional well-being, social cohesion and the acquisition of socio-emotional skills essential for interaction and learning (García-Rodríguez *et al.,* 2020; Miendlarzewska & Trost, 2014; Valero-Esteban *et al.,* 2024; Váradi, 2022). For example, a longitudinal study by Creech et al. (2013) found that children who participated in music education programs showed significant improvements in their ability to work in teams and resolve conflicts, skills that are crucial for group cohesion.

In this sense, Kaschub (2002) highlights that one of the main objectives of music education is to help students understand the connection between music and emotions, emphasizing the importance of socio-emotional intelligence in participation in music programs. Wang *et al.* (2022) expand on this perspective by analyzing the impact of music education on the mental health of higher education students, noting that emotional intelligence acts as a key moderator in this process. These findings suggest that music not only has a direct impact on emotional well-being but can also act as a catalyst for the development of broader social-emotional skills (Saarikallio *et al.,* 2020).

From a child development perspective, Blasco-Magraner *et al.* (2021) conducted a systematic review suggesting that the educational use of music can contribute to the development of emotional intelligence in children, influencing the perception, evaluation, and regulation of emotions. In line with this idea, Pastor-Arnau *et al.* (2018) present a music-based emotional education program in primary education, the results of which show improvements in students' self-perception and various emotional variables. These programs not only encourage emotional expression but also promote empathy and understanding of others' emotions, key aspects for group cohesion (Rabinowitch *et al.,* 2013).

Regarding the social benefits of music, Hallam (2010) highlights that participation in group musical activities improves social cohesion and the development of emotional skills, as well as enhancing intellectual development. Similarly, Rabinowitch *et al.* (2013) found that these activities favour the students' ability to connect emotionally with their peers. Ansdell (2014) argues that music acts as a "shared space" that promotes interaction and a sense of community, while Boer and Abubakar (2014) point out that music strengthens social cohesion and emotional well-being in young people, both in the family environment and in peer groups. These findings are particularly relevant in educational contexts, where group cohesion can be a determining factor for students' academic and social success (Kirschner & Tomasello, 2010).

From a neuroscientific perspective, Juslin and Sloboda (2010) suggest that music can be used to develop emotional skills since the ability to recognize emotions in music is related to emotional intelligence. Resnicow *et al.* (2010) suggest that music can be an effective tool to improve this skill. Thoma *et al.* (2013) highlight its role in reducing stress and improving emotional well-being, which facilitates the development of emotional intelligence. Recent studies have noted that music activates brain areas associated with emotional processing, such as the amygdala and prefrontal cortex, suggesting that musical experience can have a profound impact on emotional development (Koelsch, 2014). Likewise, in terms of neurological bases, Koelsch (2014) points out that music activates brain areas related to emotional processing, reinforcing the idea that musical experience can have a profound impact on emotional intelligence.

From music therapy, Kirschner and Tomasello (2010) emphasize that participation in group musical activities encourages prosocial behaviours in young children, which contributes to group cohesion and the creation of strong social bonds. Weinstein *et al.* (2016) add that group singing not only reinforces social cohesion but also lowers the threshold of pain, suggesting that music plays a key role in strengthening group bonds. These findings are consistent with evidence suggesting that music can modulate the activity of

neuroendocrine systems, reducing cortisol levels and promoting the release of oxytocin, a hormone associated with social bonding and trust (Chanda & Levitin, 2013).

Finally, Dumont *et al.* (2017) review the effects of musical interventions on child development and conclude that, although the results suggest potential benefits, more research is required to fully understand the factors that influence the outcomes of such interventions. In short, these studies underscore the importance of using music as a valuable educational tool to strengthen emotional intelligence, foster social cohesion, and promote the well-being of students at different educational levels.

Based on these premises, the aim of this study was to explore the impact of music therapy as a tool to facilitate group cohesion and the development of emotional intelligence (EI) in Primary Education (PE) students, particularly in a disadvantaged socioeconomic context. We sought to evaluate how interventions based on active and receptive music therapy techniques can influence emotional identification, expression and regulation, as well as social cohesion among students.

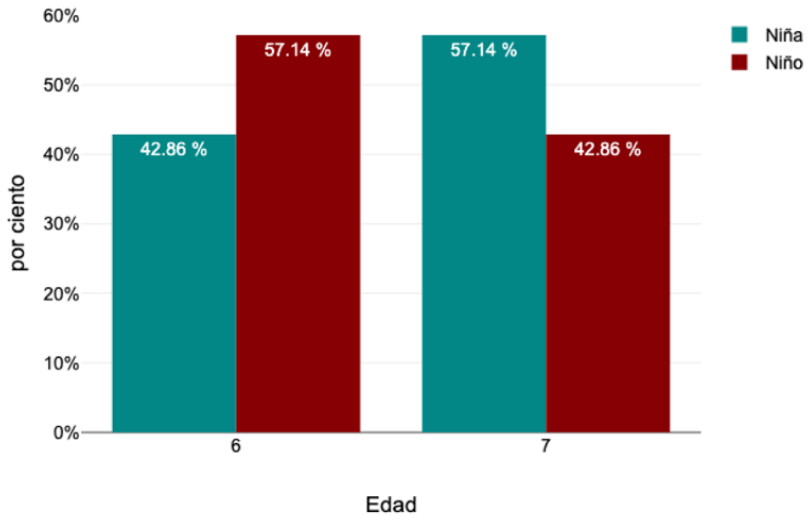
MATERIALS AND METHOD

Participants

The sample we have worked with in this study consists of 14 primary education students aged between 6 and 7 (M=6.5; SD= 0.52), of whom 50% were girls. Figure 1 provides a detailed description.

Figure 1

Distribution of the sample by variables



The sample was composed of middle—and lower-class families, one of which was at risk of extreme poverty. This study was conducted to explore how diverse family, socioeconomic, and educational conditions influence children's school performance and well-being.

In terms of academic representation, it was observed that most families had at least a university or intermediate degree, suggesting a significant level of formal education. However, family stability showed great variability, with cases of separation and situations of gender violence affecting the domestic environment. The school performance of the children was diverse, and although there was an inclination towards good academic achievement, cases of learning difficulties and attention problems were also found. These findings underscore the need for targeted educational support to address these difficulties and ensure effective learning.

The children's social skills also varied widely. While some showed good social skills, others were dependent or insecure in their interactions. This diversity in social skills reflects the different dynamics and supports present in their family environments.

Motivation and interest in the school environment were generally high, although not exempt from cases of unstable or low motivation. Specific health problems, such as ADHD and physical disabilities, were also present, significantly affecting the learning and behavioural capacities of some children.

In summary, this study reveals a complex network of family, socioeconomic and educational factors that influence school performance and children's emotional and social well-being. These findings underscore the importance of addressing these diverse conditions to promote comprehensive and equitable education development.

Incentives and measures

Stimuli. 8 sessions (one per week) of 45 minutes have been carried out, using both active and receptive music therapy techniques (Fernández-Company, 2024). In the intervention sessions, various musical and visual stimuli were used to facilitate identification, expression and emotional regulation in the participants.

Auditions of musical pieces selected according to their relationship to specific emotions (joy, sadness, fear, anger and calm) were used, including fragments of soundtracks and popular songs. In addition, dynamics of singing, body percussion and instrumentation were integrated with small percussion instruments (maracas, bells, tambourines, claves

and triangles), promoting sound experimentation and creative expression.

On a visual level, the "Emotionometer" was implemented, a panel with images of facial expressions corresponding to basic emotions, which the children used at the beginning and end of each session to record their mood. Illustrations from the story

El Mon-strum de Colores (Llenas, 2012) were also used to reinforce the association between emotions and their graphic representation and other musical stories. These stimuli were combined in structured activities and musical games designed to enhance empathy, cooperation and emotional exploitation in a playful and safe environment.

Measurement. Two ad hoc tools were designed to evaluate the music therapy sessions. The first, a questionnaire based on a five-point Likert scale, measured the effectiveness of music therapy as an instrument of group cohesion through seven key aspects related to participation, interaction and emotional regulation.

The scale included items on active participation, maintenance of attention, following instructions, harmonious movements, respect for group interaction and assertive expression.

The second tool consisted of a frequency table to assess the development of emotional intelligence. Three specific indicators were analyzed: the use of the Emotionometer at the beginning of the session and its coherence with the participant's emotional state, as well as the ability to recognize and name basic emotions in the context of musical dynamics.

The data were recorded over eight sessions, allowing a quantitative analysis of individual and group progress in terms of emotional intelligence.

Procedure

The study was carried out systematically, ensuring the active participation of all parties involved. First, the educational centre's management team was interviewed, and the objectives and characteristics of the proposal were presented.

After obtaining their approval, the faculty, the specialist in Music Education, and a student of Teacher Training were informed to coordinate and request their collaboration in implementing the project.

Afterwards, an informative meeting was held with the participants' families to ensure transparency of the process and obtain their informed consent. During this session, the conditions under which the project would be developed were explained, fostering a mutual understanding of the objectives and approach of the intervention. The necessary material was then collected and prepared to carry out the sessions that were integrated into the school schedule.

In this way, this space was used to carry out the intervention with a group of 14 students without interfering with other curricular activities. For data collection, it was decided to record the sessions, the content of which was reviewed and recorded in an observation diary, with the aim of monitoring progress in detail.

In addition, due to the young age of the participants, the Likert scale used in the project was completed by the music therapist, who evaluated the key indicators from the direct observation category.

Data analysis

Regarding the analysis of the data obtained, statistical tools were used that allowed the results to be evaluated rigorously. The repeated measures *ANOVA* test helped to identify significant differences in dependent variables, such as use, coherence, emotional identification and expression, throughout the different phases of the intervention.

In addition, the *Wilcoxon* test was used to compare changes in pre- and post-treatment variables, which was an appropriate option given the nonparametric nature of the paired data. Finally, a reliability analysis was carried out to evaluate the internal consistency of the questionnaire used, identifying the correlation between the items and selecting those that offered greater precision and coherence at the scale applied.

RESULTS

First, with respect to the analysis of the use, coherence identification and emotional expression of the Emotionometer, Tables 1 and 2 detail the results of the analysis of variance of a factor with repeated measures that have shown that there was a significant difference between the variables ($F = 7.15$, $p = <.001$) with an effect size $\eta 2p = 0.35$.

According to Cohen (1988), the limits for effect size are 0.01 (small effect), 0.06 (medium effect), and 0.14 (large effect). This suggests that the treatment had a considerable effect on the measured variables, indicating that the treatment can explain a significant proportion of the variance in the dependent variables. Table X also shows the statistical results of the Wilcoxon test for the three factors of the questionnaire.

Table 1

ANOVA statistical results with repeated measures

	Sum of Type III Squares	df	Medium squares	F	p	η^2_p
Treatment	3.49	5	0.7	7.15	<.001	0.35
Error	6.35	65	0.1			

Table 2

Statisticians Wilcoxon Test

	W	z	p	r
Post Use. - Pre Use.	0	-2.45	14	0.65
Post Coherence - Pre Coherence	0	-2.45	14	0.65
Ideate. and expo. Emo. Post - Ideen. and expo. Emo. Pre	0	-2.24	25	0.6

Table 3

Statistical results of the Wilcoxon test

	W	z	p	r
Group cohesion POST - PRE	0	-3.27	I	0.87

Figure 2

Box Plot of Pre-Post Group Cohesion Outcomes

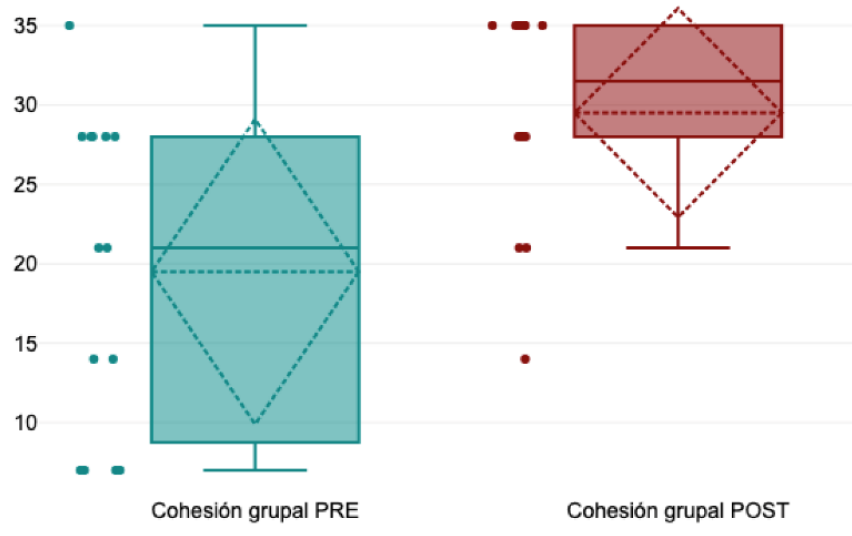


Tabla 4

Results of the intraclass correlation coefficient

Intra class correlation coefficient	Lower 95%-CI	Upper 95%-CI	F	df1	df2	p
0.01	0	0.03	3.17	13	78	**.001**

Next, in Table 3 and Figure 2, it can be seen that the Group Cohesion group PRE had lower values (M = 19.5) than the Group Cohesion group POST (M = 29.5). In this sense, the null hypothesis that the variable Group Cohesion POST had a value less than or equal to the variable Group Cohesion PRE has been tested using a unilateral t-test for paired samples. The result was statistically significant, p = .001, so this null hypothesis was rejected.

Finally, Table 4 shows the statistical results of the reliability analysis between the items of a questionnaire, showing an acceptable Cronbach's alpha (α= > 0.7).

DISCUSSION

The results of this study confirm that music therapy has a significant impact on the development of emotional intelligence and group cohesion in primary school students. These findings are in line with previous literature highlighting the role of music as a powerful tool for emotional and social development in children (Peretz, 2019; Requena *et al.*, 2021; Rickard *et al.*, 2013).

In particular, the use of the "Emotionometer" and structured musical dynamics allowed participants to identify and express basic emotions more effectively, reinforcing the idea that music can be a vehicle for emotional exploration and affective regulation (Blasco-Magraner *et al.*, 2021; Pastor-Arnau *et al.,* 2018).

The observed improvement in group cohesion also supports previous research findings highlighting the role of group musical activities in promoting social interaction and a sense of community (Ansdell, 2014; Rabinowitch *et al.*, 2013).

Engaging in singing and body percussion dynamics not only fostered cooperation but also reduced emotional barriers among students, suggesting that music can act as a "shared space" that facilitates emotional connection (Kirschner & Tomasello, 2010; Wein-stein *et al.,* 2016).

From a neuroscientific perspective, the results are also aligned with evidence suggesting that music activates brain areas related to emotional processing (Koelsch, 2014).

Participants' ability to recognize and name emotions in the context of musical dynamics may be related to the activation of these areas, reinforcing the idea that musical experience has a profound impact on the development of emotional intelligence (Juslin & Sloboda, 2010; Resnicow *et al.,* 2010).

Despite the promising results, this study has several limitations. First, the sample was relatively small (n = 14) and homogeneous in terms of age and socioeconomic background, limiting the generalizability of the findings.

In addition, the short duration of the intervention (8 sessions) may not have been enough to observe more profound changes in the participants' emotional and social development. Another limitation was the reliance on direct observation and evaluation by the music therapist, which could introduce bias in the interpretation of the results.

From this perspective, we believe that future research should consider expanding the sample and including control groups to compare the effects of music therapy with other educational interventions. It would also be valuable to explore the long-term impact of these interventions and their applicability in different socioeconomic and cultural contexts.

In addition, more objective measures, such as physiological recordings or neuroimaging, could be incorporated to complement subjective assessments and gain a more complete understanding of the underlying mechanisms.

The results of this study also have important implications for the educational field. First, they suggest that music therapy can be an effective tool to promote emotional and social development in primary school students, particularly in disadvantaged contexts. Integrating music therapy programs into the school curriculum could help address students' emotional and social needs, improving their well-being and academic performance.

In addition, the results support the idea that music education should not be limited to teaching technical skills but should also focus on developing socio-emotional competencies. Teachers and music education specialists could benefit from incorporating music therapy techniques into their pedagogical practices, using music to foster empathy, cooperation, and emotional regulation in the classroom.

In conclusion, this study contributes to the growing evidence supporting the use of music as a valuable educational tool for students' holistic development. Although more research is needed to understand its effects fully, the results suggest that music therapy may play a key role in promoting emotional intelligence and group cohesion in the educational setting.

REFERENCES

Ansdell, G. (2014). How Music Helps in Music Therapy and Everyday Life. Routledge.

Blasco-Magraner, J. S., Bernabe-Valero, G., Marín-Liébana, P., & Moret-Tatay, C. (2021). Effects of the Educational Use of Music on 3- to 12-Year-Old Children's Emotional Development: A Systematic Review. *International journal of environmental research and public health, 18*(7), 3668. https://doi.org/10.3390/ijerph18073668

Boer, D., & Abubakar, A. (2014). Music listening in families and peer groups: benefits for young people's social cohesion and emotional well-being across four cultures. *Frontiers in psychology, 5*, 392. https://doi.org/10.3389/fpsyg.2014.00392

Chanda, M. L., & Levitin, D. J. (2013). The neurochemistry of music. *Trends in cognitive sciences, 17*(4), 179–193. https://doi.org/10.1016/j.tics.2013.02.007

Costa-Giomi, E. (1999). The effects of three years of piano instruction on children's cognitive development. *Journal of Research in Music Education, 47*(3), 198-212. https://doi.org/10.2307/3345779

Creech, A., Hallam, S., Varvarigou, M., McQueen, H., & Gaunt, H. (2013). Active music making: a route to enhanced subjective well-being among older people. *Perspectives in public health, 133*(1), 36-43. https://doi.org/10.1177/1757913912466950

Dumont, E., Syurina, E. V., Feron, F. J. M., & van Hooren, S. (2017). Music Interventions and Child Development: A Critical Review and Further Directions. *Frontiers in psychology, 8*, 1694. https://doi.org/10.3389/fpsyg.2017.01694

Fernández-Company, J. F., Quintela-Fandino, M., Sandes, V., & García-Rodríguez, M. (2024). Influence of Music Therapy on the Improvement of Perceived Well-Being Indices in Women with Breast Cancer Undergoing Hormonal Treatment. *American Journal of Health Education, 55*(5), 315-326. https://doi.org/10.1080/19325037.2024.2338458

Fernández-Company, J.F. (2024). Musicoterapia receptiva: más allá de la pasividad [Receptive Music Therapy: Beyond Passivity]. *Misostenido, 4*(8), 32-35. https://doi.org/10.59028/misostenido.2024.23

Freitas, C., Fernández-Company, J.F., Pita, M.F. y García-Rodríguez, M. (2022). Music therapy for adolescents with psychiatric disorders: *An overview. Clinical Child Psychology and Psychiatry, 27*(3), 895-910.https://doi.org/10.1177/13591045221079161

Gamella-González, D.G. (2023). Voces de Acogida: diseño, implementación y desarrollo de un proyecto de terapias artísticas creativas para la inclusión social. En *Sinfonías del Cambio: Música y Arte en la Transformación Social. (*pp. 249 - 258.) Dykinson.

García-Rodríguez, M., Alvarado, J.M., Fernández-Company, J.F., Jiménez, V., & Ivanova-Iotova, A. (2023). Music and facial emotion recognition and its relationship with alexithymia. *Psychology of Music, 51*(1), 259-273. https://doi.org/10.1177/03057356221091311

García-Rodríguez, M., Fernández-Company, J.F., Jiménez, V., & Alvarado, J.M. (2020). Sensibilidad musical y su relación con la inteligencia emocional y la alexitimia en la adolescencia. En M. del M. Molero et al. (Comps.), *Variables Psicológicas y Educativas para la Intervención en el ámbito escolar. Nuevas realidades de análisis* (pp. 115-126). Dykinson.

Guhn, M., Emerson, S. D., & Gouzouasis, P. (2020). A population-level analysis of associations between school music participation and academic achievement. *Journal of Educational Psychology, 112*(2), 308-328. https://doi.org/10.1037/edu0000376

Hallam, S. (2010). The power of music: Its impact on the intellectual, social and personal development of children and young people. *International Journal of Music Education, 28*(3) 269-289.https://doi.org/10.1177/0255761410370658

Juslin, P. N., & Sloboda, J. A. (Eds.). (2010). *Handbook of music and emotion: Theory, research, applications*. Oxford University Press.

Kaschub, M. (2002). Defining Emotional Intelligence in Music Education. *Arts Education Policy Review, 103*(5), 9–15. https://doi.org/10.1080/10632910209600299

Kirschner, S., & Tomasello, M. (2010). Joint music making promotes prosocial behavior in 4-year-old children. *Evolution and Human Behavior, 31*(5), 354-364. https://doi.org/10.1016/j.evolhumbehav.2010.04.004

Koelsch S. (2014). Brain correlates of music-evoked emotions. Nature reviews. *Neuroscience, 15*(3), 170-180. https://doi.org/10.1038/nrn3666

Llenas, A. (2012). *El monstruo de colores*. Editorial Flamboyant.

Miendlarzewska, E. A., & Trost, W. J. (2014). How musical training affects cognitive development: rhythm, reward and other modulating variables. *Frontiers in neuroscience, 7,* 279. https://doi.org/10.3389/fnins.2013.00279

Montello, L., & Coons, E. E. (1999). Effects of Active Versus Passive Group Music Therapy on Preadolescents with Emotional, Learning, and Behavioral Disorders. *Journal of music therapy, 35*(1), 49–67. https://doi.org/10.1093/jmt/35.1.49

Pastor Arnau, J., Bermell Corral, M., & González Such, J. (2018). Programa de educación emocional a través de la música en educación primaria. *Edetania,* (54), 199-222.

Peretz, I. (2019). *Aprender música: ¿Qué nos enseñan las neurociencias del aprendizaje musical?*. Ma Non Troppo.

Rabinowitch, T.-C., Cross, I., & Burnard, P. (2013). Long-term musical group interaction has a positive influence on empathy in children. *Psychology of Music, 41*(4), 484-498.https://doi.org/10.1177/0305735612440609

Requena, S. O., Carnicer, J. G., & Calafell, M. N. (2021). La educación musical: fundamentos y aportaciones a la neuroeducación. *Journal of neuroeducation, 2*(1), 22-29.https://doi.org/10.1344/joned.v2i1.31576

Resnicow, J. E., Salovey, P., & Repp, B. H. (2004). Is recognition of emotion in music performance an aspect of emotional intelligence? *Music Perception, 22*(1), 145–158. https://doi.org/10.1525/mp.2004.22.1.145

Rickard, N. S., Appelman, P., James, R., Murphy, F., Gill, A., & Bambrick, C. (2013). Orchestrating life skills: The effect of increased school-based music classes on children's social competence and self-esteem. International *Journal of Music Education, 31*(3), 292-309. https://doi.org/10.1177/0255761411434824

Rickard, N. S., Bambrick, C. J., & Gill, A. (2012). Absence of widespread psychosocial and cognitive effects of school-based music instruction in 10–13-year-old students. *International Journal of Music Education, 30*(1), 57-78. https://doi.org/10.1177/0255761411431399

Saarikallio, S. H., Randall, W. M., & Baltazar, M. (2020). Music Listening for Supporting Adolescents' Sense of Agency in Daily Life. *Frontiers in psychology, 10*, 2911. https://doi.org/10.3389/fpsyg.2019.02911

Schellenberg, E. G., & Mankarious, M. (2012). Music training and emotion comprehension in childhood. *Emotion (Washington, D.C.), 12*(5), 887–891. https://doi.org/10.1037/a002797

Sotelo-Martín, J.A., Fernández-Company, J.F., Gamella-González, D. & Fernández-Cahill, M. (2021). Reflexión acerca de la eficacia de la música en la educación: una visión general. *Revista Misostenido, 2*(7), 51-59.

Thoma, M.V., La Marca, R., Brönnimann, R., Finkel, L., Ehlert, U., & Nater, U. M. (2013). The effect of music on the human stress response. *PloS one, 8*(8), e70156. https://doi.org/10.1371/journal.pone.0070156

Valero-Esteban, J. M., Alcover, C. M., Pastor, Y., Moreno-Díaz, A., & Verde, A. (2024). Emotions and music through an innovative project during compulsory secondary education. *Heliyon, 10*(4). e25765. https://doi.org/10.1016/j.heliyon.2024.e25765

Váradi, J. (2022). A Review of the Literature on the Relationship of Music Education to the Development of Socio-Emotional Learning. *Sage Open, 12*(1). https://doi.org/10.1177/21582440211068501

Wang, F., Huang, X., Zeb, S., Liu, D., & Wang, Y. (2022). Impact of Music Education on Mental Health of Higher Education Students: Moderating Role of Emotional Intelligence. *Frontiers in psychology, 13*, 938090. https://doi.org/10.3389/fpsyg.2022.938090

Weinstein, D., Launay, J., Pearce, E., Dunbar, R. I.M., & Stewart, L. (2016). Singing and social bonding: Changes in connectivity and pain threshold as a function of group size. *Evolution and Human Behavior, 37*(2), 152–158. https://doi.org/10.1016/j.evolhumbehav.2015.10.002

Zentner, M., & Eerola, T. (2010). Rhythmic engagement with music in infancy. *Proceedings of the National Academy of Sciences of the United States of America, 107*(13), 5768–5773. https://doi.org/10.1073/pnas.1000121107

THE EMOTIONAL COMPONENT OF MUSIC IS A GOOD EDUCATIONAL TOOL

Imagen creada con Leonardo.ai por D. Gamella - Promt "investigación y musicoterapia"