

*Exploring Inclusive Evolution in Music Academia:
Experimental Practices in Contemporary Music*

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Abstract

For individuals with disabilities, music lessons often serve as effective art therapy, a prevalent approach in Kazakhstan and globally. However, what if a student aspires to pursue music professionally? Are contemporary methods equipped to provide comprehensive music education to everyone, regardless of their physical or cognitive limitations? This paper examines inclusion issues in modern professional music education and practice. It suggests that contemporary music offers a pathway for the full participation and development of musicians with various disabilities, including conditions affecting strength, energy, or alertness, such as ADHD and multiple disabilities. Inclusive music teaching methodologies extend beyond technical accommodations in classrooms; they also involve the psycho-emotional literacy of educators and the use of adapted systems like Figurenotes, improvisation techniques, and specialized devices. This study analyzes available technologies, including music applications, that enhance contemporary music education and practice. The collaboration between contemporary music and inclusive practices holds potential for fostering new musical thinking, advancing professional music education, and benefiting society. The authors translate academic discourse into practical application, showcasing results from a collaboration between disabled musicians and a contemporary music ensemble at the Edinburgh Festival 2023. Through this practical experience, the paper aims to develop experimental musical practices and inclusive perspectives in education, science, and performance, highlighting the transformative power of inclusive evolution in contemporary music.

Keywords: Inclusive Music Education, Adaptive Music Methodologies, Music Education for Disabilities, Contemporary Music Practices, Music Technology and Accessibility

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Introduction

In the realm of professional music education, this paper explores teaching methodologies tailored for students with special educational needs – a topic of profound sensitivity. The discourse on inclusive education often includes personal examples, stories, and insights that underscore the pivotal challenges and potential strategies for fostering inclusivity. Our analysis is rooted in both the broad scope of music education and specific contemporary music practices, drawing from our direct experiences.

The Current State of Inclusive Music Education: Global and National Perspectives

As reported by the World Health Organization in 2023, approximately 1.3 billion people, or 16% of the global population, live with some form of disability or health limitation. This statistic represents roughly one in six individuals worldwide. When considering unreported cases of neurodivergence, this estimate could potentially rise to over 30% of the global populace. Specifically, in Kazakhstan, it is documented that over 160,000 children are living with disabilities. Despite national efforts aiming for full school inclusivity by 2025, the provision of music education tailored to students with special needs lags significantly, both within the nation and globally.

This paper identifies a significant disparity between societal expectations and the absence of a scientifically substantiated pedagogical framework for inclusive music education. We propose that musical inclusion should not merely be viewed as an approach but as a foundational paradigm that affords every child and youth the opportunity to participate, learn, and thrive in music based on their unique abilities. It is important to note that disability ceases to be solely a medical issue and becomes a matter of social organization (Abramo, 2012). A poignant example of this paradigm shift is the consideration of musical instruments: if an instrument is not designed for one-handed use, the limitation does not lie with the individual but with the instrument's design. Such insights drive the need for innovative educational methodologies that are both flexible and adaptable, thereby accommodating a diverse range of learners.

Educational initiatives aiming to integrate inclusive practices in music education have emerged globally. Notably, the Melody Music Birmingham (MMB) project and a Swedish initiative at the Academy of Music have gained academic attention for their innovative approaches. These projects exemplify how structured educational programs can adapt to the needs of students with disabilities, promoting inclusive practices within established curriculums.

The grassroots movement represents a significant shift towards creativity and innovation, unbound by traditional institutional frameworks. A prime example is the Monthly Music Hackathon NYC (Bell, 2020), an event that epitomizes this trend by bringing together diverse professionals to co-create new musical instruments, delve into emerging technologies, and tackle the educational barriers faced by individuals with disabilities. Such initiatives are pivotal as they foster a collaborative environment that encourages the rethinking of traditional educational methods and the creation of accessible musical experiences.

Several music institutions are at the forefront of developing contemporary methods tailored for musicians with disabilities. These include the Drake Music network, the Vancouver Adapted Music Society (VAMS) in Canada, the Resonaari Music Centre in Helsinki, the

Sibelius Academy, and Sweden's "Music Passion" program. These programs are critical in shaping educational practices that accommodate diverse learning needs and promote inclusivity within professional settings.

Adaptive Teaching Methods in Music Education

Despite these advancements, professional music education organizations often remain isolated from broader educational systems and lack comprehensive resources such as specialized textbooks, methodologies, or established traditions for teaching students with special needs. For instance, at the Kazakh Conservatory, while blind students are admitted under state quotas, their education is generally confined to vocal studies. The adaptation of teaching methods, including the use of the Braille system for music notation which students often have to transcribe themselves, remains limited and highlights the necessity for broader systemic changes.

Although general concepts of inclusive education have been applied to music education, as demonstrated in Table 1, they only address a fraction of the overall demand. The implementation of these principles varies significantly, indicating a need for a more robust integration of inclusive methodologies within music education frameworks.

Table 1: Inclusive Education Principles Applied in Music Education

Individualized Education Programs, IEPs	ABA and DTT Discrete Trial Training, DTT
Universal Design for Learning, UDL	The TEACCH Method
Peer-Assisted Learning Strategies, PALS	The Scope and Sequence Method
Child-Friendly School	The Holistic Method (Dalcroze Approach)
The Carl Orff Method	The Multisensory Approach

Recent advancements in music education have led to the development of specialized methods tailored to meet the diverse needs of students with disabilities.

- *String Instruments:*
The shift from mainstreaming to true inclusion addresses individual needs. Methods include visual markers on instruments, alternative notation systems, and technology like iPads for students who cannot hold traditional violins. Violinist Adrian Anantawan, who uses a prosthetic to play, exemplifies how adaptive methods enable musical achievement (Bugaj, 2016).
- *Music Theory & Conducting:*
Janna Saslaw emphasizes Braille for independent harmony exercises and low-tech tools for beginners unfamiliar with Braille. For conducting, a tactile method allows students to place their hand on the instructor's hand, learning gestures and patterns. Spatial perception challenges, due to the lack of visual experience, are managed with targeted adjustments and one-handed instrument exercises.
- *Inclusive Music Education (Russia):*
Smirnov's long-term experiment (1994–2017) at A. Scriabin Music College highlights key components: continuity, multimodal perception, individualized learning paths, and collective music-making. These principles create an effective inclusive model in professional music education.

What approaches should be adopted when a student with disabilities aspires to pursue music as a professional career? This pivotal question challenges educators to extend beyond basic inclusive practices to more comprehensive strategies that facilitate not just participation but

professional proficiency in music. We will now highlight several crucial insights derived from contemporary research that underscore effective methodologies and best practices for supporting these students' professional ambitions.

1. Most inclusion models and methodologies in music focus on art therapy, emphasizing a “supportive environment” for self-expression. However, this approach often reduces music to a therapeutic tool rather than an academic discipline, limiting students' opportunities for professional growth or careers in music.
2. Specialized studies highlight the challenge of selecting repertoire for students with special educational needs (Wong, 2022).
3. Ensemble performance within the framework of inclusive music education is an optimal format.
4. An undervalued specialization for students with special educational needs is composition, which we believe to be the most promising.
5. Traditional non-European educational models hold great potential (such as Confucian traditions, folk ensembles (mariachi, steel bands, gamelan), or Kazakhstan's “Ustaz–Shakirt” oral teaching system).
6. Academic music education focuses heavily on the reproduction of musical works, while improvisation, being underintegrated into the curriculum, represents a missed opportunity.

Case Study: Collaboration Between Eegeru and Drake Music Scotland

The six theses outlined formed the foundation of an international collaboration between the Kazakh ensemble “Eegeru” and Scotland’s “Drake Music”. This partnership is founded on the hypothesis that contemporary *music as a field enabling full participation and growth for musicians with diverse disabilities, including conditions that limit strength, energy, or alertness, such as ADHD and multiple disabilities*. This collaboration has identified six strategic directions that we believe are crucial for empowering musicians with disabilities to achieve professional success and artistic fulfillment:

1. Building professional careers for musicians with disabilities;
2. Developing compositional skills;
3. Expanding the repertoire;
4. Emphasizing ensemble performance;
5. Effectively fostering improvisational skills;
6. Integrating and learning from non-European musical traditions.

The collaborative endeavor between the Kazakh ensemble “Eegeru” and “Drake Music Scotland” serves as a paradigmatic example of successfully integrating contemporary music with inclusive practices. “Eegeru”, an independent ensemble specializing in contemporary music, comprises eight professional musicians: a classical string quartet, a flutist, a clarinetist, a pianist, and a performer on the qobyz – a traditional Kazakh instrument. Each ensemble member boasts an impressive educational portfolio, having earned degrees and completed internships at prestigious institutions globally, such as the UCSC, Berklee College of Music, Conservatoire National Supérieur de Musique et de Danse de Paris, Harvard Summer School, and the Moscow State Conservatory. “Drake Music Scotland”, which represents Scotland in this partnership, is recognized as the nation's largest institution dedicated to inclusive music. The collaboration primarily occurred online, utilizing modern technologies and adaptive methods to surmount geographical and physical barriers. This virtual collaboration reached its zenith with a vibrant concert at the previous year's Edinburgh

Festival, which highlighted the talents of musicians with disabilities and underscored the efficacy of inclusive music education practices.

Technological and Methodological Innovations

The successful presentation at the Edinburgh Festival exemplified the tangible benefits of employing modern technologies and adaptive strategies in music education. This approach is particularly resonant with James J. Gibson's affordance theory. The theory of affordances links what objects offer to the possibilities for behavior that exist for a given creature. The theory “implies that to see things is to see how to get about among them and what to do or not do with them” (Gibson, 1979).

We can provisionally categorize research into three areas:

- Development of adaptive methodologies
- Creation of accessible instruments
- Application of software solutions

It is important to note that the first historical attempts at adaptive methodologies in music can be traced back to the 19th century. In addition to the well-known Braille system, the experience of the New York Institute for the Blind (NYIB, founded in 1832) is noteworthy. Today, even the significantly improved Braille music notation system, despite its obvious advantages, has limited effectiveness.

One of the most accessible adaptive methodologies is the system of music notation. Among the most effective alternatives to conventional academic notation is Figurenotes, developed in Finland. This system is based on the idea of using colored symbols to represent musical notes. Each symbol corresponds to a specific sticker on the instrument, allowing students, regardless of their ability to read traditional musical notation, to intuitively reproduce musical works. Symbols representing specific notes are color-coded for ease of recognition, while their shapes vary according to the octave, simplifying the learning process and minimizing confusion. This system is designed to be maximally simple, user-friendly, and intuitive.

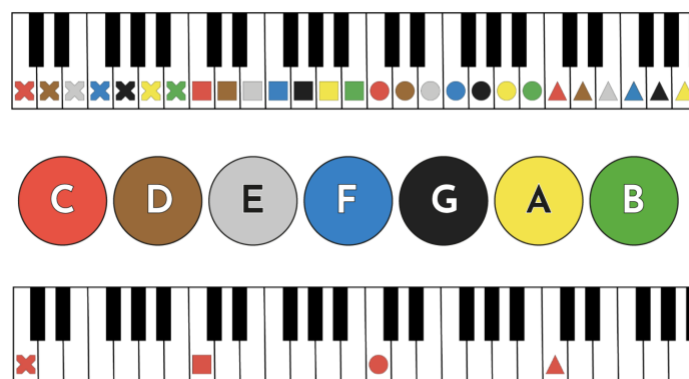


Figure 1: Figurenotes – System of Music Notation

Adaptive methods were integral to this project, encompassing individual lessons that preceded ensemble work and incorporating the use of Figurenotes for composition. These methods facilitated the inclusion and participation of musicians with disabilities. During performances, each musician received individualized support from an assistant, a standard

practice designed to ensure the smooth execution of musical pieces. Assistants played a critical role, not only in tasks such as page-turning for pianists but also in navigating complex musical scores. This was achieved through the use of specialized cards that indicated key entry points and segments of the musical text, a technique derived from Peer-Assisted Learning Strategies (PALS) and the Multisensory Approach.

Assistive Technologies and Digital Solutions

Adapted musical instruments are crucial for musicians with physical limitations (e.g., restricted limb mobility). Developing mechanisms enabling performance on traditional instruments using one hand, foot, or other body parts involves modifying valves, keys, and other components to facilitate play. A higher level of technology is applied in the development of adaptive devices such as MIDI controllers, which can be customized to individual needs, and devices operated by head movements, breath, or eye gaze (e.g., EyeHarp or Headspace, created by Rolf Gehlhaar, which uses sensors to detect head movements and breath for sound production). We utilized the Digital Harp, played by musician Rhona Smith using three physical buttons programmed to trigger responses, primarily in two programs: Notion and Ableton. Rhona controls playback and structure, while Ableton manages sound production.

Expanding on software solutions, we highlight the applications Harmonic Walk, Jazz Improvisation, and Following the Cuckoo Sound, developed by Italian researchers M. Mandanici, F. Altieri, A. Rodà, and S. Canazza (2018). These represent a unique adaptive environment aimed at developing various musical skills through full-body interaction. Harmonic Walk is designed to teach the basics of tonal harmony. In an interactive environment, “harmonic points” representing various chords are placed on the floor. Participants move across these points, and when stepping on a specific area, the system plays the corresponding chord.

Jazz Improvisation allows children to control multilayered musical compositions. On an interactive surface, zones correspond to different musical tracks (e.g., rhythm, bass, melody, accompaniment). By moving between these zones, children can toggle tracks on and off, creating their own arrangements and improvisations in real time. Following the Cuckoo Sound is designed for teaching visually impaired children. The game creates a sound environment where participants follow audio cues (the sound of a cuckoo). The sounds change based on their direction, guiding users when they deviate from the intended path.

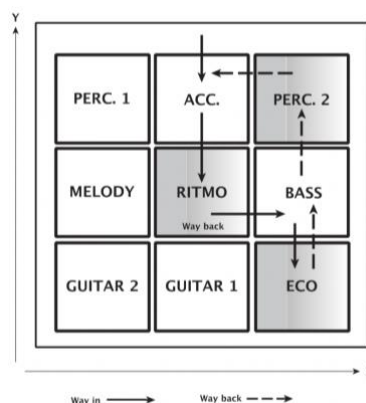


Figure 2: An Example of Child’s Route on the Responsive Space of Jazz Improvisation (Mandanici, M., Altieri, F., Rodà, A., & Canazza, S. [2018])

The use of specialized software, such as Soundbeam and GarageBand, has become an essential part of music education in modern progressive schools. This is not an exhaustive list of software for inclusive music education. Tools (like Ableton Live, Logic Pro, FL Studio, and GarageBand) allow students to create music interactively using samples and effects. The iPad, with its convenience and versatility, has become a key tool for integrating music and technology into education and performance. Nearly all the mentioned software is available for use on the iPad.

In our practice, the ThumbJam app was utilized extensively. This advanced music application provides access to over 40 high-quality instruments, each specially recorded for enhanced authenticity. It features a comprehensive library of hundreds of scales and modes, accommodating a variety of musical genres from rock to classical. The app's key attributes include authentic sound quality with layered samples, an intuitive interface that simplifies playability – even for individuals without musical training—and extensive customization options for scales, keys, and ranges. Additionally, it supports multitouch and accelerometer inputs, enabling expressive effects such as vibrato and tremolo.

Contemporary Music as a Framework for Inclusion

The focus on contemporary music is a deliberate alignment with our core principles, particularly within the context of postmodernism. This musical approach is characterized by its inclusivity and a propensity for experimental forms, sounds, and performance practices. Unlike traditional classical music genres that often adhere strictly to established structures and traditions, contemporary music encourages the challenging of norms and the adoption of innovative approaches. This orientation positions contemporary music as an optimal medium for integrating non-traditional performers and adaptive technologies. Such practices not only facilitate participation by musicians with diverse abilities but also contribute significantly to the enrichment of the contemporary musical landscape.

One of the intriguing research concepts views disability as an analytical category in musicology, examining how it expands musical norms in contemporary music. Joseph Straus (2006) redefines disability as a cultural construct, not just a social or biological condition, and traces the evolution of “normalcy” and “deviation” in Western culture through music:

- *Late 18th Century*
Until this time, disability in Western culture was seen as an immutable condition, perceived as a sign of divine punishment or a natural “defect”. It was considered a “natural and permanent” state beyond correction. This perspective extended to music, where deviations from traditional harmony were viewed as “violations” of the established order, reinforcing the continuity of natural laws.
- *Late 18th Century – Early 19th Century*
The concept of disability began to shift, now understood as a deviation that could be corrected or “normalized”. The idea of “normality” became dominant and extended to musical structures. Musical deviations started to mirror cultural notions of disability – as states requiring correction. For instance, in Beethoven's symphonies, dissonances and unstable tonalities disrupt the norm temporarily but ultimately return to equilibrium, symbolizing the societal impulse to “correct” deviant conditions. This view also influenced 19th-century music theory, which focused on identifying and resolving “deviations” in tonality and harmony, paralleling cultural normalization efforts.

- *Early 19th Century*
Schubert's music often features dissonances and tonal deviations that do not resolve immediately. These techniques suggest that musical works can remain in a state of "unresolved tension", metaphorically embracing deviation as part of a new state. In Schubert's compositions, anomalies are not "corrected" but integrated, representing a philosophy where deviation is a stable element coexisting with traditional harmony.
- *Early 20th Century*
Schoenberg advanced the idea of anomalies as foundational rather than temporary deviations. In his twelve-tone system, departures from traditional harmonic structures became integral to the compositional process. This system treated all notes as equal, organizing anomalies into a new harmonic form. By redefining and "normalizing" deviations, Schoenberg established entirely new standards and norms.

Contemporary music serves as an inclusive space where unconventional features become part of the artistic vision. Its traits below emphasise how limitations can transform into artistic expression:

- *Clashing Musical Styles*
Combining contrasting styles incorporates jarring clashes giving a vivid impression of heard voices. This reflects fragmented consciousness and allows everyone to find their unique "voice" within the music.
- *Repetition and Structure*
Repetition in modernist music creates predictability, offering comfort and inclusion for those who thrive in structured environments. It transforms uniformity into a powerful tool for accessibility.
- *Simplicity and Minimalism*
Simplified melodies, harmonies, and textures make music accessible. "Extreme simplification" (Howe, 2016) fosters engagement and creates a welcoming space for diverse abilities.
- *Improvisation as Collaboration*
Improvisation encourages self-expression and teamwork. In "Eegeru" and Drake Music Scotland's concert, improvisational sections highlighted collective creativity and inclusivity in action.

These techniques align with contemporary music's broader tendency to find beauty where classical aesthetics saw deviation from the norm. "Disability aesthetics refuses to recognize the representation of the healthy body... as the sole determination of the aesthetic" (Howe, 2016). This assertion confirms that contemporary music offers a more open and inclusive space for all, allowing uniqueness to become a source of artistic value.

The composition by Claire Johnston, a musician with a disability, was performed by an ensemble that included flute, clarinet, two iPads, qobyz, a string quartet, digital harp, and piano. Of the eleven ensemble members, three were individuals with physical and psychological conditions. The musical score innovatively combined graphic and standard notation, incorporating improvisational fragments that necessitated comprehensive interaction among the musicians, a core element that significantly enhances the complexity and depth of chamber music. The composition was set in a simple tonality of G major, with one sharp, designed to facilitate equal participation from all ensemble members. Its structure was based on a three-part form that utilized repeating patterns to drive the development of the musical piece. Over the course of a year, the composer worked closely with a qobyz musician, integrating intonational elements that are characteristic of both Kazakh and

Scottish musical traditions. The piece notably featured overtone-rich sounds and utilized pentatonic scales, narrow-range folk modes, and was imbued with meditative imagery that focused on a singular reflective state.

Figure 3: Call of the Mountains by Claire Johnston

Contemporary music's inclusivity lies in its embrace of unconventional forms, harmonic experimentation, simplicity, rituality, and “variations of difference” as artistic tools, fostering integration into academic and professional music fields.

Impact and Future Directions

The concert exemplified an effective integration of collaboration, modern technologies, adaptive methods, contemporary music, improvisation, and Kazakh traditions, culminating in a transformative experience. It was recognized with The Impact Award from the Royal Philharmonic Society, marking it as one of the most significant concert programs of 2023. In response to this achievement, the “Music Unbound” initiative was established. This community-driven effort in Kazakhstan is committed to promoting professional musicianship that transcends physical barriers. The inaugural event of “Music Unbound” showcased ensembles whose performances demonstrated that physical differences, such as congenital blindness, do not detract from musical talent. This initiative marks a critical advancement in redefining professional music engagement, emphasizing inclusivity and performance excellence.

Conclusion

This research has yielded several key insights into the integration of inclusive practices in music education:

1. There are musical genres that enable musicians with various disabilities to fully participate and develop. Contemporary music embraces diversity as a norm, not a deviation.
2. It is evident that a fully universal methodology is impossible. Adaptation is necessary depending on the type of disability and the musical instrument.
3. A promising idea is the use of traditional musical cultures in inclusive music education, particularly those historically developed as oral-professional traditions.

4. Significant reforms in the music education system, including higher education, are essential.
5. Including students with disabilities in the academic community can lead to greater isolation if it remains a nominal gesture without real changes.
6. Professional music education and the professional music scene are fundamental rights for every individual.

While our research findings and subsequent initiatives offer promising perspectives and inspire optimism, we must acknowledge the significant challenges and concerns associated with implementing transformative changes in music education. There exists a palpable apprehension that our innovative approaches may be perceived as too radical or may not adequately influence the entrenched norms within state conservatories. Additionally, we are acutely aware of the urgency of our mission and harbor concerns about the potential failure to effectively support the many aspiring musicians with disabilities. These fears underscore the complexities of advocating for substantial systemic changes and highlight the need for continued advocacy, research, and collaborative efforts.

To address these challenges, future research should focus on quantifying the impact of inclusive practices on student outcomes, exploring more adaptive technologies, and fostering broader institutional support. It is imperative that the music education community, policymakers, and educators collaborate to create more inclusive environments that not only accommodate but celebrate diversity in musical expression. By doing so, we can ensure that music education remains a dynamic and inclusive field that is accessible to all.

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