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Positive Impact of Dalcroze Eurhythmics: A Systematic Review

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Abstract

Background: Originally developed as a method of music education, Dalcroze Eurhythmics has gradually expanded into an interdisciplinary therapeutic tool. Its effectiveness in both educational and therapeutic contexts has been recognized, showcasing its broad influence and adaptability. This dual application highlights its importance in advancing educational and health outcomes. Objective: To systematically review literature from two databases over a decade, and to provide an in-depth analysis and summary of the positive impacts generated by Dalcroze Eurhythmics. Data Sources: Articles published from January 2013 to January 2023, sourced from two sub-databases, Scopus and Web of Science, totaling 226 items. An additional three articles were selected from Google Scholar to complement the review.

Methods: This review employed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach to systematically assess the literature, ultimately selecting 21 studies for analysis. Data were extracted and reorganized using narrative synthesis. Results: Systematic reviews suggest that the positive effects of Dalcroze Eurhythmics can be categorized into two main themes: musical and non-musical, with each theme further divided into sub-themes. Conclusion:This systematic review highlights the widespread positive effects of Dalcroze Eurhythmics in various fields, showcasing its effectiveness in music education and therapy. By introducing interest and diversity, it opens new avenues for future research.

Keywords: Dalcroze Eurhythmics, Positive Influence, Music Aspects, Non-Musical Aspects

Introduction

Dalcroze Eurhythmics (DE), as an innovative method in music education, has not only achieved remarkable success in the field of traditional music education but also demonstrated its vast potential through its profound interdisciplinary applications in contemporary educational and therapeutic practices. DE is founded on three core components: Firstly,

solfège or aural training, where Émile Jaques-Dalcroze emphasized that students must learn complex listening skills and develop an "inner hearing." Secondly, improvisation skills are developed sequentially and utilized in various ways. Lastly, eurhythmics itself, the method's cornerstone, allows students to bypass overstimulated intellects, integrating rhythm into the body through movement before offering a purely intellectual interpretation of rhythm (Jaques-Dalcroze, 1930). These elements complement each other, providing a comprehensive and effective teaching approach. Initially proposed within a musical and pedagogical framework , DE serves as an educational tool across various aspects of music, including solfège, music theory, rhythm, instrumental practice, conducting, and performance. Its impact is also wide-ranging, finding application in music education at levels from kindergarten through to university (Juntunen, 2002; Johnson, 1993). Thus, the influence of DE in the realm of music has been well-documented.

In the current era of cross-disciplinary development, various fields have embraced music as an intervention in therapy. DE stands out as the longest-established music pedagogy. Several clinical trials in the realm of rehabilitation have now provided evidence that DE can positively impact postural stability and reduce the risk of falls in older adults (Stegall et al., 2017;Lazić, 2022). It has also garnered consistent recognition in the field of neurorehabilitation. (Altenmüller & Scholz, 2016)

As interdisciplinary research progresses, the application of DE has significantly extended beyond the boundaries of music education, demonstrating its unique value as a therapeutic tool in fields such as rehabilitation, special education, sociology, and even neurology. Clinical trials in the rehabilitation sector have shown that DE can improve postural stability in the elderly, thereby preventing falls (Stegall et al., 2017; Lazić, 2022) and has gained unanimous recognition in the field of neurological rehabilitation (Altenmüller & Scholz, 2016). The implementation of DE in community music is believed to enhance a sense of social belonging and identity (Juntunen, 2020). Furthermore, interviews with participants who have completed DE music classes suggest that DE enriches their spiritual life and unleashes spiritual potential (Habron & van der Merwe, 2020; Habron & Merwe, 2019). For children with ADHD and special educational needs, DE has been found to help improve motor skills, boost self-confidence, enhance social skills, and develop cognitive abilities among other benefits (Kivijärvi et al., 2017; Sutela et al., 2019; Sutela et al., 2016). Thus, it is evident that the impact of DE is both widespread and profound.

However, despite the proven positive effects of DE across multiple domains, there remains a lack of a systematic summary and evaluation within the academic community, limiting our ability to fully understand and further apply DE's potential. In light of this, the current study aims to fill this gap by employing a systematic evaluation approach to comprehensively collate and analyze the positive impacts of DE across various populations and settings. The goal is to uncover the potential contributions of DE's interdisciplinary applications in promoting individual and societal well-being, while also exploring its possibilities for innovation and practice in a broader range of fields. This research not only hopes to provide new insights into the theory and practice of DE but also offers professionals in the fields of music education and therapy a new perspective on exploring DE's interdisciplinary applications. By delving into the positive effects of DE, this study seeks to pave new paths for future educational and

therapeutic practices, contributing unique insights to the innovation and development of music education methodologies.

Methods

This study employs the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology, which includes utilizing resources for conducting systematic reviews—specifically Scopus and Web of Science—for searches. The keywords and related textual terms used in the search process were "Dalcroze," "rhythm therapy," "Dalcroze methods," and "Dalcroze Eurhythmics." Subsequently, the selected articles were subjected to eligibility and exclusion criteria, followed by the steps of the review process (identification, screening, eligibility), as well as data extraction and analysis.

Prisma

Systematic evaluation encompasses various components, and a crucial step is the literature search. It not only yields results but also provides essential data for subsequent analysis processes like screening, data extraction, and qualitative or quantitative synthesis (Rethlefsen et al., 2019). When conducting systematic evaluations, the widely used reporting guidelines are the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) statements (Liberati et al., 2009). The methodology in this paper offers a comprehensive overview of the impact of Dalcroze Eurhythmics in different fields.

Resources

The review relies on two major journal databases:

Web of Science (WoS): WoS, established in 1964 as the Science Citation Index, is one of the oldest and most authoritative research publication and citation databases. It provides comprehensive coverage of research from around the world, encompassing approximately 34,000 journals. WoS, maintained by Clarivate Analytics, offers over a century of archival and citation data and is ranked based on citations, papers, and citations per paper (Birkle et al., 2020).

Scopus: Scopus, introduced by Elsevier in 2004, is an abstract and citation database. It covers nearly 36,377 journals, including 34,346 peer-reviewed journals, spanning life sciences, social sciences, physical sciences, and health sciences. Scopus includes various source types, such as serials, journals, and trade journals (Shaffril et al., 2018).

Inclusion and Exclusion Criteria

The following conditions are met in this selection of papers:(1) In terms of time, since DE began to have different degrees of impact in various disciplines and is more widespread in the last ten years, articles published in the last ten years were selected, from 2013.01-2023.01, which is a sufficient time period to justify the topic of this research. (2) In terms of the type of literature, this time, we chose those with data; ethnographies as well as some articles with experimental viewpoints, leaving out some articles that are just theoretical discussions and analyses. (3) In order to avoid errors caused by translation, only English literature was selected at this time. (4) The topic of this study is the impacts generated by DE, so no reference is added to other topics about DE.

Systematic Review Process

This screening was carried out in four stages, firstly by conducting a search using keywords, which identified a total of 226 articles in the literature (WOS=137; Scopus=89), and then three more articles highly aligned with the article's theme were put into the database through Google Scholar. After the removal of duplicates and no DOIs, the authors screened the articles based on their titles and abstracts, after which the remaining articles n=40. These 40 articles were then screened for precision, and ultimately 21 articles were selected to meet the criteria. The process used to reduce and evaluate records is illustrated in the PRISMA flowchart in Figure 1.

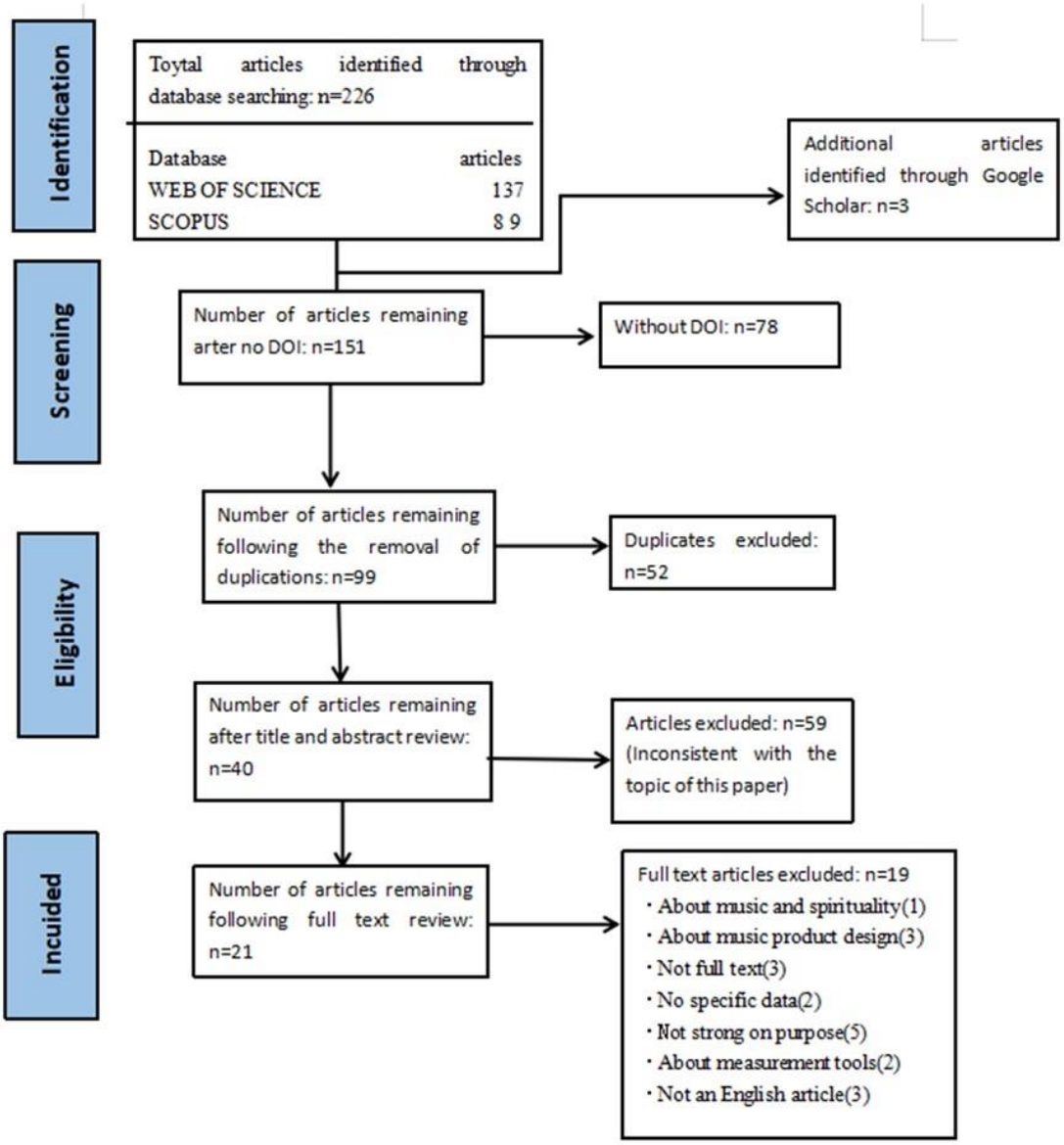

Figure 1. PRISMA Flowchart.

Quality Assessment

First of all, from the point of view of the source of article selection, this time from the WOS and Scopus two well-known search libraries for screening, increased the credibility of the paper. Secondly, this dissertation covers both qualitative and quantitative methods, and the research design takes into account sample selection and data collection, which makes the results reliable. Thirdly, each of the papers has a significant number of references to relevant literature and therefore provides a solid theoretical foundation for the research.

Result

The 21 articles in this selection were summarized by the authors at the end of the study design, sample, sample size, data collection methods, analysis techniques, and implications generated (Table 1).

Table 1
General Description of the Included Papers

Authors(s) and Years	Title	Sample	Sample size	Design	Data Collection	Data Analysis	Results
Emer,&Naranjo.(2014)	The use of body percussion in contemporary choral music	Composers	N=3	Qualitative	Analyzes and compares the motivations of three composers who incorporate body rhythms in choral singing	Summarization and analysis method	The use of body percussion in choirs improves the timbre of choir singing.
Greenhead,et al.(2015)	The touch of sound: Dalcroze Eurhythmics as a somatic practice	Teacher and student	One teacher and one student	Qualitative	Drawing on relevant literature; Teachers' and students' experiences.	Summarization and analysis method	1. Offers occasions for the tuning up the body-mind, and the tuning together of feeling and thinking. 2. Contribution to make to the field of somatic practices. 3. Promote smooth communication between the two.
Hars,et al.(2016)	Long-Term Exercise in Older Adults: 4-Year Outcomes of MusicBased Multitask Training	Aged≥65 years old people	First stage n=134 participants; After four-year n=52 participants (Intervention Group n=23;Control Group n=29)	Quantitative	Pre-test and post-test.Use GAITRite and CIR Systems Inc.	Stata version 12.1	1. Improve gait and balance that can Prevent fall. 2. Improvement of frailty in the elderly.
Sutela,et al.(2016)	Inclusive music education: The potential of the Dalcroze approach for students with special educational needs	Grade 8 and 9 special education needs students(aged 15-16 years old)	N=13	Qualitative	Field notes; Research diary and teacher review	Recursive Comparative Analysis	1. Develop and demonstrate their skills, musical knowledge and agency while experiencing music. 2. Provide a safe environment to express their feelings. 3. Students'

							self-awareness, self-confidence and motivation are enhanced through holistic learning experiences. 4. Enhanced interactivity with others.
Stegall,et al.(2017)	A 9-Week Jaques-Dalcroze Eurhythmics Intervention Improves Single and Dual-Task Gait Speed in Community-Dwelling Older People	Older people(aged from 60 to 80)	N=9 participants(8 women; 1 man)	Quantitative	Per-test and post-test.Use the 6-m timed walk test (6MTW);Sway meter	T-test; SPSS Statistics for Windows, version 21	Improvements in both single- and dual-task gait speed ,reduced risk of falls in older people.
Beaulieu,et al.(2017)	An action research approach to introduce Dalcroze Eurhythmics Method in a community of older adults as a promising strategy for fall prevention, injury recovery and socialization	Older people(aged from 65 to 94 years old)	One focus group n=15 members (13 women and 2 men) who participated in the first year, and the second group had n=8 members (7 women and one man) who participated regularly since the onset of the programme	Qualitative	Focus group discussion of 3 open-ended questions	Creswell's (2003) member-checking approach	1. Increase social interaction and promote intimacy; 2. provides physical and cognitive benefits in a social setting that encourages creative expression, games, and physical interaction with others. 3. Improved mobility, balance and health. 4. Improved cognitive functioning and greater confidence in mobility.
Herrera,&Vargas. (2019)	The effect of	Corporate employees	N=53(women n=26; men	Quantitative	The Profile of Mood States	2x2 (time x gender),	Dalcroze music

	one-session rhythm therapy on mood states in female and male corporate employees	(mean age 30.34±8.76 years old)	n=27)		questionnaire	Analysis of Variance (ANOVA), and Statistical Package for the Social Sciences, version 16.0	therapy helps relieve stress at workplace.
Park (2019)	Music therapy program for geriatric patients diagnosed with serious mental illness: A Dalcroze and Wellness Approach	Geriatric patients diagnosed with serious mental illness	N=5-7	Qualitative	The Quality of Life Enjoyment and Satisfaction Questionnaire – Short Form (Q-LES-Q-SF), and the Rosenberg Self-Esteem Scale (RSES)	/	1. Increased social interaction activities; 2. Increased self-esteem.
Admczyk,et al.(2020)	The Impact of 12-Week Jaques-Dalcroze Eurhythmics Programme on the Dynamic Agility in Single- Dual-Task Conditions in Older Women: A Randomized Controlled Trial	Older women (69.9±3.2)years old.	N=73 Inervention group N=34;Control group N=39	Quantitative	Per-test and post-test.Use the Timed Up and Go (TUG) test	Mann-Whitney U test; ANOVA; STATISTICA 10	Improvement of the stability of the attitude.
Sutela,et al.(2020)	Applying music-and-movement to promote agency development in music education: a case study in a	15-16 years old special education needs students	N=13	Qualitative	Video-recordings of the lessons, a research diary, and interviews with teachers, teaching assistants, a therapist, and a specialist of special education.	Analysis was mainly based on video data and the first author's research diary	1. Increased group cohesion and social affinity overall. 2. The possibility of acquiring concretized musical knowledge and the development

	special school						of skills and creativity. 3. build self-confidence and a sense of self.
Fischbacher,et al.(2020)	Safety and feasibility of a Dalcroze eurhythmics and a simple home exercise program among older adults with mild cognitive impairment (MCI) or mild dementia: the MOVE for your MIND pilot trial	women and men age 65 years and older with MCI or early dementia	N=18 (Dalcroze eurhythmics group n=7; a simple home exercise program (SHEP) n=5; non-exercise control group n=6)	Quantitative	GAITRite;Montreal Cognitive Assessment (MoCA)	Fishcher; ANOVA; Kruskal-Wallis; SAS9.4	Improved Gait Stability and Cognition in Older Adults with MCI or Mid Dementia
Ridout,&Habron. (2020)	Three Flute Players' Lived Experiences of Dalcroze Eurhythmics in Preparing Contemporary Music for Performance	Flute players	N=3	Qualitative	audio-recorded semi-structured interviews	Summarized into eight subjects for analysis	1. Can be useful in preparing music, particularly contemporary music, for performance. 2. Enables the performer to create a stronger connection with the music and the audience during the performance. 3. Improved playing skills.
Sutela,et al.(2020)	Developing agency through music and movement	Special educational needs students	N=13(8 boys; 5 girls)	Qualitative	Video recordings of the lessons, and interviews with students, teachers, and teaching assistants	Qualitative analysis software (NVivo)	1. students' own decision-making. 2. interaction with others. 3. expression of emotions and initiative. 4. Improvement of performance

							skills
Juntunen(2020)	Embodied Learning Through and for Collaborative Multimodal Composing: A Case in a Finnish Lower Secondary Music Classroom	junior high students	N=18(6 boys, 12 girls)	Qualitative	semi-structured student interviews; close observations of classroom activities recorded;each student's reflective self-assessment statement;researcher's reflections, thoughts, and interpretations	Theoretical reading as well as data-driven analysis	1. Reinforcing the mind-body unity 2. Enhanced specific knowledge of music (required for composition). 3. Enhanced use of a combination of senses for learning, as well as a variety of modes of expression. 4.Promoting interaction and collaboration throughout the process. 5.Approaching composition through explorative improvisation exercises. 6. Nurturing positive experiences and social cohesion.
Pretorius,&Merwe .(2020)	Learning Collectively in a South African High School Choir Community of Musical Practice through Dalcroze-Inspired Activities	High school stduents	N=20 aged between 13 and 16 years old	Qualitative	field notes on the rehearsals, semi-structured interviews, video recordings of the weekly rehearsals	model of Noticing, Collecting and Thinking (NCT) about the data was used to reflect constantly on the data segments and the relationship between them.	1. Improve singing skills of the choir. 2. Fostered a sense of belonging among choristers. 3. Built self-confidence of members. 4. Improving the attention of members.
Ismail,et al.(2020)	Learning music through rhythmics	Primary school students	N=35 (18 boys; 17 girls)	Qualitative	Through in-depth interview	Through group observations and in-depth interview	Improve students' rhythm and singing skills through fun music lessons.

	movement in Malaysia					s with experts	
Reyes,et al.(2020)	Methods of musical education for the development of the musical memory of music students	Students(age from 17 to 24)	N=41(Experimental group n=20; contorl group n=21)	Quantitative	Per-test, post-test and Field diary.	Use surveys to analyze the data collected	Improve memorization of musical rhythms.
Ismail (2022)	An Active Learning Study: Mastering Music Coordination Skills through Kompang and Dalcroze Eurhythmics among Primary Students	Primary students	N=70 (39 boys; 31 girls);(experimental group n=35; control group n=35)	Quantitative	Pre-test and post-testUse the Associated Board of The Royal School of Music (ABRSM) and Standard Performance Document (Dokumen Standard Prestasi) used by the Malaysian Ministry of Education, including the grade system used widely in Malaysian schools.	SPSS version23, and Shapiro-Wilks test	1. Improve of students' musical skills. 2. Improve discipline and cooperation among students. 3. Improve social skill 4. Save teachers' time and energy. 5. Nurture a spirit of striving, self-discipline, and self-confidence among students.
Daly (2022)	Creativity, autonomy and Dalcroze eurhythmics: An arts practice exploration	the writer himself	N=1	Qualitative	all rehearsals and performances were documented, interviews and focus groups	Mind mapping software (Inspiration version 9)	1. Increases the performer's stage presence 2. Improve memory. 3. encourage students to make good choices.
Adamczyk,et al.(2022)	Effects of Jaques–Dalcroze eurhythmics program on postural stability in elderly women	Elderly women	N=59(69.5±3.29 years old) (Intervention group n=26; control group n=33)	Quantitative	Pre-test and post-test. Use the control the displacement of the body's centre of pressure (COP).	Statistica 13.4	Improve the smoothness of torso movements,improve the performance of ADLs and reduce the risk of falls
Daly(2022)	Embodied	The author himself	N=1	Mix-method	used journaling,	Firstly,use thematic	1.Improved preparation

	pedagogy for strings: preparing and performing Ysaÿe's solo violin sonata no. 2 op. 27 a journey of unexpected discoveries				poetry and other forms of artistic expression alongside data gathered from others, through interviews, focus groups and by inviting written inputs.	analysis. And then used mind mapping software (Inspiration version 9).	and practice for performers. 2.Changes in the audience experience.

Result

The comment generated 11 subtopics across two main themes, as detailed in Table 2.

Table 2
Impact Summary

	Musical influences			**Non-musical influences**							
	Performance skills	Musical literacy and fundamentals	Musical Memory	Social skills	Mind-body unity	Postural stability and balance	Self-confidence	cognitive ability	expressive power	Work pressure	Others
Emer,&Naranjo.(2014)	√										
Greenhead,et al.(2015)				√	√						√
Hars,et al.(2016)						√					√
Sutela,et al.(2016)		√		√			√		√		
Stegall,et al.(2017)						√					
Beaulieu,et al.(2017)				√		√	√	√	√		
Herrera,&Vargas.(2019)										√	
Park (2019)				√			√				
Admczyk,et al.(2020)						√					
Sutela,et al.(2020)		√		√			√				
Fischbacher,et al.(2020)						√		√			

Ridout,&Habron.(2020)	√									√
Sutela,et al.(2020)	√			√					√	√
Juntunen(2020)		√		√	√				√	
Pretorius,&Merwe .(2020)	√						√			√
Ismail,et al.(2020)	√	√								
Reyes,et al.(2020)			√							
Lsmail (2022)	√			√			√			√
Daly (2022)	√		√							
Adamczyk,et al.(2022)						√				
Daly(2022)	√									√

Study Characteristic

In terms of methodology, the research encompasses twelve qualitative studies, including works by Greenhead et al. (2015), Sutela et al. (2016, 2020), Juntunen (2020), Pretorius & Merwe (2020), Daly (2022), Beaulieu et al. (2017), Park (2019), Ridout & Habron (2020), Ismail et al. (2020), and Emer & Naranjo (2014). There are nine quantitative studies by Hars et al. (2016), Stegall et al. (2017), Adamczyk et al. (2020, 2022), Fischbacher et al. (2020), Reyes et al. (2020), Ismail (2022), and Herrera & Vargas (2019), alongside one mixed-methods study by Daly (2022).

Chronologically, the distribution of studies includes one from 2014 (Emer & Naranjo), one from 2015 (Greenhead et al.), two from 2016 (Hars et al.; Sutela et al.), two from 2017 (Stegall et al.; Beaulieu et al.) and 2019 (Herrera & Vargas; Park) each, nine from 2020 (Adamczyk et al.; Sutela et al.; Fischbacher et al.; Ridout & Habron; Juntunen; Pretorius & Merwe; Ismail et al.; Reyes et al.), and four from 2022 (Ismail; Daly; Adamczyk et al.)

The majority of participants were students, teachers, and elderly individuals, with sample sizes ranging from a single participant to seventy-three.

Musical Impacts

DE is a revolutionary method of music education founded by Émile Jaques-Dalcroze, designed to deepen the experience and understanding of music through bodily movement. Initially, DE research focused on its application in teaching musical knowledge, aiming to enrich the experience and comprehension of musical events or concepts through physical movement, either before or concurrently with the development of instrumental or vocal skills (Juntunen, 2002). This review seeks to explore the three core impacts of DE in the field of music: performance skills (eight papers), musical theory knowledge (five papers), and musical memory (two papers).

Performance Skill

This section analyzes DE in music education and its impact on learning outcomes, highlighting

its positive effects across various educational settings. Research shows significant benefits of DE in choirs, music classrooms, and special needs education.

In choirs, DE's emphasis on physical movement as central to music education has led to enhanced vocal quality and overall performance levels, making music more enjoyable and aesthetically pleasing for students (Emer & Naranjo, 2014; Pretorius & Merwe, 2020).

In classroom settings, a case study in Malaysian primary schools by Ismail et al. (2020) found DE not only made lessons more engaging but also significantly improved students' abilities to sing and play instruments simultaneously. Further research by Ismail (2022) highlighted DE's effectiveness in coordinating singing while playing the Kompang, showcasing its advantages over traditional teaching methods.

For professional performers, DE greatly enhances specific preparation and practice, allowing for optimal performance. It not only boosts performers' skills but also enriches the teaching process and student performance experience (Daly, 2022; Ridout & Habron, 2020).

Musical literacy and fundamentals

DE not only significantly contributes to the development of performance skills but also plays a crucial role in the learning of musical theory knowledge. In this study, musical theory knowledge primarily refers to the abilities in sight-singing and rhythm. For students with SNE, the DE teaching method provides an opportunity to learn musical knowledge (Sutela et al., 2016; Sutela et al., 2020). Furthermore, Juntunen (2020) demonstrated that after 15 DE lessons at a school in Finland, this method significantly enhanced students' concrete understanding of musical knowledge and improved their composition skills. Similarly, in a primary school in Malaysia, it was observed that DE could assist students in mastering nearly all musical concepts (Ismail et al., 2020).

Musical Memory

Music memory is a key element in learning and performing music. Researchers, by comparing the application of three methods: Dalcroze, LenMus, and Color Sound Relation, have shown that Dalcroze is significantly effective in improving rhythmic music memory (Reyes et al., 2020). In the process of teaching, Daly (2022) suggests that DE can greatly enhance their memory abilities.

Non-Musical Influences

As academics continue to innovate and develop, DE has begun to emerge as an intervention in a variety of fields and has had a positive impact in many ways. Therefore, the following eight non-musical aspects of impact are the main focus of this discussion: (1) Social skills were mentioned in eight articles; (2) postural stability and balance in six; (3) Mind-body unity in two; (4) self-confidence in six; (5) expressive power in four; (6) cognitive ability in two; (7) work pressure in one; and (8) Others in seven.

Social Skills

Social skills, crucial for communication and interaction, can be enhanced through music, a powerful communication medium. DE, in particular, has been effective in improving these skills. Elderly individuals participating in DE activities showed increased social interactions,

fostering closer relationships (Beaulieu et al., 2017; Park, 2019). Studies also reveal that DE in music classes promotes group cohesion and social warmth, especially among students with SNE through synchronized movements (Sutela et al., 2020; Juntunen, 2020). Furthermore, Ismail (2022) found that DE improves cooperation, enhances social abilities, and reduces exclusion in music activities among students.

Postural Stability and Balance

As an intervention method, the application of DE among the elderly population has garnered widespread attention. Numerous studies have indicated that DE interventions not only enhance the physical balance of older adults but also improve their spatial cognitive abilities, which are key factors in reducing the risk of falls. By integrating music and movement, the DE approach stimulates older adults' internal perception of balance and coordination, leading to significant progress in maintaining and improving postural stability. (Hars et al., 2016; Stegall et al., 2017; Beaulieu et al., 2017; Adamczyk et al., 2020; Fischbacher et al., 2020; Adamczyk et al., 2022)

Mind-Body Unity

As an intervention method, the application of DE among the elderly population has garnered widespread attention. Numerous studies have indicated that DE interventions not only enhance the physical balance of older adults but also improve their spatial cognitive abilities, which are key factors in reducing the risk of falls. By integrating music and movement, the DE approach stimulates older adults' internal perception of balance and coordination, leading to significant progress in maintaining and improving postural stability. (Hars et al., 2016; Stegall et al., 2017; Beaulieu et al., 2017; Adamczyk et al., 2020; Fischbacher et al., 2020; Adamczyk et al., 2022)

Self-Confidence

Confidence is essential for personal growth, and research shows that completing certain activities can boost self-confidence significantly (Snyder & Lopez, 2019). DE has been effective in increasing confidence across various groups. For special needs students, DE enhances communication willingness, self-awareness, and confidence (Sutela et al., 2016; Sutela et al., 2020). In the elderly, it not only improves physical mobility but also self-confidence (Beaulieu et al., 2017; Park, 2019). In choirs, DE boosts singing skills, self-efficacy, and group cohesion (Pretorius & Merwe, 2020). Additionally, DE in elementary music classrooms promotes musical skill enhancement and fosters perseverance, self-discipline, and confidence. (Ismail, 2022)

Expressive power

This study focuses on non-verbal expression, which is a form of communication where individuals convey emotions and thoughts through body language, physical gestures, and other non-verbal means (Can & Kuruoglu, 2021). DE as a method of music education, has been proven to provide a supportive environment for SEN (Special Educational Needs) students, where they can more freely express their emotions (Sutela et al., 2016; Sutela et al., 2020). Moreover, research targeting the elderly population also indicates that the DE method not only fosters enhanced interpersonal interactions but also stimulates creative expression among older adults in social settings (Beaulieu et al., 2017). Juntunen (2020) further notes that DE enables students to engage in non-verbal expression in a richer and more creative

manner through the integrated use of the senses.

Cognitive Ability

Cognitive skills, also known as cognitive functions or abilities, are the core skills required by the brain to acquire knowledge, process information, and reason logically (Kim, 2014). DE as an intervention measure, has been shown to effectively enhance the cognitive abilities of the elderly (Fischbacher et al., 2020; Beaulieu et al., 2017). Particularly, the study by Beaulieu et al. (2017) highlighted the positive impact of DE on patients with mild cognitive impairment and dementia, noting that DE activities could slow down or even prevent further decline in cognitive abilities. These findings not only reveal the effectiveness of DE in enhancing cognitive functions among older adults but also offer new strategies for the prevention and intervention of cognitive disorders.

Work Pressure

In the exploration of managing work-related stress, although research is relatively scarce, the study conducted by Herrera & Vargas (2019) presents a representative case that showcases the potential utility of DE in this area. This study undertook interventional research on employees of a certain company, aiming to evaluate the effectiveness of DE as a therapeutic means to alleviate work-related stress. The findings revealed that employees participating in DE therapy showed significant improvements in symptoms such as tension, depression, anger, and fatigue. These results suggest that DE can not only serve as an effective therapeutic measure for relieving work stress but also can have a positive impact on enhancing the overall well-being of employees.

Others

This study investigates the wide-ranging effects of DE beyond music, showing enhancements in physical abilities, elderly health, artist-audience interactions, decision-making in SEN students, and choir cohesion. These results underscore DE's versatility as a tool for fostering physical and mental well-being, social engagement, and educational achievement.

Significantly, DE has improved elderly posture and balance, increasing activity levels and reducing frailty (Hars et al., 2016). It also provides artists with innovative ways for expression, deepening audience connections (Daly, 2022).

In educational settings, DE not only conserves teacher resources but also bolsters student focus and expressiveness, underlining its role in developing non-verbal and social skills (Ismail, 2022).

DE's influence extends across rehabilitation, psychology, and sociology, affirming its efficacy in improving health, emotional stability, and social interaction. Its multidisciplinary use demonstrates DE's comprehensive advantages and its crucial role in holistic development.

Discussion

Current educational practices and the application of DE have expanded across a broad range of fields, encompassing music, drama, dance, film, physical education, special education, therapeutics, and gerontology (Habron, 2014). Therefore, this systematic review aims to delve into the positive impacts generated by DE and how these influences transcend musical and

non-musical domains, manifesting in various aspects of our lives. Throughout our review process, we specifically identified two main themes: impacts related to music and those related to non-music, further subdivided into eleven specific subthemes. The significance of this discovery lies in the fact that, despite our systematic review encompassing multiple countries, cultural backgrounds, and different subjects of study, the universal emergence of these themes suggests that the positive impacts of DE cross the boundaries of age and social roles. This universality underscores the vital role DE plays in contemporary society.

Music Impacts

In exploring the positive impacts of DE on musical aspects, we particularly focused on three core areas: performance skills, musical theory knowledge, and musical memory. Numerous studies have shown that employing DE teaching strategies can lead to significant improvements in these areas, both in teachers' instruction and learners' personal practice. However, a more nuanced analysis is required to assess these positive effects, ensuring our conclusions are both accurate and fair.

Firstly, regarding performance skills, research indicates that the DE teaching method can effectively shift learners' excessive focus on pitch accuracy, rhythm, and playing techniques, introducing bodily movement to enhance performance outcomes (Anuar & Ismail, 2021; Butler, 2021; Daley, 2013). However, these studies primarily utilized structured or semi-structured interview methods, whose results might be significantly influenced by subjective biases and lack analysis from a third-party perspective, thus raising questions about the fairness and universal applicability of these conclusions.

Secondly, in the domain of musical theory knowledge, DE teaching methods through improvisation have increased learners' awareness of different pitches and rhythms, particularly supporting the effectiveness of DE in enhancing musical knowledge among Special Needs Education (SNE) learners (Sutela et al., 2016; Sutela et al., 2020). Yet, these studies failed to report the specific magnitude of impact effects, making it challenging to effectively compare them with other types of educational interventions.

Lastly, regarding musical memory, Reyes et al. (2020) revealed the advantages of DE over other intervention methods through a controlled experimental group approach. To more accurately assess improvements in musical memory, it is recommended to use quantitative measurement tools, such as designing music knowledge tests of varying difficulty levels and adopting explicit scoring criteria (e.g., complete recollection scores 2 points, vague memory scores 1 point, complete forgetfulness scores 0 points). By comparing the score differences before and after the test, the improvement in musical memory can be evaluated more objectively. This approach can provide more persuasive evidence to support the application value of DE in music education.

Non-musical Impacts

Although DE was initially proposed as a method of music education aimed at promoting musicality development through musical activities, subsequent research has gradually revealed its impact on non-musical aspects. This literature review not only examines the influence of DE on musical abilities but also delves into its potential value in non-musical domains. Specifically, the review explores the following eight non-musical aspects.

Firstly, it is observed that the majority of related studies have small sample sizes, limiting the general applicability of their conclusions. Most studies employ qualitative methods and are influenced by factors such as educational background, cultural differences, and the varying levels of understanding of DE among therapists or teachers, affecting the universality of the research.

Secondly, the populations most studied are the elderly and children with SNE. Regarding the elderly, studies on postural stability and balance (Hars et al., 2016; Stegall et al., 2017; Beaulieu et al., 2017; Admczyk et al., 2020; Fischbacher et al., 2020; Adamczyk et al., 2022) utilized relevant scales for pre-tests and post-tests comparisons, providing data-supported and more compelling conclusions. Cognitive ability in the elderly is also a focal point of current research, especially the findings by Beaulieu et al. (2017) that improvements in motor abilities can positively affect cognitive functions. As for interventions with SNE students, multifaceted research conclusions have been drawn, such as enhancements in self-confidence, expressive abilities, social skills, and decision-making abilities (Sutela et al., 2016; Sutela et al., 2020). Although DE has been observed to improve multiple abilities in SNE students, these are observational findings lacking substantive evidence. Planning future intervention studies could benefit from measuring specific content across multiple dimensions to better understand the effects of interventions. Additionally, due to the unique pathological characteristics of each SNE student, interventions should focus on both holistic and individualized teaching approaches.

Lastly, from other perspectives, current research trends such as reducing work stress (Herrera & Vargas, 2019), team writing (Pretorius & Merwe, 2020), and saving teachers' energy and time (Ismail, 2022) indicate new areas of study. These new research directions suggest that future studies will require more resources and effort.

Strengths and limitations

This systematic literature review marks the first comprehensive examination of the positive impacts generated by DE, with its strengths lying in the utilization of leading databases and a systematic screening process to ensure the relevance and quality of the literature. Additionally, by summarizing key influencing factors, this study provides significant insights into the field. Nonetheless, the limitations of the research should be acknowledged. Our search was confined to two databases, potentially leading to incomplete coverage of the literature. Furthermore, by limiting the language to English, we may have overlooked significant studies from non-English-speaking regions, thereby constraining the breadth and diversity of our review.

Implication

The unique pedagogical approach of DE is not only applicable to music education but also offers innovative solutions for fields such as special education and elderly care. The interdisciplinary application potential of DE suggests that new therapeutic and educational strategies can be developed through the integration of music with other fields, such as psychology and rehabilitation. This diversified application further underscores the flexibility and broad applicability of the DE method in practical settings. Through integrative analysis, this study reveals new trends in the application of DE in non-musical fields, providing fresh

perspectives for the teaching and therapeutic applications of DE. In particular, this research comprehensively reviews for the first time the application of DE in special education, gerontology, and the workplace, showcasing its potential in interdisciplinary collaboration and paving new pathways for future research and practice.

Future Research

In light of the conclusions drawn above, the following suggestions are offered for future research: Given the wide range of subjects for Dalcroze Eurythmics (DE) interventions, future studies should aim to increase sample sizes to ensure the inclusion of a diverse population. This would not only enhance the universality of the research findings but also help reveal the specific impacts of DE on different groups. For the general population, ensuring the representativeness of the sample is crucial for more accurately reflecting the universal effects of the intervention.

Secondly, in qualitative research, researchers should maintain unique insights and examine the effects of interventions from an observer's perspective. Furthermore, supplementing with a third-party perspective can enhance the authenticity of the conclusions. For some studies, it is recommended to use professional measurement scales that include multiple dimensions of content, which can capture changes in abilities and the effects of interventions more finely.

Lastly, researchers from multiple disciplines, including musicology, psychology, and rehabilitation, are encouraged to collaborate. This multidisciplinary approach allows for a deeper exploration of the comprehensive benefits of DE. Interdisciplinary collaboration not only enhances the depth and breadth of research but also promotes a close integration of theory and practice.

Conclusion

This systematic literature review of the impacts generated by the Dalcroze Eurythmics (DE) method, reveals the positive changes it has triggered across multiple disciplinary fields. The influence of DE extends beyond music education, with its profound effects reaching into significant areas such as rehabilitation, psychology, and human development. Moreover, its positive contributions are not limited to student populations but also encompass a diverse range of beneficiaries including the elderly, children with special educational needs, and professionals in the workplace. As research on DE continues to deepen, it has become a valuable resource in teaching and intervention processes, offering effective methodologies for further investigation. Looking ahead, the teaching philosophy and practical methods of DE are expected to ignite new innovative sparks between the academic community and various fields, securing a place not only in scholarly research but also in clinical applications, aiding a broader spectrum of individuals and generating multidimensional positive outcomes.

Contribution

This systematic review makes significant contributions to the theoretical understanding and practical applications of Dalcroze Eurhythmics, particularly in the field of music education. Theoretically, this study organizes and synthesizes the positive impacts of Dalcroze Eurhythmics into musical and non-musical domains, offering a structured framework that bridges its educational and therapeutic benefits. Within music education, this review highlights how Dalcroze Eurhythmics fosters a holistic approach to learning by integrating

physical movement, emotional expression, and cognitive engagement. By grounding musical concepts in physical experience, this method enriches the learning process, making abstract musical ideas more accessible and fostering deeper understanding and retention among learners. The findings also underscore the pedagogical flexibility of Dalcroze Eurhythmics, demonstrating its adaptability across different age groups, skill levels, and cultural contexts, which broadens its relevance and applicability in modern music education.

In terms of contextual contributions, this study emphasizes the transformative role of Dalcroze Eurhythmics in reshaping traditional approaches to music education. By focusing on experiential learning and creative expression, this method encourages active participation and nurtures intrinsic motivation, which are critical for sustaining interest and engagement in music education. Furthermore, the review identifies its unique contributions to fostering essential skills such as rhythmic accuracy, aural sensitivity, and musicality, all of which are foundational for comprehensive music training. Beyond technical skill development, Dalcroze Eurhythmics also supports broader educational outcomes, including enhanced social interaction, emotional regulation, and self-confidence, making it a valuable tool for holistic student development.

By contextualizing these contributions within both formal and informal educational settings, this review highlights the potential of Dalcroze Eurhythmics to redefine the goals and methods of music education. Its emphasis on embodied learning and creativity aligns with contemporary educational paradigms, advocating for its broader adoption in curricula worldwide. Ultimately, this study positions Dalcroze Eurhythmics as a cornerstone in advancing music education, bridging the gap between theory and practice, and offering new directions for research and innovation in the field.

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