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BUTTERFLY-PIANO: A DIFFERENTIATED LEARNING PROPOSAL, BASED ON THE AMERICAN GROUP PIANO METHODOLOGY, FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

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Abstract

This study aims to suggest new creative possibilities for using the piano – considered one of the most traditional musical instruments – through the application of a non-conventional graphic element. This approach involves not only a playful and diversified design, but also a therapeutic association between musical notes and colors, which may effectively complement treatments for Autism Spectrum Disorder (ASD). It is hoped that this "new instrument" may provide various benefits and serve as a support tool for children who experience difficulties with verbal communication, visual interaction, affection, and social engagement.

Keywords: *Autism Spectrum Disorder, learning proposal, American methodology, group piano, butterfly-piano.*

1. Introduction

It is not surprising to state that a teacher must always be open to different educational approaches and methodologies. The world is constantly changing, and as part of that context, we must be increasingly receptive to new tools that help us positively transform the reality in which we live.

In the field of music, pedagogical approaches often remain quite conservative, particularly when addressing students with specific potentials and limitations. Clearly, every human being is unique. We all have strengths in some areas and challenges in others, but we all deserve access to knowledge.

Educators who believe that an instrument is only suitable for those with “musical intelligence” fail to acknowledge the truth that music is a democratic language. They also miss the premise that, as art and music educators, we can help change a person's life – since all humans are musical beings with lived experiences, capable of being inspired to achieve positive and meaningful encounters in the world of sound and silence.

2. Autism Spectrum Disorder and music

The piano has increasingly been used as a complementary therapeutic tool for individuals with autism. According to Alvim and Warwick (1991, p.13), children on the spectrum tend to interact more effectively with objects than with people. When it comes to music, they may form a strong bond with a specific instrument for several reasons – its shape, for instance – and this object can serve as a bridge for interaction between their internal world and the external environment. Thus, the piano, as both a musical instrument and a tangible object, can play a significant role in their development.

As noted by Neves, Parizzi, Freire et al. (2022, p.4, our translation), “Ockelford (2018) emphasized that children with ASD... are often fascinated and motivated by music... the piano is often the first instrument of choice... especially for those with absolute pitch—because it offers immediacy... in sound.” Additionally, the same authors point out that the instrument’s shape or design allows for interactive experimentation with others (a core principle of the American group piano methodology). The size and materiality of the piano foster interaction through shared attention activities. Another factor is its organized key system, which by itself provides a pattern-based stimulus that appeals naturally to individuals with autism.

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Several studies support the claim that people with ASD are three times more likely to have absolute pitch than neurotypical individuals. This characteristic must be acknowledged to help them achieve greater developmental outcomes. Considering these essential factors from a music educator's perspective, and using an adaptation of the group piano methodology, this article introduces not only a new playful design for the instrument, but also a practical and functional approach.

3. Objectives

The objective of this research is to propose new creative ways to use the piano – one of the most traditional musical instruments – for individuals with Autism Spectrum Disorder. Based on the group piano methodology, the goal is to promote a better quality of life for children with ASD, particularly non-verbal individuals or those with low social interaction. This last point is the primary learning objective of piano instruction through the group methodology.

4. Methods

This research is grounded in the analysis and adaptation of the principles of the group piano methodology, applied to a bibliographic study. Developed in the United States many years ago, the group piano methodology was designed to provide musical literacy to beginner students of any age. Group piano methods – regardless of whether they are intended for children or adult beginners – encourage creativity, improvisation, and ensemble interaction. Having worked with both *Piano 101* and *Alfred's Group Piano for Adults*, which serve as the foundation for the Butterfly Piano's sheet music configuration, we can affirm that there is no more stimulating way to introduce children and adults to the instrument than through group piano, as it is rooted in social collaboration.

Scientifically, it is known that "creative learning is an approach that goes beyond the simple assimilation of subjects and content, as it stimulates imagination, curiosity, and the ability to solve problems in original ways" (Tiburski, 2024, our translation). The proposal of a soundless keyboard, inspired by the silent pianos of the past – which are still in use today – offers the child a way to work on cognitive interaction with their fingers. With this creative strategy, students are encouraged to develop their internal hearing, since imagining and trying to trigger musical notes while speaking or singing melodies helps optimize the integration and functioning of both brain hemispheres. Rhythm is typically controlled by the left side of the brain. However, speech and logical reasoning (attributed in the past to the left side of the brain), as well as image recognition and musical ability (attributed in the past to the right side of the brain) are now known to involve both hemispheres.

Therefore, the silent, playful pianos proposed here are likely to be useful in complementary or alternative therapies for individuals with autism – not only to support specific challenges, but also to promote cognitive and neural integration. Parizzi, Freire et al. (2022, p. 3, our translation) emphasize "the use of the piano... as a powerful tool to provide children with ASD a multisensory experience early in their musical development. In this context, the piano should also be used... percussively…"

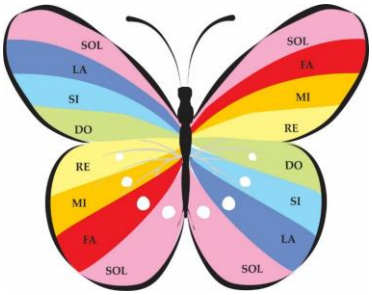
In the case of the Butterfly Piano, which produces no sound and only features a keyboard with note names from parts of universal songs—combined with chromotherapy principles—it is expected that some form of verbal communication will occur, supported by other therapies. Gradually, children can be encouraged to interact with conventional keyboards or pianos and to play what they have imagined and expressed through their frequent contact with this playful instrument.

The proposed design for the Butterfly Piano, which can be made from cardboard, would be represented as follows:

Figure 1. Butterfly-Piano Design.

Support network member's Butterfly-Piano

Piano 2



Autist's Butterfly-Piano

Piano 1

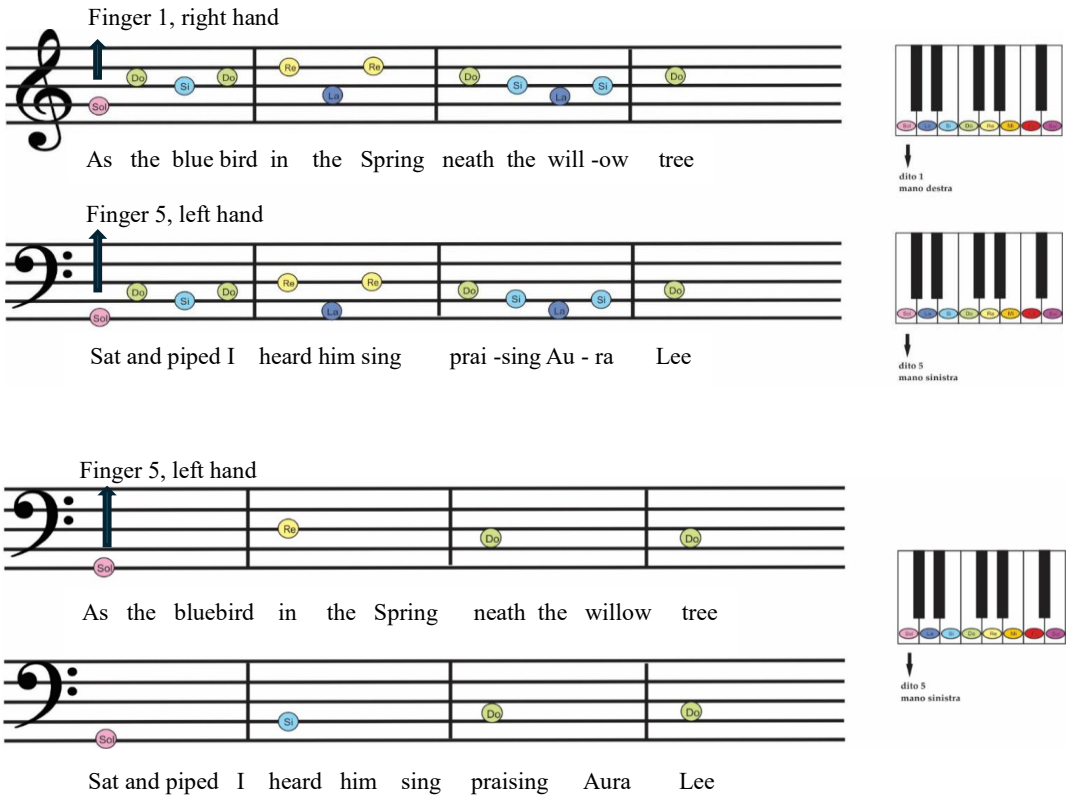
5. Discussion

Many children with autism have specific interests. However, the chosen symbolic design had to involve at least two interconnected parts to align with the traditional group piano methodology. Thus, the Butterfly Piano is intended for initial exploration between an autistic child and a partner, whether a family member or not.

As previously stated, every human being is unique. A person with a limitation in one area may not be able to respond quickly or predictably based on imitation. And how comforting it is to feel supported by another person. We only truly accept others' differences when we first recognize and accept our own flaws and limitations. This relationship is what changes the world – it transforms lives, families, communities, and cultures.

The adapted sheet music is based on a songbook passed down through generations and widely distributed across different media. This is expected to generate familiarity and emotional resonance in children with autism.

Figura 2. Aura-Lee – Gerge Poulton/William Whiteman – arranged by Priscila Gambary - Piano 1 e 2.



According to Rissato (2024, our translation), “bilingualism in autism can enhance adaptability to new situations... while promoting cognitive stimulation, communication skills... and cultural and social inclusion…”

All the “works” referenced here feature melodies that are universally recognized across many cultures. Language does not prevent the "performer" from translating them into their native tongue, although many children begin verbalizing in different languages.

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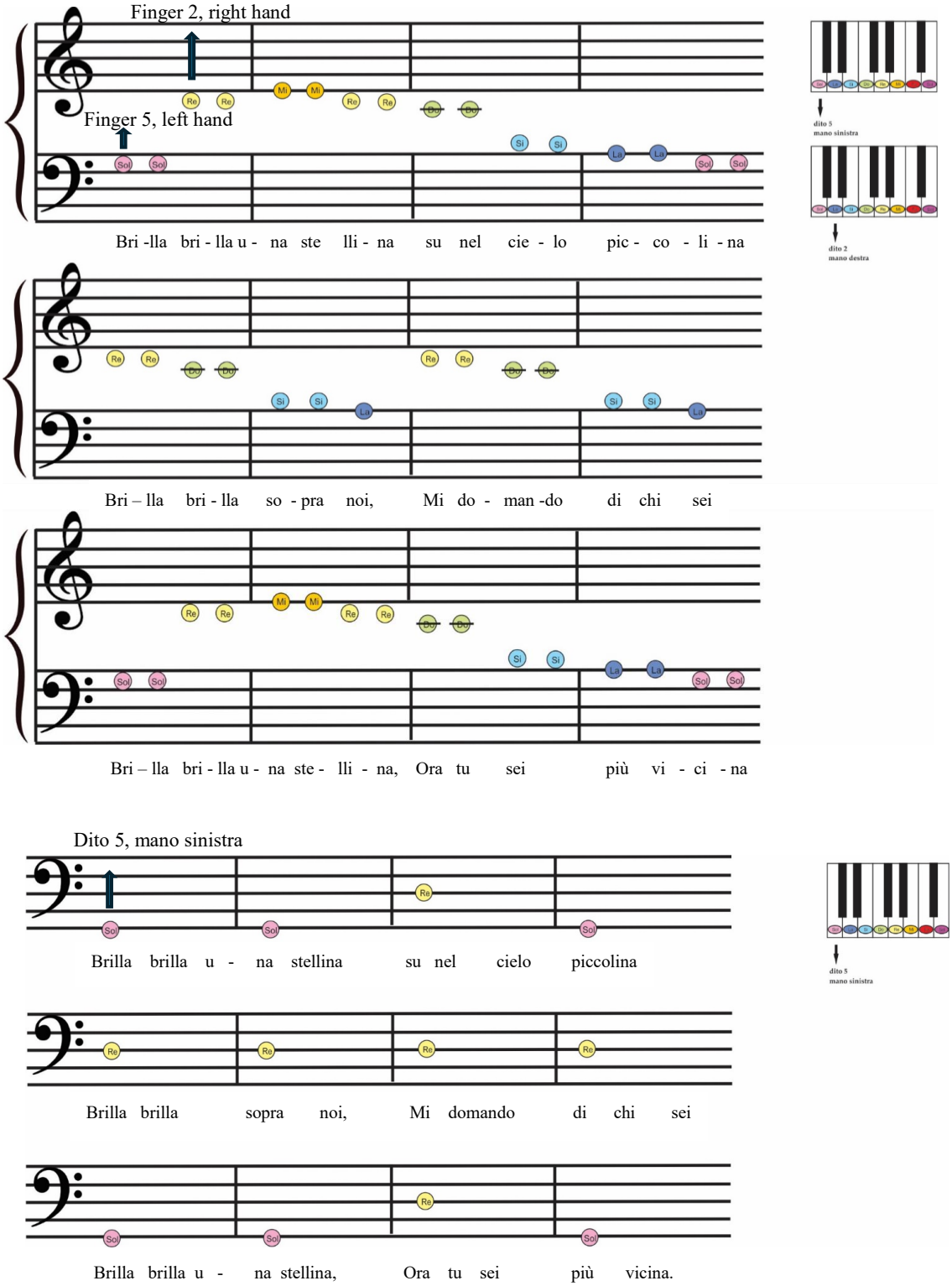
Figure 3. Brilla, brilla una stellina – adaptation by Priscila Gambary – Piano 1 and 2.



For many educators, affection is an essential component for developing intelligence and fostering interest and motivation in any individual, whether neurodivergent or not. If the person playing "Piano 2" – written in the bass clef – is part of the autistic child's support network, the desired outcomes may be achieved more quickly than expected. Suzuki believed that in the realm of music education, children learn primarily by example. According to him, affection is the key teaching tool in all dimensions.

6. Conclusions

Based on the premise of the group piano methodology, which is grounded in collaboration, positive reinforcement, interaction, and the creation of a true support network that makes learning as engaging and humane as possible, we present this new proposal for the creation of playful pianos adapted to the needs of individuals with autism. These pianos, with notes associated with chromotherapy principles, are silent, respecting a key sensory consideration for those on the spectrum, and are inspired by silent pianos. Before we speak of inclusion and acceptance, we must understand that diversity is what makes life richer and more meaningful.

Contrary to today's world, traditional group piano methodology does not create a space for competition but rather fosters solidarity and empathy. We conclude this proposal – focused on embracing diverse individuals – by affirming that it is possible to create a more sensitive and cooperative learning environment if we truly understand that normal is to be different. And for others to thrive, we must first be well with ourselves so that, together, we may radiate beauty, love, and compassion into the world.

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