Harmonia: Journal of Arts Research and Education 24 (2) (2024), 236-246
Available online at http://journal.unnes.ac.id/journals/harmonia
DOI: http://dx.doi.org/10.15294/harmonia.v24i2.15113

p-ISSN 2541-1683 | e-ISSN 2541-2426

A Systematic Review on the Emotional Dimensions of Music Education

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Submitted: October 17, 2024. Revised: November 16, 2024. Accepted: December 21, 2024

Abstract

In the constantly changing challenges of education, the role of emotional competence is becoming increasingly important. This paper explores the literature on the connections between music and emotional education at different levels of education and in teacher training, and in light of the results, it presents the possibilities of music education in the development of different dimensions. This study uses a systematic literature review procedure prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The acquisition, effective recognition, and management of emotions are necessary knowledge, skills, and attitudes that help individuals develop and maintain functioning social relationships and make responsible decisions. The role of music in education has come to the fore several times in the past centuries. Music education can convey emotions and contribute to socio-emotional education and mental well-being.

Keywords: music education; emotional education; teacher training; mental health

How to Cite: Váradi, J., Szűcs, T., Kerekes, T., Kiss, J., & Radócz, J. M . (2024). A Systematic Review on the Emotional Dimensions of Music Education. *Harmonia: Journal of Arts Research and Education*, 24(2), 236-246

INTRODUCTION

Nowadays, with the emergence of artificial intelligence, the issue of emotional development is becoming increasingly prominent. In this paper, we aim to present a non-exhaustive review of research on the relationship between emotional intelligence and music.

The information explosion of the 21st century has significantly changed many aspects of society and life; the Internet has facilitated the flow of information, data is available to everyone, information can be delivered anywhere in the world in seconds. With the emergence of artificial intelligence, we are facing further societal changes, but these are not yet transparent. McKinsey reports that by 2030, 2/3 of companies will use AI technology. There is some speculation that people will have more time, as working hours and working habits change alongside changes in the labour market. The question is how people can make the most of the increased leisure time. Artificial intelligence has already appeared in the field of art, with the ability to generate new music and restructure existing music. However, it is not able to produce the depth of music that has been produced so far.

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UNESCO's Commission on Education for the Twenty-first Century, in its report titled "Learning: The Treasure Within" (unesco.org), sets out four pillars on which the new education of the 21st century is built: learning to know, learning to do, learning to live together, and learning to be. The last two pillars are closely linked to emotional intelligence. Emotions are fundamental to everyday activities and can affect communication, learning and decision-making. According to Campayo-Muñoz and Cabedo-Mas (2017), music is an excellent tool for expressing emotions, and music education should, therefore, have a place in the individual's emotional development.

The paper draws a map of the research on the emotional effects of music education, which is intended to help the reader to find his way around the subject, but it does not aim to describe in detail the methods, patterns and circumstances of the research presented. The logical thread of our summary follows a temporal axis: after an overview of the basic links between music education and emotional development, we present the relationship between formal and non-formal music education and emotional intelligence by age group; we conclude with a discussion of the role of the teacher in this context. Our focus is on the pedagogical dimension of music; therefore, the interaction between music and the emotional dimension is examined from the perspective of music education. In our study, we do not draw a sharp distinction between the concepts of music engagement and music education: the learning process referred to in the latter term is achieved through the active musical activity denoted by the former, and the two sets thus share a significant cross-section.

METHOD

This systematic literature review was prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines (see Figure 1).

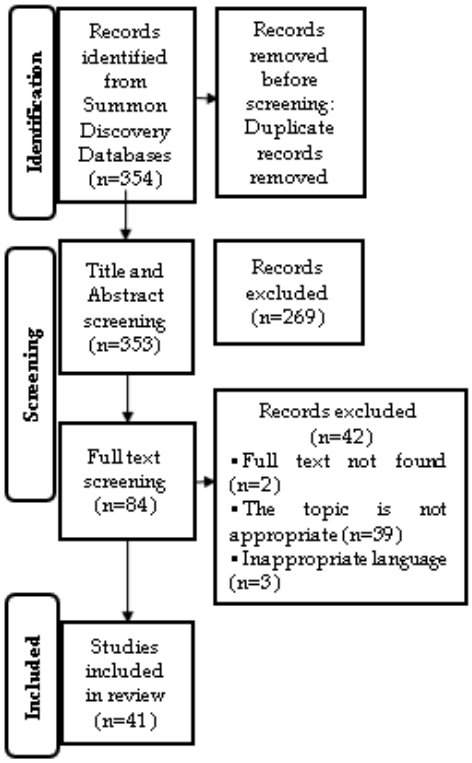

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) diagram

Eligibility criteria

The following criteria were formulated for the systematic review. The studies to be included (1) reported original research published in a peer-reviewed journal; (2) were written in English; (3) their full text, book chapter or book/e-book was published in academic journals; (4) included the selected keywords in their abstracts; (5) belonged to the discipline of education, music, psychology, public health, social sciences, social welfare and social work, nursing; (6) examined the relationship between the emotional intelligence and music.

Information sources and search strategy

Searches were conducted on 16th December 2022 in Summon Discovery Service Search Engine, which contains 148 databases. The keywords used in our search strategy were: "emotional intelligence" AND "music". Overall, our systematic searches resulted in 354 records sorted by title and

abstract. Based on the inclusion and exclusion criteria, we examined the full text of 84 records for eligibility. Finally, 42 studies were included in the analysis (see Figure 1). Open-access studies and non-open-access studies available through the university library system were used for the analysis.

Selection and data collection process

Study characteristics and risk of bias were independently assessed and evaluated by the five authors. A multi-stage screening process was performed to select studies which met the inclusion criteria. In stage 1, the titles and abstracts of all identified records were screened by each author according to the following criteria: the study's topic is the relationship between music education and emotional intelligence, the study researches music as part of music education, music listening is investigated as part of music education. Studies related to music listening in relation to cultural consumption and leisure were excluded. In the case two of the five authors approved a study, it was passed to the next phase of the evaluation.

In stage 2, the selected studies were split for further analysis, where the five authors independently screened the full texts taking into account the fulfillment of the criteria mentioned above. After reading the full text, each author explained why they would include or exclude the study. In the last phase, each author checked the work of a co-author, and if an agreement was reached about the study, it was included in the review.

Data items

Our search strategy was appropriate; therefore, the necessity to change it didn't occur.

Study risk of bias assessment

Publication bias is present in our study, as our aim was only to explore the published literature. We are not in a position to examine results that have not been published.

Study selection

Studies were selected by filtering the records identified from the Summon Discovery databases in a multi-step process. The total number of records identified is 354. One study was excluded due to duplication. The title and abstract screening process excluded 269 studies that did not meet the inclusion criteria (see section Selection). Eighty-four studies were included in the full-text screening process, during which 42 studies were excluded due to lack of full text (2), inappropriate language (3) and inappropriate topic (39). This decreased the total number of studies included in the review to 41 (see Figure 1).

RESULT AND DISCUSSION

The relationship between music education and emotional intelligence

For a fulfilled adult life, including employment, the ability to work together, be constructive in a group and adapt flexibly is necessary. Emotional education in the educational setting provides the basis for acquiring and applying these skills but also helps to prevent behavioural disorders and difficulties in fitting in. However, emotional intelligence is not only necessary for social interaction: understanding our own feelings and the feelings of others also plays a significant role in other thought processes. Csíkszentmihályi (2013) stresses that cognitive activities are not solely based on cognitive factors. Goleman (1995) also affirms the role of emotions, despite the fact that cleverness is a prerequisite for success, it is not sufficient in itself. Emotional skills can be acquired, and they help individuals achieve mental balance, which has a positive impact on health and well-being. In terms of emotional education, art classes, including music, stand out among the subjects taught at school. Music lessons in preschool and school have been shown to help develop emotional adjustment skills and prevent psychological problems (Jacobi 2012; Cuadrado, 2019; Blasco-Magraner et al.; 2021; Boucher et al.; 2021; Váradi, 2022). George, Rachid, Stickle

and Wopnford's (2007) findings also demonstrate that meaningful music education in the school setting is key to helping students manage their emotions. Below, we highlight which components of emotional intelligence are essential to the development of emotional intelligence through musical activities (whether within or outside formal education). Based on previous research, MacDonald and Wilbiks (2022) examined the relationship between formal music education and emotion recognition. According to their results, music education has a positive effect on the identification of emotions, which in turn improves the quality of interpersonal relationships.

Music and emotions have in common that they are both multi-level constructs influenced by multiple variables, processes and interactions. Research has investigated music's ability to facilitate group emotions, the musical properties that contribute to emotional responses, and the communicative function of music-induced emotions (Salokivi, Salanterä, Ala-Ruona, 2022). Music is a multifaceted realm of experiences and experiences and, when received, generates different experiences in each listener, hence its socio-emotional power (Koelsch, 2014). According to Kaschub (2002), one of the tasks of music teachers is to encourage children to be aware of the feelings they experience when performing, creating or listening to music. Music education can be a tool to help students understand the relationship between feelings and music more deeply. At the same time, the emotional impact of music is strongly influenced by the musical knowledge acquired, which also supports the importance of music education (Bonetti et al., 2021).

Interacting with others and belonging to a group plays an important role in our lives. The role of emotional intelligence in social connectedness is significant. The role of emotional intelligence in social connections is highlighted by Zhang et al. (2022), whose study on orphaned or vulnerable children showed that children with higher emotional intelligence found supportive social environments more easily. Research confirms that music education provides a space to experience emotions individually and collectively, offers a latent toolkit for learning emotion regulation, and forms a bridge for social connection between children from different social backgrounds (Smith, 2004; Hallam, 2010; Váradi, 2022). Participation in musical activities closely parallels community experiences and establishes the possibility of socio-emotional development through the specific means of collective creation (Blasco-Magraner et al., 2021). Individuals naturally acquire the skills related to cooperation, adaptation to others, and the fulfilment of coordination requirements, so the general pedagogical returns to music education go far beyond its professional specificities (Váradi, 2022).

Music education can, therefore, help develop social skills in several ways, but it can also transmit national culture and a sense of community (Smith, 2000). An important feature of music education is that it can be delivered in both individual and group settings. These two types of activities are simultaneously present in the process of music education. By their very nature, individual music lessons play less of a role in the development of social competencies than group lessons. Schellenberg and Mankarious (2012) conclude from their research that solo instrumental training, which presupposes frequent individual lessons and solitary practice, does not majorly impact social skills. This problem is also highlighted by Kim (2004), who proposes group piano lessons as a specific initiative.

At the same time, the positive impact of individual music sessions on the recognition and expression of emotions and the development of creativity cannot be neglected. Group music-making is an area of music education with specific characteristics. Hallam (2010) highlights in his work that participants in group music-making (orchestras, choirs) are characterised by a sense of belonging, a sense of co-creation and discipline based on a shared set of norms, respect and trust (Smith, 2004; Hallam, 2010). Damsgaard and Brinkmann

(2022) investigated the impact of music, in the form of singing in a choir, on social relationships and mental health. Participation in choir singing induces a conscious presence, which leads to awareness of relationships and solidarity. The dialogue within the individual and between the individual and their community in choirs contributes to the transmission of a culture of self-determination and a humane, solidarity-based social existence, which is the essential environment for the preservation of mental health.

Music education also contributes to mental health and emotional balance (Wang et al., 2022). Lantieri (2012) explored how teachers could help children manage their emotions, become more resilient to stress, and improve their mental well-being and resilience in the face of adversity. The findings suggest that listening to music is the most effective coping strategy for children against stress, alongside being active and playing.

The impact of musical activity on the development of the emotional world in early childhood

Recognising the need for emotional education, the education sector is increasingly focusing on promoting social and emotional learning. Music education (Váradi, 2022), which is very time-sensitive, can play a significant role in achieving this in the school setting. In their empirical study, Boucher et al. (2021) show that children's age is a determinant of the development of emotional skills, and that participation in music programmes should start at an early age. They attach particular importance to early childhood music education in disadvantaged communities (Hallam, 2010; Boucher et al., 2021).

The impact of active musical activities is also emphasised by Cotter, Pretz, and Kaufman (2016), who highlight that of all the extracurricular activities at school or elsewhere, active art activities are the most effective in developing creativity. Berman (2003) demonstrates that staging opera performances contributes to positive social and emotional development, also increases ethical and moral awareness, and positively affects self-expression. The benefits of art education, in addition to self-expression, include the ability of abstract thought, empathy, the desire to dream through creative design, and the urge for development. Art education positively affects the willingness to learn and create timeless works.

In an empirical study, Cuadrado (2019) investigated the contribution of music and musical intelligence to the development of social and emotional relationships and cognitive abilities in young children. To measure this, test scores of 6–7-year-old children (n=10) participating in the '*Music and Talent*' programme were compared to a control group (n=10) of the same age group. Results showed that children participating in the musical project showed stronger self-efficacy, greater satisfaction with different challenges, increased motivation to play complex games, and greater self-confidence overall. In addition, the '*Music and Talent*' project demonstrably contributes to participants' self-confidence, self-esteem, and stronger social and emotional relationships.

In a study of 38 primary school children, Rose, Jones, Bartoli and Heaton (2019) investigated the effects of extracurricular music learning and formal group music lessons in school on music skills. They found a significant association between music aptitude and intelligence, but there was no evidence that music learning affects memory or social-emotional behaviour.

Kim and Kim (2018) investigated whether there was a difference between the emotional intelligence, anxiety, and aggressive behaviour of schoolchildren who participated only in curricular music lessons and those who participated in instrumental music lessons. After the 24-week experiment, instrumental music education was demonstrated to improve emotion perception and reduce physical and verbal aggression; however, no statistically significant difference was found between the

two groups regarding overall emotional intelligence, anxiety, and aggression.

Goopy (2013) also studied the effects of music education which extend beyond musical skills, that is, the transfer effects of music education. In his literature review, he specifically focused on the concept and philosophy of music education developed by Zoltán Kodály. He concluded that music education based on the Kodály philosophy was an excellent support for children's overall learning and educational progress, as the transfer effects of music could also develop skills used by children in school and in everyday life. He also stated that time spent on music education, according to the Kodály concept, significantly improved children's academic performance while they were developing socio-emotional skills and social sensitivity.

In their study, Corrigall, Schellenberg, and Misura (2013) acknowledge that music lessons change children's behaviour, with detectable neurological effects, but they feel that several previous studies may have overestimated the effects of music education by not taking into account the role of children's personality. Letić Lungulov et al. (2022) and Milena et al (2020) also draw attention to the need to consider relevant personality traits when developing skills.

The impact of music education on the development of emotional intelligence in secondary school and university

Research on the role of music in the lives of adolescents and young adults is presented below.

Saarikallio and colleagues (2014) investigated whether adolescents' abilities reflect their general socio-emotional communication and interaction abilities in perceiving and expressing emotions through music by assessing empathy and behavioural problems. The results suggest that musical behaviour can be used as a marker of socio-emotional communication skills, which play a major role in adolescent well-being and adjustment.

Fernández et al. (2014) used musical activities as a reward in a therapeutic approach to adolescent behavioural problems (emotional instability). By playing music together, young people experienced the merits of their individual contribution to collective success, were more likely to avoid conflict, and could cooperate. Uhlig et al. (2016) studied adolescents and found a positive association between listening to music and improved behavioural problems. The therapeutic use of music in a school programme contributed to the prevention of behavioural problems, assisted the development of coping strategies and mental well-being, and supported the improvement of self-regulation skills.

The transfer effects of musical activity were also investigated by Schellenberg (2011), who compared the intelligence quotient and emotional intelligence of university students (n=106). He divided the participants into two groups according to their musical education. The members of the musically trained group (n=51) had received at least eight years of extracurricular music education, while the other group (n=55) had not studied music at all. The results showed that the musically trained group performed better on intelligence tests, but no significant difference was found for emotional intelligence.

Results from George, Rachid, Stickle and Wopnford (2007) show that the amount of time and practice spent learning an instrument has an impact on several types of intelligence. Largely similar results were obtained in a quantitative study by Swaminathan, Schellenberg, and Khalil (2017). In a study on university students, they tested the existence of a correlation between the duration of music training and intelligence and examined whether the hypothesised correlation could be explained by musical talent and aptitude. A positive correlation was found between intelligence, duration of music training, and musical talent, but after controlling for other background variables, it was found that the association could be explained by the fact that individuals with good musical aptitude were also likely to be highly

intelligent.

Many studies support the benefits of formal music education, including in the areas of social skills, mental health and speech understanding. Singer (2008) describes music education and education through music as a sensitive and responsive form of education that "changes everything." In their study of undergraduate students, MacDonald and Wilbiks (2022) found a link between musical training and emotion recognition in speech prosody. More effective conversation through better emotion recognition leads to better communication effectiveness in interpersonal relationships based on successful interpretation and expression of emotions. Thus, formal music education indirectly improves the quality of interpersonal relationships. In addition, it is important to note that musical expertise could help reduce conflict through better understanding, although it does not necessarily improve the quality and depth of the relationship. Improved interpersonal relationships can be beneficial for a wide range of people but are particularly useful for school-age children and people with mental illness. In particular, musical training could be a tool to improve the perception of emotions in populations that tend to have poorer emotion recognition or struggle with interpersonal relationships.

Thompson et al. (2004) conducted three experiments to investigate emotional sensitivity in different age groups. They also examined the identification of emotions in music and speech prosody. According to their results, music education establishes and nurtures emotional intelligence by developing and refining the processes for perceiving emotions expressed in music, facilitating emotional decoding of speech. In other words, music education could provide the foundations for the basic ability to decode emotions. Positive and negative emotions are easier to separate than nuances of similar emotions, but the results suggest that music education may enable emotional fine-tuning.

In their research with university students, Trimmer and Cuddy (2008) found no relationship between musical training and emotion recognition in speech prosody. Instead, they found that emotional intelligence reliably predicted the recognition of the emotional content of speech. It is believed that intermodal and cross-modal emotion processing is responsible for emotion identification.

The role of the teacher in emotional development through music

The research presented above confirms that music education plays an important role in the development of emotional intelligence at all levels of the school system and at all ages. Exploiting the potential of music education in formal settings will lead to a more mentally and emotionally balanced, cooperative and productive generation of adults (Goopy, 2013). The question of who and how music education is delivered cannot be neglected: the teacher's professional knowledge, preparation and mastery are key.

McGinnis (2018) suggests that the Emotional Intelligence 2.0 model, developed by Bradberry and Greaves (2009), should be taught to prospective music teachers as part of an introductory course lasting at least a semester. Designed to develop the four core skills of emotional intelligence (self-awareness, self-management, social awareness, relationship management), the programme helps students to identify areas for personal development, which will help them to develop strategies for successful teaching in the future.

Riveiro-Villodres, Blanco-Encomienda, and Latorre-Medina (2020) suggest extending the teaching of emotional intelligence to the entire spectrum of teacher education. Based on the synthesis of 41 educational programmes, Muñoz-Oliver, Gil-Madrona, and Gómez-Ramos (2022) also highlight the importance of teacher training. Emotionally competent teachers respond more effectively to the needs of their students, which influences student achievement and promotes teacher well-being as a positive feedback loop.

The main source of stress for children is related to school (in the form of grades, schoolwork and homework), followed by stress in the family and in relationships with peers. Lantieri (2012) explored how teachers could help children manage their emotions, become more resilient to stress, and improve their mental well-being and resilience in the face of adversity. The findings suggest that listening to music is the most effective coping strategy for children against stress, alongside being active and playing.

In addition to preparation and professional knowledge, teacher awareness also plays a key role in the success of the educational process. As highlighted earlier, the development of social competencies is a natural part of group music lessons, but it is the teacher's responsibility to consciously create the opportunity for this (Jacobi, 2012). A good teacher not only recognises them, but also uses opportunities for sensitisation that arise in random situations during the lesson.

CONCLUSION

To lead a fuller life, an individual needs emotional intelligence as well as intellectual intelligence. The latter is necessary not only for the development of social competencies but also has an impact on cognitive processes, and its development starts in childhood. The study of the effects of music on cognitive thinking and emotions is a recurrent field in the literature. It is clear, however, that the diversity of methods and the difficulties of objective measurement mean that the results obtained today are often contradictory. In our review, we have attempted to present the most recent literature that examines music education in the context of emotional education.

One of the many tasks of school education is the development of emotional intelligence, in which music education plays a prominent role. Research has shown that music education develops the ability to recognise and express emotions and adapt emotionally; it can also help prevent behavioural problems and difficulties in adjustment, maintain mental well-being and reduce the negative effects of stress. Participation in musical activities (especially in group sessions) contributes to the development of social competencies. Shared musical experiences help to navigate the relational system with others (Blasco-Magraner, Bernabe-Valero, Marín-Liébana, & Moret-Tatay, 2021) and to develop social awareness (Berman, 2003; Bamford & Davidson, 2019; Váradi, 2022). The use of music education tools in the teaching of general subjects has also been suggested to develop coping strategies (Fernández, Vázquez & Ferreiro, 2014; Uhlig, Jansen, & Scherder; 2016) and to prevent classroom conflicts (MacDolnald &, Wilbiks, 2022). Cuadrado's (2019) conclusions support the findings of previous studies that an increase in the number of music lessons in the curriculum led to increased social cohesion within the classroom, greater self-care, better social adjustment and more positive attitudes. The multiple positive effects of music education are evident for all age groups, from children to adults.

The positive effects of music education have been supported by a large body of scientific evidence over the past century, yet music education seems to be receiving less and less attention in education. Although music is not a panacea for depression, aggression, stress or social difficulties, it can be an effective tool in dealing with them. Music education can be a key to unlocking our emotional potential and developing emotional coping strategies that can significantly improve our quality of life.

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