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REVIEW ARTICLE

Why do We need Music-based Educational Therapy?

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ABSTRACT

Music-based educational therapy is crucial for addressing various cognitive, emotional, and developmental needs in individuals, particularly children and adolescents. This therapeutic approach harnesses the power of music to enhance learning, improve communication skills, regulate emotions, and promote social interaction. By incorporating musical elements such as rhythm, melody, and harmony into educational interventions, music-based therapy facilitates multisensory experiences that engage different areas of the brain, fostering holistic development. Moreover, music provides a non-verbal means of expression, making it accessible to individuals with communication difficulties or those on the autism spectrum. Additionally, music-based educational therapy offers a creative outlet for self-expression, boosting self-esteem and confidence in participants. Overall, integrating music into educational therapy not only enhances cognitive and emotional functioning but also cultivates a nurturing and inclusive environment for learning and growth.

Keywords: Cognitive development, Educational intervention, Emotional regulation, Music-based therapy, Social interaction

1. INTRODUCTION

The recent United Nations Children's Fund (originally known as the United Nations International Children's Emergency Fund; UNICEF) report providing a comprehensive statistical analysis reveals that approximately 240 million children worldwide live with disabilities. The report, released on November 9, 2021, highlights the significant challenges faced by these children, affecting various aspects of their well-being such as health, education, and protection. This is even more so for children with special educational needs.

Children with special educational needs face numerous challenges (see UNICEF, 2021): (1) they are 24 percent less likely to receive early stimulation and responsive care; (2) 42 percent less likely to acquire foundational reading and numeracy skills, and (3a) 25 percent more likely to suffer from wasting and (3b) 34 percent more likely to experience stunting. Additionally, they are also (4) 53 percent more likely to exhibit symptoms of acute respiratory infection, (5) 49 percent more likely to have never attended school, and (6) 47 percent more likely to be out of primary school, with higher percentages for lower and upper secondary school. Furthermore, they are (7) 51 percent more likely to report feeling unhappy, (8) 41 percent more likely to feel discriminated against, and (9) 32 percent more likely to face severe corporal punishment. Nevertheless, the experience of special educational needs varies significantly, indicating a spectrum of risks and outcomes influenced by factors such as the type of disability, geographical location, and access to services. Hence, it underscores the critical need for educational therapy through its properly designed assessment-based individualized targeted interventions to address these inequities (UNICEF, 2021).

2. WHAT IS EDUCATIONAL THERAPY?

Educational therapy has been defined by Chua and Xie (2024) as “a personalized and targeted approach to support children and adolescents with learning difficulties or special needs” (p. 7) and its focus is “on addressing academic challenges, fostering cognitive skills, and enhancing overall educational performance. The key components of educational therapy encompass a combination of assessment, intervention, and collaboration between educators, therapists, and parents” (Chua & Xie, 2024, p. 7). Even earlier, Radecki (1984) defined educational therapy as “an activity that ranges in practice from academic tutoring to psychotherapy. The qualifications, skills and techniques used by educational therapists seem so broad and varying that the profession seems difficult to define when compared to teaching or a particular school of psychotherapy” (p. 7). The definition of educational therapy was reviewed by Fogelson, Slucki and Werbach (1994) in their attempt to refine it in an article *The Parameters of Educational Therapy* published in a special issue of *The Educational Therapist*: “the population served by educational therapists is comprised of young children, adolescents and adults who are referred for the evaluation and remediation of learning problems. This includes, but is not limited to, dyslexia, poor school performance, test anxiety, reading/writing/language/math problems, attention deficit disorder, and school placement” (cited in Mosk, 2004, p. 4). Werbach (2002) refers educational therapy to “the clinical aspect of special education” that encompasses the assessment, intervention, and correction of learning difficulties. Educational therapists operate within various educational settings such as private practices, schools, hospitals, or public agencies.

However, since the founding of Association of Educational Therapists (AET) in 1978 (Chua & Chia, 2023a, 2023b, for the historical development of educational therapy), “the definition of educational therapy has undergone a series of changes” (Mosk, 2004, p. 4). “The term *educational therapist* has replaced the terms therapeutic tutor, psychopedagogist, special teacher, reinforcement therapist, clinical teacher, remedial therapist, language therapist, multidisciplinary teacher, and learning therapist as the person who remediates learning problems” (Werbach, Kornblau, & Slucki, 2010, p. 43).

In 1985, the AET Executive Committee approved and published a *Code of Ethics and Standards for Professional Practice*, which emphasizes the primary aim of educational therapy as optimizing learning and school adaptation, acknowledging the interconnection of emotional, behavioral, and learning challenges. The AET Code, which has been recently revised (see Marshall & Rotter, 2023, for the updates), delineates the role of an educational therapist within the educational realm, working with individuals experiencing learning disabilities and difficulties. Educational therapists are proficient in various areas, including formal and informal educational assessment, synthesizing information from various sources including specialists and parents, designing and implementing tailored remedial

programs for academic and behavioral issues, addressing social and emotional dimensions of learning challenges, fostering supportive relationships with individuals and stakeholders involved in their educational journey, and facilitating effective communication among individuals, families, schools, and professionals (AET, 1985).

In 1986, the World Health Organization (WHO) in its publication of the *International Classification of Diseases-9th Edition-Clinical Modification* (ICD-9-CM), officially recognized educational therapy under its Procedure Code 93.82 which includes (i) education of bed-bound children and (ii) special schooling for the handicapped (also see Chua & Chia, 2023a, 2023b, for further information).

Between 1986 and 2023, much has happened during the gradual process of establishing educational therapy as a legitimate treatment approach for students with special educational needs. For instance, Marshall and Rotter (2023) stated that “[E]ducational therapists *do not* diagnose and administer cognitive, intelligence, or psychological tests (unless otherwise qualified to do so).” This statement of *forbiddance* is not mentioned for the first time, but has been debated among the educational therapists before, with two camps, *for* and *against* (also see Chua & Singh, 2022; Fedo, 2011; Ficksman & Adelizzi, 2010; Marshall, 2019).

More recently, Schubert (2023) asserts that the process of academization in the field of educational therapy in Germany has begun, particularly with the introduction of university degrees (both undergraduate and post-graduate levels) in integrative educational therapy and psychology of learning. This introduction has led to significant changes in the professional landscape. Professionals with these degrees demonstrate a more sophisticated understanding of their roles, thanks to their comprehensive university education and the legitimization of their academic titles. Before these degree programs were established, the field of educational therapy lacked regulation, as already mentioned by Radecki (1984), leading to a variety of providers and the emergence of the “after-school market” phenomenon.

3. HOW EDUCATIONAL THERAPY CAN HELP CHILDREN WITH SPECIAL EDUCATIONAL NEEDS

Educational therapy can help children with special educational needs in the following ways:

1. Tailored Instruction (e.g., Kaganoff, 2019; Marshall & Rotter, 2023): Educational therapists design personalized learning plans tailored to each child's unique strengths and challenges, helping them overcome obstacles in their learning journey.
2. Skill Development (Ficksman & Adelizzi, 2010; Marshall & Rotter, 2023): By focusing on specific academic, social, and emotional skills, educational therapy enables children to build competencies at their own pace, fostering confidence and independence.
3. Addressing Learning Differences (Ficksman & Adelizzi, 2010; Marshall & Rotter, 2023): Educational therapists understand the diverse learning styles and needs of children with special educational needs, providing specialized techniques and strategies to accommodate these differences effectively.
4. Supporting Emotional Well-being (e.g., MacDonald, 2013; Marshall & Rotter, 2023): Children with special educational needs may face frustration, anxiety, or low self-esteem due to their learning challenges. Educational therapy offers a supportive environment where they can express themselves, develop coping mechanisms, and build resilience.
5. Collaboration and Advocacy (Ficksman & Adelizzi, 2010; Marshall & Rotter, 2023): Educational therapists collaborate with educators, parents, and other professionals to ensure that children receive comprehensive support. They also advocate for inclusive educational practices and resources that benefit children with special educational needs on a broader scale.

By providing targeted interventions and fostering a supportive environment, educational therapy can empower millions of children with special educational needs worldwide to reach their full potential in education and beyond.

4. MUSIC-BASED TREATMENT: AN EXTENSION FROM EDUCATIONAL THERAPY

According to Chua and Xie (2024), music-based treatment is not something new but has already been practiced by the ancient Greeks and Egyptians (who recognized the power of music to influence emotions and sought its curative powers) since the Classical Antiquity, which spanned from the 8th century BC to the 5th century AD, through the Middle Ages (when music-based treatment was employed in hospitals and monasteries) and until the 20th century, when formalized music-based treatment practices emerged. World War I and II saw music therapists using music to help wounded soldiers cope with physical and emotional trauma (see Chua & Xie, 2024, pp.16-19, for detail). The mid-20th century witnessed the establishment of academic programs in music therapy, solidifying its status as a therapeutic discipline. Research in the late 20th century provided scientific validation for the efficacy of music-based interventions. Today, the music-based treatment has evolved gradually to become a specialized field known as music therapy. However, it must not be confused with another form of music-based treatment approach known as music-based educational therapy.

Music-based educational therapy is an extension from educational therapy by incorporating music as a therapeutic tool in the educational process. While both approaches aim to address learning and developmental challenges, music-based educational therapy specifically utilizes music interventions to enhance cognitive, emotional, social, and behavioral skills. Music-based educational therapy is a therapeutic approach that utilizes music and musical activities to address various developmental, emotional, cognitive, and social challenges in children and adolescents with and without special educational needs (Chua & Xie, 2024; also see Yinger & Gooding, 2015, for more information). This form of therapy integrates the inherent qualities of music, such as rhythm, melody, and harmony, to achieve therapeutic goals and enhance the overall well-being of individuals (MacDonald, 2013).

According to Chua and Xie (2024), the key difference between music-based educational therapy and educational therapy lies in the incorporation of music within the therapeutic process. Music-based educational therapy integrates various musical elements such as rhythm, melody, harmony, and lyrics to achieve therapeutic goals, whereas traditional educational therapy may rely on more conventional methods such as tutoring, counseling, or behavioral interventions without a specific focus on music. Additionally, music-based educational therapy often involves trained music therapists who have expertise in both music and therapy techniques, whereas educational therapy may be conducted by educators or therapists with a different specialization.

5. WHAT IS MUSIC-BASED EDUCATIONAL THERAPY AND WHAT ARE ITS BENEFITS?

Music-based educational therapy is a form of therapy that utilizes music as a tool to address cognitive, emotional, and social needs (Chua & Xie, 2024). Chua and Xie (2024) have explained briefly their seven reasons, as elaborated in the next few paragraphs below, why this music-based treatment is beneficial to all students, with and without special educational needs.

Multisensory engagement (Johnels et al., 2023) is the first reason. Music engages multiple senses simultaneously, making it an effective tool for individuals with diverse learning styles or sensory processing differences. The second reason is enhanced memory retention (Ferreri & Verga, 2016; Wallace, 1994). The rhythmic patterns and melodies in music can help improve memory retention, making it easier for individuals to recall information and concepts learned during therapy sessions. Thirdly, emotional regulation is facilitated through music (Saarikallio & Baltazar, 2018). Music has the power to evoke emotions and can be used to help individuals identify, express, and regulate their emotions in a safe and supportive environment (Saarikallio & Baltazar, 2018). These are the first three very important benefits of music-based educational therapy for students with and without special educational needs.

In addition, the fourth reason is improved communication skills are fostered (Boster et al., 2021; Brand, E., & Bar-Gil, 2010; Passanisi et al., 2015). Music encourages verbal and nonverbal communication (Passanisi et al., 2015), allowing individuals to practice skills such as turn-taking, listening, and expressing themselves through song lyrics or musical improvisation. Social connection is the fifth reason (Loi et al., 2022). Group music-making activities promote social interaction and collaboration, fostering a sense of belonging and community among participants (Loi et al., 2022; Odena, 2023).

The sixth reason is that stress reduction is achieved (Knight & Rickard, 2001; Schwilling et al., 2015; Umbrello et al., 2019). Listening to or creating music can have a calming effect on the nervous system, reducing stress and anxiety levels in individuals undergoing therapy. Seventhly, motivation and engagement are also heightened (Martin, Collie, & Evans, 2015). Music-based activities are inherently enjoyable and can increase motivation and engagement in therapy sessions, particularly for individuals who may struggle with traditional forms of learning or communication.

Moreover, the eighth reason is that group music-making activities promote social interaction and collaboration, fostering a sense of belonging and community among participants (Bolger, 2015; Loi et al., 2022; Odena, 2023). These activities create opportunities for individuals to connect with others in a shared experience, enhancing interpersonal relationships and building a supportive environment. Through collaborative music-making, participants develop communication skills (Passanisi et al., 2015), empathy, and a sense of cohesion within the group (Odenda, 2023).

Next reason is listening to or creating music can have a calming effect on the nervous system, reducing stress and anxiety levels in individuals undergoing therapy (Knight & Rickard, 2001; Krout, 2007). Music serves as a powerful tool for relaxation and emotional regulation (Saarikallio & Baltazar, 2018), offering a therapeutic outlet for processing difficult emotions and experiences. Incorporating music into therapy sessions can help individuals manage their stress more effectively, promoting overall well-being and resilience (Krout, 2007; MacDonald, 2013).

Lastly, music-based activities are inherently enjoyable and can increase motivation and engagement in therapy sessions (Martin, Collie, & Evans, 2015), particularly for individuals who may struggle with traditional forms of learning or communication. The intrinsic pleasure of music motivates individuals to actively participate in therapeutic interventions, fostering a positive attitude towards treatment and goal attainment. Moreover, music transcends language and cultural barriers, making it accessible to a diverse range of individuals and enhancing inclusivity in therapy settings.

Overall, the music-based educational therapy offers a holistic approach to addressing various developmental, cognitive, and emotional needs, making it a valuable tool in educational and therapeutic settings (see Chua & Xie, 2024, for more detail).

5.1 What is Music Therapy?

Often music-based treatment is confused with music therapy, but both are not the same. As for music-based educational therapy, it is just one of the many forms of music-based treatment. It is not the same as music therapy.

Music therapy is a form of therapy that uses music to address physical, emotional, cognitive, and social needs of individuals (Chua & Xie, 2024). It is facilitated by a trained music therapist who uses various musical activities, such as listening, singing, playing instruments, and composing, to help improve overall well-being (MacDonald, 2013) and address specific therapeutic goals. It can be effective for people of all ages and with various conditions, including mental health disorders, developmental disabilities, neurological conditions, and chronic illnesses.

5.2 The Differences between Music Therapy and Music-based Educational Therapy

Though music therapy and music-based educational therapy share similarities, they have distinct differences. The author of this paper has identified 10 differences between the two forms of therapy as shown in Table 1 below:

Table 1. Differences between Music Therapy and Music-based Educational Therapy

Differences	Music Therapy	Music-based Educational Therapy
1. Purpose	It focuses on addressing emotional, cognitive, social, and physical needs through music.	It aims to enhance learning and academic skills through music.
2. Goal Setting	Goals are often individualized and centered around personal growth or rehabilitation.	Goals are usually targeted towards specific academic or developmental milestones.
3. Clinical Approach	It utilizes therapeutic techniques such as improvisation, songwriting, and listening exercises to achieve therapeutic outcomes.	It incorporates educational methodologies such as structured lessons, repetition, and assessment tools to facilitate learning.
4. Target Population	It can be beneficial for individuals of all ages with a wide range of cognitive, emotional, and physical abilities.	It primarily targets children and adolescents who may have learning disabilities, developmental delays, or other educational challenges.
5. Certification Requirements	Practitioners typically hold certification from accredited music therapy programs and adhere to established clinical standards.	Practitioners may have backgrounds in both music and education, with varying levels of formal certification or training.
6. Setting	It is often conducted in clinical or therapeutic settings such as hospitals, rehabilitation centers, or private practices.	It is implemented in educational environments such as schools, special education programs, or community centers.
7. Evaluation Methods	Assessment focuses on subjective improvements in emotional well-being, social interaction, and overall quality of life.	Assessment emphasizes academic progress, learning outcomes, and skill acquisition.
8. Collaboration	It collaborates with other healthcare or wellness professionals such as psychologists, speech therapists, and occupational therapists to offer or provide holistic care.	It collaborates with teachers, allied educators, school administrators, and parents to support academic goals and educational plans.
9. Session Structure	Sessions may be more flexible in structure, allowing for improvisation and exploration based on the client's needs.	Sessions are often structured with clear objectives, lesson plans, and defined learning outcomes.
10. Outcome Measurement	Outcomes are measured in terms of improvements in emotional expression, communication skills, coping mechanisms, and overall well-being.	Outcomes are measured in terms of academic progress, skill development, and achievement of educational goals.

In summary, both music therapy and music-based educational therapy utilize music as a therapeutic tool to address various psychological, emotional, cognitive, and physical needs. The main similarity between the two lies in their use of music to achieve therapeutic goals, such as improving communication (Passanisi et al., 2015), enhancing motor skills, reducing stress (Knight & Rickard, 2001; Krout, 2007), and promoting emotional well-being (MacDonald, 2013). However, the main difference lies in their primary focus and context. Music therapy primarily focuses on the therapeutic process itself,

utilizing music interventions led by a trained music therapist to address individualized goals within a therapeutic relationship. On the other hand, music-based educational therapy integrates music into educational settings, aiming to support academic and developmental goals while also addressing emotional and behavioral needs. While both approaches harness the power of music for healing and growth, music therapy is more clinically focused, while music-based educational therapy is more educationally oriented.

5.3 MUSIC-BASED EDUCATIONAL THERAPY AS SUPPLEMENTARY SUPPORT IN COUNSELING

The use of music in educational therapy also serves as valuable supplementary support in counseling (Gladding & Mazza, 1983). According to Chua and Xie (2024), this is attributed to three main factors (pp. 13-14): Firstly, music-based educational therapy offers a distinctive avenue for individuals to express and delve into their emotions without using words, offering a secure and imaginative outlet for therapeutic exploration. Secondly, incorporating music into counseling sessions can boost engagement and motivation, especially for those who find traditional talk therapy methods challenging or struggle to articulate themselves verbally. Lastly, power of music to trigger memories, emotions, and physical responses can facilitate profound self-reflection and understanding, making it an invaluable tool in assisting clients in navigating and processing their thoughts and emotions during counseling sessions.

Music-based educational therapy provides numerous advantages for both clients and therapists across diverse areas (see Chua & Xie, 2024, pp. 13-14, for detail). Initially, it serves as a platform for expressing emotions, enabling individuals to articulate intricate feelings non-verbally. This aids in exploring and processing emotions within a supportive setting. Additionally, music assists in reducing stress, effectively lowering anxiety levels (Knight & Rickard, 2001; Krout, 2007). By incorporating music into therapy sessions, relaxation and comfort are promoted, encouraging client involvement. Furthermore, music serves as a tool for improved communication (Boster et al., 2021; Brand & Bar-Gil, 2010; Passanisi et al., 2015), especially beneficial for those who struggle with verbal expression. Educational therapists utilize music to foster communication (Passanisi et al., 2015), establish rapport, and strengthen the therapeutic alliance (also see Odena, 2023, for further detail). Moreover, music-based activities stimulate cognitive functions such as memory and problem-solving, particularly advantageous for clients with cognitive impairments or neurological conditions. Additionally, music therapy fosters self-awareness and insight by exploring the meaning behind lyrics and the emotions evoked by musical compositions. This heightened self-awareness supports personal growth and development. Group music therapy sessions also encourage social connection, fostering a sense of community and belonging while enhancing social skills and interpersonal relationships (Bolger, 2015; Loi et al., 2022; Odena, 2023). Furthermore, music therapy encourages creative expression, empowering clients to explore new communication avenues and develop coping mechanisms (Passanisi et al., 2015).

In summary, music-based educational therapy complements traditional therapeutic approaches, enriching the counseling process by providing alternative pathways for self-expression (Kepule & Strode, 2020), emotional regulation (Saarikallio & Baltazar, 2018), and personal growth (Chua & Xie, 2024). It is particularly effective for clients who may not respond as well to verbal interventions (i.e., talk therapy) alone.

6. HARMONIZING EDUCATIONAL THERAPY THROUGH MUSIC: CHALLENGES AND OPPORTUNITIES

Music-based educational therapy offers valuable benefits for various students, both with and without special educational needs. However, it is essential to acknowledge certain limitations that may affect its universal efficacy. One primary challenge lies in the diverse nature of individual responses to music (Chua & Xie, 2024). While some students may find therapeutic value in music, others may not resonate with the same genres or styles, limiting the effectiveness of the music-based treatment.

Moreover, the accessibility and availability of musical instruments and trained educational therapists in music can be a barrier, especially in underfunded educational institutions. Students with special educational needs in resource-constrained environments may not have equal opportunities to engage in music-based educational therapy, creating disparities in its application.

For children with special educational needs, the effectiveness of music-based educational therapy can be influenced by the type and severity of their condition. Tailoring music interventions to address specific needs requires expertise, and not all educational settings may have access to specialized therapists qualified in music. Additionally, some issues related to special educational needs may hinder active participation in musical activities, affecting the overall impact of the music-based educational therapy. Furthermore, cultural and individual differences in musical preferences can be challenging to navigate. A therapy program heavily centered on a specific musical genre or cultural context may not resonate universally, potentially excluding some students with special educational needs.

While music-based educational therapy holds promise, Chua and Xie (2024) have argued that its universal application faces challenges related to individual preferences, resource constraints, accessibility, and the diversity of disabilities. Recognizing and addressing these limitations is crucial for maximizing the benefits of the music-based educational therapy across a broad spectrum of students with special educational needs.

7. LIMITATIONS OF MUSIC-BASED EDUCATIONAL THERAPY

Chua and Xie (2024) have identified 10 limitations of the music-based educational therapy for both typically developed students and students with special educational needs (pp. 15-16). These are briefly listed as follows:

1. *Individual Variability*: Music preferences and responses vary widely among individuals, making it challenging to create a one-size-fits-all approach in music-based educational therapy.
2. *Resource Dependence*: Access to musical instruments, technology, and trained therapists may be limited, hindering the implementation of music-based treatment in some educational settings.
3. *Cultural Sensitivity*: Music preferences are often influenced by cultural backgrounds, and the appropriateness of certain musical elements may vary. It is essential to ensure cultural sensitivity in the selection of music.
4. *Generalization Challenges*: The transfer of skills learned in music therapy to broader educational contexts can be difficult, requiring careful planning and coordination with traditional teaching methods.
5. *Attention and Engagement*: Maintaining the attention and engagement of all students during music-based treatment sessions can be challenging, particularly for those with attention-related disorders.
6. *Communication Barriers*: For students with language or communication disorders, expressing themselves through music may not necessarily address their core challenges in verbal communication.
7. *Limited Research Base*: While there is evidence supporting the benefits of music-based educational therapy, there is still a need for more extensive research, especially for specific populations and conditions.
8. *Staff Training*: Ensuring that educators and therapists are adequately trained in both music and educational therapy requires resources and ongoing professional development.
9. *Logistical Issues*: Scheduling and coordinating music therapy sessions within the school curriculum can be logistically challenging, potentially limiting the frequency and duration of sessions.
10. *Sensory Sensitivities*: Some students, particularly those with sensory processing disorders, may find certain musical elements overstimulating or uncomfortable, requiring careful consideration in educational therapy planning.

8. CONCLUSION

Music-based educational therapy stands as a vital tool for addressing diverse cognitive, emotional, and developmental needs in individuals, especially children and adolescents. Through its unique ability to enhance learning, improve communication skills, regulate emotions, and promote social interaction (Loi et al., 2022), music-based treatment offers a holistic approach to development. By harnessing the musical power of multisensory experiences and non-verbal expression, this therapeutic modality creates inclusive environments that foster self-expression (Kepule & Strode, 2020), boost self-esteem, and cultivate confidence. Integrating music into educational therapy not only enhances cognitive and emotional functioning but also nurtures an environment conducive to learning and growth.

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Author has declared that no competing interests exist.

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