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Research on the Influence of Music Teaching on Inclusive Education in Primary Schools

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Abstract: *Inclusive education advocates that education should meet the needs of all students and pay attention to each learner's physical and emotional conditions. Music education is significant to children's physical and mental development and potential development. In recent years, different studies have gradually realized the importance of music education to children. Music classes are seen as the preferred option for inclusive placement of students with disabilities, and participation in school music activities turns the spotlight on the similarities between students with disabilities and those without disabilities, with more attention focused on the contribution of music, thus reducing the challenge of focusing on physical impairment. This article discusses the affordances and limitations of different instructional strategies in inclusive music education, which instructional adaptations are most effective in music classrooms, the challenges music teacher educators face in a diverse environment, and efforts to define and teach competencies to cater to the educational requirements of students with exceptionalities.*

Keywords: *inclusive education; music teaching; primary school*

1. Introduction

The concept of inclusive education refers to an educational methodology that advocates for the integration of all students into a school environment where they are regarded as equally important members of the student body. Inclusive education should respect commensurate access to the quality of education for all learners (Allan, 2014)[1]. The provision of inclusive education is widely acknowledged as a fundamental entitlement of all individuals and serves as a cornerstone for fostering a just and impartial society (European Agency for Development in Special Needs Education, 2010)[2]. The concept of inclusive education illustrates the imperative to furnish a superior educational experience for every student, augmenting the methodologies which promote complete engagement. The concept of inclusive education is regarded as an ongoing process and a set of principles that presents a formidable obstacle to any instance of marginalization (Ainscow 1998[3]; Sapon-Shevin, 2003[4]). UNESCO (2009) emphasises the fact that learners with disabilities have the right to inclusive education, creating an education system that treats all people equally. An analysis by Oh-Young and Filler (2015) in a study concluded that learners with disabilities had better performance on learning outcomes in inclusive education settings. Hehir et al. (2016) consistent evidence indicates that inclusive education can result in substantial short- and long-term advantages for students with and without disabilities. Learners educated in inclusive environments have superior academic achievement; segregated educational environments can hinder social inclusion (Flexer et al., 2011)[5]. Lubet presents the idea that human beings have improved their chances of living forever because of the ability to function collectively, that is inclusively (2011). Consequently, the greater our inclusivity as a species, the greater will be our level of evolution.

Many erudite scholars from various fields have confirmed that music is ubiquitous and that music art is not only regarded as an indispensable aural pleasure but also goes beyond its obvious function of providing satisfaction for the senses and the soul. Charles Darwin theorized that music was omnipresent, indicating that the acquisition of human musical abilities facilitated the reproduction of the species (Darwin 1871, 334)[6], An ethnomusicologist Bruno Nettl also contributes to the research on the pervasiveness of music (2000). A study of the ubiquity of music, also made by an ethnomusicologist *In The Origin of Music*, claims that music's evolutionary function expresses greater diversity. British paleoanthropologist Steven Mithen (2006)[7] also provides evidence that the use of music can be interpreted as having an educational aspect to learning. For example, the tones, timbres and rhythms of music and other performances of communication are translated into information of human relevance and value. There is a large literature review by Burnaford (2007)[8] showing the relevance of music incorporation in academic performance to improve academic achievement. Music classes are seen as the

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preferred option for inclusive placement of students with disabilities (VanWeelden & Whipple, 2013)[9], and participation in school music activities turn the spotlight on the similarities between students with disabilities and those without disabilities, with more attention focused on the contribution of music thus reducing the challenge of focusing on physical impairment. People with disabilities have a range of options available to them for making sense of the environment around them, and music mixed with movement and phonation can build a whole conducive to that end. The vast majority of these uses of music may be construed in an educational light, with each use illustrative of a different component of the learning process. As music is an essential human ability and a central life activity Nils Lennart Wallin et al., (2000)[10] the ability to listen music is a fundamental human right. rights are also the rights of people with disabilities, given that participating in musical activities is both an educational and a social experience. It holds a crucial position and, in potentially unanticipated manners, presents a compelling argument for the implementation of inclusive education.

This essay review of relevant literature aims to focus on a critical exploration of inclusive music education in primary school settings, with a focus on the affordances and limitations of different strategies for Developmental coordination disorders, Autism Spectrum Disorder and Dyslexia in music education settings.

A total of 60 relevant articles were reviewed, the primary sources of literature were Google Scholar, Pro Quest, Peer-Reviewed Journal, SAGE Journals, and Music Education Research, and the keywords for searching the literature were specific needs, music education, and inclusive education. The selection criteria give priority to articles that have been published recently and have been cited extensively as key references.

2. Interventions and interactions in the inclusive music classroom

Is it necessary for students with and without disabilities to learn in the same setting? Is an inclusive setting beneficial for all learners? Some scholars have reservations about inclusiveness, but most researchers agree that inclusiveness is beneficial for both normally developing students and students with disabilities.

Special educational needs: A New Look by Warnock states that Everyone except those with the most severe disabilities will be in mainstream schools, which means that this ideal of inclusion will not work (2005, p. 32). Farrell (2010)[11] in his publication *Debating Special Education* identifies that the limitations of inclusive education and the type of assessments which are students with disabilities are in the same learning environment as students without disabilities and students with disabilities may be labelled and the disability label may have a negative impact on the child. The focus on categories may marginalise other children who do not fall into the intended category (Messiou, 2006)[12]. Warnock (2005)[13] identifies comments about inclusive, confusion about the definition of inclusive, and problems with the diagnosis of student impairment.

However, in line with the social model which states that disability is not an individual abnormality but an aspect of human diversity, the education system should avoid using labels to define students with disabilities (Braun & Clarke, 2006)[14]. However, in line with the social model which states that disability is not an individual abnormality but an aspect of human diversity, the education system should avoid using labels to define students with disabilities. Students with disabilities tend to perform better in mainstream settings in terms of academic achievement, and the academic performance of students without disabilities is not hindered (Larsen,2011). Without a fully inclusive environment students with disabilities may not receive instruction that is appropriate to their needs. Without a fully inclusive environment students with disabilities may not receive instruction that is appropriate to their needs. Researchers have found that peer-assisted has a positive effect on mutual learning and that positive social interactions of peer-assisted learning can contribute to the academic performance of participating students. During peer assistance, based on singing and performing improvisation in the music classroom, students can swap roles with each other to work on tasks so that students with and without disabilities can become familiar with different learning tasks. Learning in a homogeneous environment not only enhances the inclusiveness of students but also the appreciation of individual differences. The education system should strive to create inclusive teaching strategies to support student success. Hornby (2011)[15] says that concerns about negative labels are a product of confused thinking. This is because students with disabilities are labelled by other children and teachers, even if they are not formally identified as having a disability. The negative impact of disability designation on students may not be attributed only to identity, but to the perception that their educational requirements set them apart from their peers.

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Avoiding the identity label does not prevent the label from having a negative impact, but it may prevent them from accessing the education they need.

Disability refers to the encounter of any circumstance that renders certain activities more challenging for an individual or restricts their equitable access within a particular society. (World Health Organization, 2019). *The Convention on the Rights of Persons with Disabilities* has recently released authoritative guidelines stating that inclusive education plays a crucial role in attaining high-quality education for all learners, including those with disabilities. Inclusion is a classroom environment in which students of different labels and abilities are taught by teachers who adapt and modify instruction to the needs of individual students(Darrow & Armstrong, 1999)[16]. There are long-standing laws and regulations to support the needs of children in special education, such as the Children and Family Act and the Equality Act, which aim to ensure equal opportunities for those receiving education. Additionally, it contributes to the establishment of inclusive, equitable, and peaceful societies.

3. Autism spectrum disorder

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that results in impairments of social communication and interaction as well as the presence of restricted, repetitive patterns of behaviour (American Psychiatric Association, 2013)[17]. It is anticipated that approximately 700,000 people in the UK have been diagnosed with autism (British medical association, 2020). One in 100 children is diagnosed with an Autism spectrum disorder (Zeidan et al., 2022)[18]. Autism spectrum disorders have evolved from a strictly defined, rare childhood disorder to a widely studied lifelong disorder that is considered to be quite prevalent and diverse. Autism is a spectrum disorder, which means that it can manifest itself very differently in every single person, but the disease is characterised by two core features: restricted social communication and repetitive sensorimotor behaviour. There are many theories about the causes of Autism spectrum disorders. On the one hand, Autism spectrum disorders are due to early brain development and altered neural reorganization, On the other hand, it is highly hereditary, strongly linked to genes, and may also be linked to the environment (Khan et al., 2012)[19]. Autism spectrum disorders frequently exhibit comorbidity with other disorders, such as attention deficit hyperactivity disorder, epilepsy, and intellectual disability (Mandy & Lai, 2016)[20]. In the absence of reliable biomarkers, the diagnosis must be according to the results of a combination of clinical observation of behavioural development and extensive diagnostic tests carried out by an authority (Losh et al., 2011)[21].

Previous research by academics contributed to teaching advice for students with autism spectrum disorders (Hammel, 2001)[22]. However, many general teachers in primary schools rely on imitation learning to teach music skills. Imitation as a technique of education is a teaching strategy that is widely utilised by teachers in conventional music classrooms. In contrast, children with autism spectrum disorders often do not imitate the behaviour of others in the same way as children without autism spectrum disorders, an approach that creates learning difficulties for children with autism and thus impairs the ability of children with autism to pick up skills through imitating. Shamrock (1997)[23]noted that the Orff method of teaching music will use their bodies to produce sounds and rhythms through body percussion imitation. For example, the instructor taps out a four-beat pattern using ta and ti ti, and the pupils copy the instructor by tapping out various phases of the pattern on their bodies. Behrend (1998)[24] depicted the six basic steps of the Suzuki method of teaching: (a) exposure, (b) imitation, (c) encouragement, (d) repetition, (e) addition, (f) improvement, and (g) refinement. During the imitation stage, the child will observe other family members learning to play an instrument or sing a song. Due to their limited language skills, children with autism are less proficient than their peers in completing imitation tasks.

As presented in the first part, Imitation is frequently employed as a method of instruction in the general music classroom, and although students with autism can imitate movements, it usually requires a lot of constant practice. Therefore, it is important for teachers to appreciate the obstacles that children with autism encounter in imitation learning and to adapt their teaching strategies to help them achieve success. Zachor et al. (2010)[25] found that Autism spectrum disorders are characterised by a predisposition for children to communicate via the use of items rather than gestures. Tactile stimulation props and pitchless percussion beats can be used to accompany the imitation music, providing additional body posture and facial expression hints. Improving the coherence and accuracy of their movements through continuous practice. As students continue to participate in classroom activities, children with autism may gain the motivation to participate in musical activities with others.

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4. Developmental coordination disorder (DCD)

Developmental disabilities refer to a group of conditions that affect an individual's physical, cognitive, and social capacity motor coordination difficulties in children are characterised by a lack of coordination and do not stem from intellectual or neurological motor deficits (Alloway, 2007)[26]. A relatively emerging illness in the field of scientific study, developmental coordination disorder (DCD) affects between 5% and 8% of children and has a high prevalence rate in this age group. (Chan, 2007[27]; Dewey et al., 2002[28]; Ferguson et al., 2014)[29] Different studies have found that it is not a single disorder and is often associated with other disorders, such as attention deficit hyperactivity disorder (Niemeijer et al., 2007)[30], challenges in acquiring knowledge or dyslexia (Biotteau et al., 2019)[31], language disorder (Hill,2008)[32], or autism spectrum disorder (Gillberg & Kadesjö, 2003)[33]. The American Psychiatric Association classifies the basic features of developmental coordination disorder into the following three categories: (a) obviously affects the academic performance or daily activities, (b) " is not related to a general medical condition (such as cerebral palsy or muscular dystrophy)" furthermore not satisfying the criteria for a diagnosis of pervasive developmental disorder, and (c) "If a person has mental retardation, their motor impairments must be significantly worse than those that are often associated with it." (American Psychiatric Association, 1994, p. 53). The core symptom of Developmental coordination disorder is difficulty in carrying out tasks at home and in school (Blank et al., 2019[34]; Zoia et al., 2006)[35]. People who have been given the diagnosis of developmental coordination difficulties are distinguishable from others principally by a decreased amount of control over their own physical motions. (Kooistra et al., 2009)[36]. Memory loss is the primary symptom, however the condition also affects other aspects of life for an individual in addition to memory loss (language, visual, executive). Shows inattentiveness, and inability to stay focused. Fiddling or tapping their hands or feet, twisting their bodies or running around inappropriately. Schoemaker & Kalverboer (1994)[37] observed that students with developmental coordination disorder lacked confidence and were unsociable and passive. In the Hands et al., (2002) study it was shown that motor coordination deficits could be reinforced through interaction with peers at school. Music activities, such as ensembles or choruses, which are often carried out in the music classroom, make huge strengths in the interaction between students with and without disabilities.

Music educators play an essential role in helping children with developmental coordination disorders to participate in musical activities (Heikkila a& Knight, 2012, p.12). Díaz-Pérez et al. (2020)[38] indicate that music plays a vital role in the acquisition of motor coordination, body language, attention and spoken language. Dey et al. (2012)[39] indicate that motor skills can be improved through the stimulation of musical development. Mado Proverbio, Manfredi, Zani, and Adorni (2013)[40] state that the brain's functional structure may be reshaped through the influence of music. Schaefer et al. (2014)[41] show that music accompanied by movement or other physical activity improves cognitive performance, and they specifically emphasise that certain areas of the cerebellum are activated for movement by listening to music (Drapeau et al., 2009)[42]. Hallam's book *The Power of Music* demonstrates that music education has a positive impact on cognitive development, improving listening and language skills, auditory memory and literacy skills (Shatzer et al., 2013)[43].

Motor tasks in the music classroom can be very beneficial in improving children's movement, and as students have motor coordination limitations, it is important to arrange appropriate instruments in the music classroom to assure that the needs of each student are met. The literature on Katja (2016) highlights that the Dalcroze Approach can be extremely beneficial to disabled students with special education by helping their peers and teachers develop and demonstrate equal opportunities for their interaction and musical knowledge. It is important to be aware of the physical movement needs of the students and to make appropriate adjustments and modifications when handling tasks, with some students playing only strong beats and others playing only weak beats, to give both sides more experimentation and to maintain the motivation and self-esteem of the impaired student. The music educator takes ownership of the student's strengths and challenges to teach musical skills in the music classroom while improving their impairment.

5. Dyslexia

A learning disability that predominantly impairs the abilities involved in precise and fluent word reading and spelling is referred to as dyslexia. Dyslexia is characterized by difficulties in spelling words, The act of reading with immediate comprehension, writing words, and pronouncing words when engaging in speaking reading and comprehending the content being read. (Griffiths & Stuart, 2011)[44]. Peterson and Pennington (2012)[45] argue that the aetiology of dyslexia is due to a complex interaction

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of genetic and environmental influences. Dyslexia is both a visual and a language problem, not only in the student's language and reading skills but also in the difficulty of reading musical notes. One dyslexic musician said that reading the notes was a challenge for him and that the notes on the pentatonic scale were like a bunch of birds sitting on a telegraph line. The inability to tap a steady beat may be an early indication that a child is at risk for dyslexia, with children showing better rhythmic skills in the early stages of their fourth year of life, and better reading skills by the age of six (Ozernov-Palchik et al., 2018)[46]. Rhythm-related phonology is also a challenge for dyslexic students. Separate tests of listening to a fixed tone have shown that dyslexic students have difficulties in identifying rhythm (Leong & Goswami, 2014[47]; Thomson & Goswami, 2008)[48]. Dyslexic students have difficulty perceiving pitch changes and have difficulty listening to semitones or small pitch gaps (Hämäläinen et al., 2012)[49].

"The advantageous function of music training on sensory processing give superiority that extend beyond the realm of music processing itself. There are several inclusive music strategies that can help dyslexia students achieve greater success in the music classroom. If they score using challenging notes and complex rhythms, music teachers can use simplified rhythms, using multiple images, moving text, and tactile objects to guide students to identify notes, and single practice rhythms that allow them to have longer responses.

Multi-sensory walking intervals can also be used to help dyslexic children learn rhythm, for example, the teacher can put different pitches corresponding to different steps and then the students combine the written notes with perceived walking steps to emphasise the sensation of body sensations moving through space. Because of the high prevalence of dyslexia in children, music educators involve every student in the class in this activity not only to help dyslexic students enjoy music but also to provide holistic music education for all children.

How music education interventions function. As an instrumental or vocal teacher, there is tremendous potential for positive impact on the dyslexic student's life (Oglethorpe, 2002)[50]. Educators need to understand the abilities of each student and support students with dyslexia at an early age; early intervention can help students achieve greater success. Two of Katie's studies demonstrated that music training helped six-year-olds in primary school to improve their scores on phonological and spelling assignments, in addition to helping eight-year-olds to improve their language and proficiency in spelling. On the other hand, auditory and rhythmic processing in music can improve weak brain function (Flaugnacco et al., 2014[51]; Forgeard et al., 2008[52]; Grube et al., 2014[53]; Overy et al., 2003[54]; Thomson & Goswami, 2008). The rhythm of the music classroom can help dyslexics improve their reading fluency. Tallal and Gaab (2006) [55]demonstrated that there is a multisensory activity in music and that children's attention and reading skills improve with musical training and auditory practice. The acquisition of rhythm and pitch in the music classroom has been shown to have a positive impact on the development of reading fluency.

In consideration of these results, the importance of music education for children with dyslexia was further explored. It is essential that educators who work with individuals diagnosed with dyslexia concentrate on the identification and cultivation of their strengths to foster their self-assurance and academic self-efficacy, enhance their enthusiasm for learning, and impart techniques to enhance their tolerance for frustration.

6. Conclusion

This paper uses person-centred words when describing disability impairments and tries to implement this in the daily teaching as well. Children with impairments should not be reserved for music therapy researchers only; each individual musical element of music education (rhythm, timbre, pitch, harmony) can be an intervention for children with disabilities. Inclusion is not a placement but a way to support the integration of all individual needs into the classroom environment and students with disabilities have the right to receive music education that meets their individual needs. Students who have disabilities in the regular classroom can experience greater frustration than the general student population. Learning activities in the music classroom are fun and emotionally regulating for students with disabilities, and the inclusive music education environment gives them the opportunity to interact with other general students.

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